Supporting Resilient Coastal Economies in Vietnam:

Informing the operationalization of Vietnam's Marine Strategy with international experiences

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ABBREVIATIONS

ADB	Asian Development Bank
AOC	Australian Ocean Policy
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
AUD	Australian Dollars
BGI	Blue Growth Initiative (FAO)
CBD	Convention on Biological Diversity
CCRF	Code of Conduct for Responsible Fisheries
CFA	Conservation Finance Alliance
COVID-19	Coronavirus Disease
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CRC	Blue Economy Cooperative Research Centre (Australia)
CZMA	Coastal Zone Management Area
EBM	Ecosystem-Based Management
EBSA	Ecologically and biologically significant area
EEZ	Exclusive Economic Zone
EFSI	European Fund for Strategic Investment
EIB	European Investment Bank
EIF	European Investment Fund
EIU	Economist Intelligence Unit
ESESA	Experimental System of Ecosystem Service Accounts
ESG	Environmental, social and governance
EU	European Union
EUR	Euros
FAO	Food and Agriculture Organization of the United Nations
FFA	Pacific Islands Forum Fisheries Agency
GBRMP	Great Barrier Reef Marine Park
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas

GIS	Geographic Information Systems
IATA	International Air Transport Association
ICZM	Integrated Coastal Zone Management
IIA	International investment agreement
IOC	Intergovernmental Oceanographic Commission (UN)
IORA	Indian Ocean Rim Association
IPBES	Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IPFSD	Investment Policy Framework for Sustainable Development (UN)
IUU	Illegal, unreported and unregulated (IUU) fishing
KIP INCA	Knowledge Innovation Project for an Integrated system for Natural Capital and ecosystem services Accounting
km	Kilometer
LSI	Land-Sea Interactions
m	Meter
MACO	Mid-Atlantic Committee on the Oceans (US)
MARCO	Mid-Atlantic Regional Council on the Ocean (US)
MAES	Mapping and Assessment of Ecosystems and Services (EU)
MAFMC	Mid-Atlantic Fishery Management Council (US)
MNRE	Ministry of New and Renewable Energy (India)
MOIT	Ministry of Industry and Trade
MONRE	Ministry of Natural Resources and Environment
MOST	Ministry of Science and Technology
MPA	Marine Protected Area
MPI	Ministry of Planning and Investment
MPP	Marine Planning Partnerships
MSFD	Marine Strategy Framework Directive (EU)
MSP	Marine Spatial Planning
NOAA	National Oceanic and Atmospheric Administration (US)
NCM	National Coastal Mission (India)
NDC	Nationally Determined Contribution
NERRS	US National Estuarine Research Reserve System
NGO	Non-Governmental Organization

NMP	National Marine Plan (Scotland)
NMSP	National Marine Science Plan (Australia)
NOP	National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes (US)
NSC	National Steering Committee (Vietnam)
NZCPS	New Zealand Coastal Policy Statement
NZD	New Zealand Dollars
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
OK 21	Ocean Korea 21 – Framework Law on Ocean and Fisheries Development and its ocean strategy
OMC	Oceanic, marine, and coastal
OPOC	Office of the Pacific Ocean Commissioner
PBSP	Pacific Blue Shipping Partnership
PEMSEA	Partnerships in Environmental Management for the Seas of East Asia
PER	Public expenditure review
PFI	Policy Framework for Investment (OECD)
PGF	Provincial Growth Fund (New Zealand)
PIC	Pacific Island Countries
PIFS	Pacific Islands Forum Secretariat
PPP	Public-Private Partnerships
PROP	Pacific Regional Oceanscape Program, which includes the Ocean Finance Program and Fellowship
R&D	Research and Development
RMA	Resource Management Act (New Zealand)
RPB	Regional Planning Body
SDG	Sustainable Development Goal
SDP	Sustainable Development Programme (Singapore)
SDS-SEA	Sustainable Development Strategy for the Seas of East Asia
SEDP	Social and Economic Development Plan (Vietnam)
SEDS	Social and Economic Development Strategy (Vietnam)
SEEA	System of Environmental-Economic Accounting (UN)
SEEA-EEA	SEEA–Experimental Ecosystem Accounting (UN)

SFFF	Sustainable Food & Fibre Futures Fund (New Zealand)
SIDS	Small Island Developing States
SIMNORAT	Supporting Implementation of Maritime Spatial Planning in the Northern European Atlantic (EU project)
SMEs	Small and Medium Enterprises
SMR	Scottish Marine Regions
SPC	Secretariat for the Pacific Community
SPP	Statement of Public Participation
STI	Science, Technology and Innovation
tCO2e	Tons of Carbon Dioxide equivalent
UK	United Kingdom
UN	United Nations
UNCSD	United Nations Conference for Sustainable Development
UNESCAP	United Nations Economic Commission for Asia and the Pacific
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDESA	Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USD	US Dollars
USP	University of the South Pacific
VASI	Vietnam Administration of Seas and Islands
VBEP	Vietnam Blue Economy Partnership
WACA	West Africa Coastal Area
WCS	Wildlife Conservation Society
WFD	Water Framework Directive (EU)
WFP	United Nations World Food Programme
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WTTC	World Travel & Tourism Council

GLOSSARY OF TERMS

Blue economy: The World Bank defines the blue economy as an economy that uses ocean resources to "promote economic growth, social inclusion, and preservation or improvement of livelihoods while at the same time ensuring environmental sustainability" (World Bank 2017).

Blue growth: Blue growth is the means by which an unsustainable ocean economy can transition towards a more balanced and sustainable one.

Coastal zone[1]: The coastal zone In Vietnam includes both the coastal waters and coastal land:

(a) Coastal waters have an internal boundary, which is the Mean Low Water Mark (average height of the lowest daily tide recorded over many years), and an outer boundary, which is at least six nautical miles away from the Mean Low Water Mark in many years, which is delimited and published by the Ministry of Natural Resources and Environment.

(b) Coastal land includes coastal communes, wards, and towns.

Co-management[2] is a management method in which the government shares powers and responsibilities with community organizations involved in management of aquatic resource protection.

Ecosystems/ ecosystems processes refer to the interaction between the living and non-living environment as a functioning unit (for example, coral reef ecosystems, mangrove ecosystems, and others) (MEA 2005).

Ecosystem services are the tangible and intangible benefits that people obtain from ecosystems.

Ecosystem-based management (EBM) is an integrated approach that incorporates the entire ecosystem, including humans, into resource management decisions, and is guided by an adaptive management approach.

Exclusive economic zone (EEZ): The exclusive economic zone is the area of ocean extending between 12 and 200 nautical miles from shore, including the seabed and subsoil. Coastal countries enjoy sovereignty in their EEZ for the purpose of exploring and exploiting, conserving and managing the natural resources, as well as the establishment and use of artificial islands, installations and structures, marine scientific research, and the protection and preservation of the marine environment.

Integrated coastal zone management (ICM/ICZM) includes comprehensive assessment, setting goals, planning, and managing coastal resources systems, taking into account historical, cultural and traditional factors, as well as benefits in usage conflicts. ICZM is a process of continuous progress to achieve sustainable development. ICM and ICZM are used inter-changeably in this report.

Integrated coastal resources management3 (ICRM) is the planning and implementation of

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1 *See Article 8 Decree, 40/2016/NĐ-CP detailing the implementation of a number of articles of the Law on Marine and Island Resources and Environment.*

2 See Paragraph 4, Article 3, Law on Fisheries 2017.

3 See Paragraph 1, Article 3, Circular 49/2017/TT-BTNMT formulates adjusting the program of integrated coastal resources management.

inter-sectoral and inter-regional coordination mechanisms, policies and tools to ensure that coastal resources are exploited and used effectively for optimal functions. It requires that structures of coastal ecosystems are maintained for sustainable development, contributing to protecting Vietnam's sovereignty, sovereign rights, and national jurisdiction over the sea, ensuring national defense and security.

Marine economy refers to all economic activity that takes place in and around the marine environment, sustainable or otherwise. Also referred to as "ocean economy".

Marine spatial planning is a "public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process" (Ehler and Douvere 2009)

Master planning on sustainable exploitation and use of coastal resources[4] is the orientation and arrangement of space for exploitation and use of resources of the coastal area.

National overall planning[5] is national-level planning, which is strategic in the direction of regional zoning and association, including land, islands, archipelagoes, waters, and airspace; urban and rural systems; infrastructure; use of resources and environmental protection; natural disaster prevention and climate change response; and national security, defense guarantees, and international integration.

National marine spatial planning6 is national planning that concretizes the national overall planning of functional zoning, arranging and rationally allocating the space of sectors and fields in coastal areas and islands, archipelagos, waters, and airspace under Vietnam's sovereignty, sovereign rights, and jurisdiction.

Natural capital is the stock of natural resources, which includes geology, soils, air, water and all living organisms.

- **Living natural capital**: Renewable stocks of natural resources that are harvested for use, such as fisheries.
- **Non-living natural capital**: Nonrenewable stocks of natural resources harvested for use, such as minerals from the seabed.

Ocean economy refers to the sum of the economic activities of ocean-based industries, and the assets, goods, and services of marine ecosystems (OECD 2016). This definition does not imply sustainability of these activities. In this report, "marine economy" is equivalent to ocean economy.

Oceans natural capital is the total available biophysical stock of natural resources in the ocean, for example, fish stocks, minerals and energy resources, mangrove forests, and so on (Narloch, Kozluk and Lloyd 2016).

4 See Paragraph 7, Article 3, Law on Marine and Island Resources and Environment 2015.
5 See Paragraph 2, Article 3, Law on Planning 2017.
6 See Paragraph 3, Article 3, Law on Planning 2017.

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PREFACE & ACKNOWLEDGEMENTS

Inclusive and environmentally sound sustainable development requires managing natural resources that societies depend on for the long term. In the context of marine and coastal resources which provide an important source of income for large numbers of households and revenue for countries, this implies balancing the economic, social, and environmental dimensions of the use of the natural resources in marine and coastal areas. The term "blue economy" is increasingly being used to describe this balanced approach.

For coastal countries such as Vietnam, the importance of its marine economy is well known. The country has used the goods and services provided by the natural assets in its near-shore and coastal areas – including fisheries, mangroves, wetlands, lagoons, and sandy beaches – for tourism, production of seafood, and controlling climate events that cause erosion and weathering. It has also used offshore resources such as petroleum and minerals for revenue generation. Vietnam's 12th Party Central Executive Committee has recognized the importance of sustainable development of the marine economy and has approved ambitious growth and revenue targets in the strategy for the sustainable development of Vietnam's marine economy by 2030, with a vision to 2045 (herein referred to as the Marine Strategy), promulgated in Resolution No. 36-NQ/TW in 2018.

In Vietnam, the World Bank is actively supporting the Government of Vietnam with the coastal development agenda by informing its policy and investment decisions regarding integrated coastal area management, marine economy (including fisheries, energy, tourism, logistics, and coastal city development), resilience to climate change, and institutional strengthening. This support aims to strengthen the development of sustainable and climate smart economic activities in coastal areas in an integrated way, in other words, to facilitate a blue economy growth agenda in Vietnam. This report is part of a series of World Bank-led studies that aim to contribute to Vietnam's efforts to boost its marine/coastal economy in a sustainable and climate resilient manner. [7]

This report has been prepared under the oversight of Diji Chandrasekharan Behr (Senior Natural Resource Economist) and Thu Thi Le Nguyen (Senior Environmental Specialist) from the World Bank Vietnam office in Hanoi. The consultant team was composed of: Cerasela Stancu, Alicia Bullock, Miriam C. Balgos, and Nigel Bradly from EnviroStrat. Ms. Nguyet Hoang facilitated the engagement with the stakeholders in Vietnam and guided the remote consultations with the government. The content of the report was informed by written input, dialogue and consultation with some of the member agencies of the National Steering Committee, namely the Vietnam Administration of Seas and Islands of the Ministry of Natural Resources and Environment (MONRE), Ministry of Planning and Investment, Ministry of Industry and Trade and agencies in tourism, energy and fisheries. Valuable input was received from four provinces that kindly shared their perspectives regarding the Marine Strategy implementation and transition to a blue economy: Khanh Hoa, Kien Giang, Thua Thien Hue and Quang Ninh. We are grateful for the insights from Dr. Mai Trong Nhuan and Dr. Nguyen Chu Hoi, who generously shared their knowledge regarding Marine Strategy and environmental management. Valuable dialogue was carried out regarding the state of the blue economy in Vietnam and the region, as well as the international agenda, with representatives from the United Nations Development Programme (UNDP) Vietnam and Partnerships in Environmental Management for the Seas of East Asia (PEMSEA), and New Zealand Ministry of Foreign Affairs.

The financing of this work was provided by the PROBLUE Trust Fund. PROBLUE was established in 2018 as a multi-donor fund aimed at contributing to the implementation of Sustainable Development Goal 14 (SDG 14). The Fund is fully aligned with the World Bank's twin goals of ending extreme poverty and increasing the income and welfare of the poor in a sustainable way and utilizes the Bank's expertise with integrated coastal management (ICM), fisheries and pollution prevention. It is envisaged that by systematically embarking in ICM and expanding the blue portfolio, this can act as a catalyst for sustainable economic growth, improved livelihoods, and more resilient oceans and coastal areas.[8] PROBLUE is part of the World Bank's overall Blue Economy program, which amounts to around USD 5.6 billion in active projects to date (World Bank 2020).

7 To date, other studies from this series cover the following topics: Situation Assessment of Integrated Coastal Zone Management (ICZM) in Vietnam; Supporting Resilient Coastal Economies: Guidance for Valuing Natural Assets in Coastal Areas and Establishing Coastal Setback Lines; Economic Impact of Non-Compliance With IUU - The Case of Vietnam: A Trade-Based Analysis; and Mobilizing the Private Sector in Shrimp Aquaculture Activities in Vietnam.

8 For more information, see: https://www.worldbank.org/en/topic/oceans-fisheries-and-coastal-economies.

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EXECUTIVE SUMMARY

The purpose of this report is to inform the operationalization of the strategy for the sustainable development of Vietnam's marine economy by 2030, with a vision to 2045 (herein referred to as the Marine Strategy) by providing relevant insights from international experiences with blue economy development. The World Bank definition for blue economy - **to promote economic growth, social inclusion, and preservation or improvement of livelihoods while at the same time ensuring environmental sustainability** – is used as a guiding framework for this work. The vision and objectives of Vietnam's Marine Strategy are broadly aligned with the concept of **blue economy**; however, the term **marine economy** is also used in this report in line with the language used in the Marine Strategy.

As blue economy concepts and definitions continue to evolve, countries have taken different approaches in the orientation towards blue economy and blue growth – based on their context, and specific needs and opportunities. The differences in country contexts and scope of marine economy notwithstanding, there generally are several key elements that all countries and regions have pursued in the effort to boost their blue economy:

- Establish the size of the marine economy (proportion of Gross Domestic Product [GDP], value added, jobs) and its sustainability, and set up targets for sustainable growth – as part of a strategy for policy integration or sectoral approaches
- Leverage coastal and marine spatial planning as a springboard for blue economy solutions and opportunities
- Seek targeted investment in traditional or emerging ocean industries following sustainability criteria, including through investment in science, technology and research
- Pursue smart climate solutions and low-carbon transition.

The Government of Vietnam has adopted an ambitious Marine Strategy that requires careful planning and implementation to deliver complex and inter-dependent social, environmental and economic objectives and targets. This ambitious strategy, promulgated in Resolution No. 36-NQ/TW by Vietnam's 12th Party Central Executive Committee in 2018, is accompanied by several government resolutions – including Government Resolution 26, which is a Master Plan and five-year plan for the implementation of the Marine Strategy and charts out the roles of key line ministries. A range of topic areas need to be addressed concurrently to support the shift from planning to implementation of the Marine Strategy. A summary of insights and recommendations for these topic areas are presented below.

Determining the orientation of blue economy

The scope and objectives of Vietnam's Marine Strategy are comprehensive and establish a wide framework for a blue economy that consists of key economic sectors (natural resources, transport, tourism and recreation, energy, coastal protection and marine ecosystem restoration). The Marine Strategy is grounded in the principles of integration at all levels, harmonization of economic and natural ecosystems, equitable participation, and other sustainable development principles.

As implementing agencies, the Ministry of Natural Resources and Environment (MONRE) and Vietnam Administration of Seas and Islands (VASI) need to **increase awareness about the importance of, and opportunities from, blue economy through focused dialogue, education and engagement of stakeholders (sectors, provinces, science and research, and communities).** This includes articulating the potential for blue economy (current and emerging sectors) to generate new jobs, growth and investment and improve welfare – while reducing pressure on marine ecosystems and adapting to climate change. Development of a dedicated blue economy portal with the dual role for enhancing networking and establishing a data and information repository (that can also underpin the functioning of the National Steering Committee and marine spatial planning process) is recommended.

Systematic measurement of the marine economy and the underlying natural assets is a critical step towards establishing the baseline from which to monitor change – at country, provincial, ecosystem and sector levels. **Blue economy assessment** to identify opportunities for investment (linked to integrated coastal management [ICM] and marine spatial planning) is a foundational step

towards articulating growth and investment opportunities. Vietnam could adopt the use of the UN's System of Environmental-Economic Accounting (SEEA) to develop the net ocean-accounts to reflect the productive use and value of ecosystem services and natural assets in the marine economy. Seeking to mainstream the Marine Strategy objectives and specific targets into Vietnam's national planning instruments (e.g., the Social and Economic Development Strategy (SEDS) and Social and Economic Development Plan (SEDP)), as well as the National Action Plan on Climate Change, is important - even though the timing difference in the planning processes will make it difficult at present.[9]

Short-term steps

- Initiate an initial assessment (systemic measurement) to establish the baseline (size and value) of Vietnam's marine economy, using statistics and emerging practices for valuing Vietnam's sea-based economic activities and the critical marine assets and ecosystems services on which they depend (like in Australia, the European Union [EU] or United States [US]). This can involve the development of the ocean accounts for Vietnam, which would also assist with marine spatial planning development. The assessment should identify appropriate dashboard indicators to measure change and trends and provide estimates at sectoral and coastal provinces levels. This task should be led by the Ministry of Planning and Investment (MPI) in coordination with inputs from the sector line ministries.
- Develop guidance for high-level prioritization of blue economy opportunities (preferably as part of, or in synergy with, integrated coastal zone management (ICZM) and/or marine spatial planning processes). This task should be co-led by MONRE and MPI in a consultative manner with sector ministries and provinces.
- Engage with provinces and regions to increase awareness about blue economy and to identify "quick-wins": opportunities that will help drive project identification and investment mobilization. The task on awareness-raising should be led by MONRE, in line with its task to communicate on the seas and ocean as set forth in Government Resolution 26.
- Initiate engagement with business and the private sector – for example, through avenues such as the proposed Vietnam Blue Economy Partnership and others that may be available at central, regional or provincial levels – with the goal to increase awareness and mobilize resources for blue economy opportunities. This task should involve the leadership of MONRE, MPI and the Vietnam Chamber of Commerce and Industry.

9 The SEDS / SEDP process has already started, while the MSP process, which is a key step towards strategy implementation, has not. However, the mid-term review for SEDP implementation can be used to further mainstreaming of marine strategy objectives and targets.

Marine spatial planning and natural resource management

Marine spatial planning (MSP) is a **cross-cutting policy and planning tool** enabling governments and stakeholders to apply a coordinated, integrated approach. Successful development of the national MSP and the master plan on sustainable exploitation and use of coastal resources will help to create a consistent legal basis for implementing coastal management activities in provinces and provide certainty for investment in blue economy. The certainty associated with an MSP process can also help reduce perceived risks in investing in the marine economy by the private sector. MSP is fundamental to blue economy assessment (1). The MSP process is information intensive and the national MSP should include a directed **strategy for acquiring information** and potentially **appoint a science lead as well**.[10]

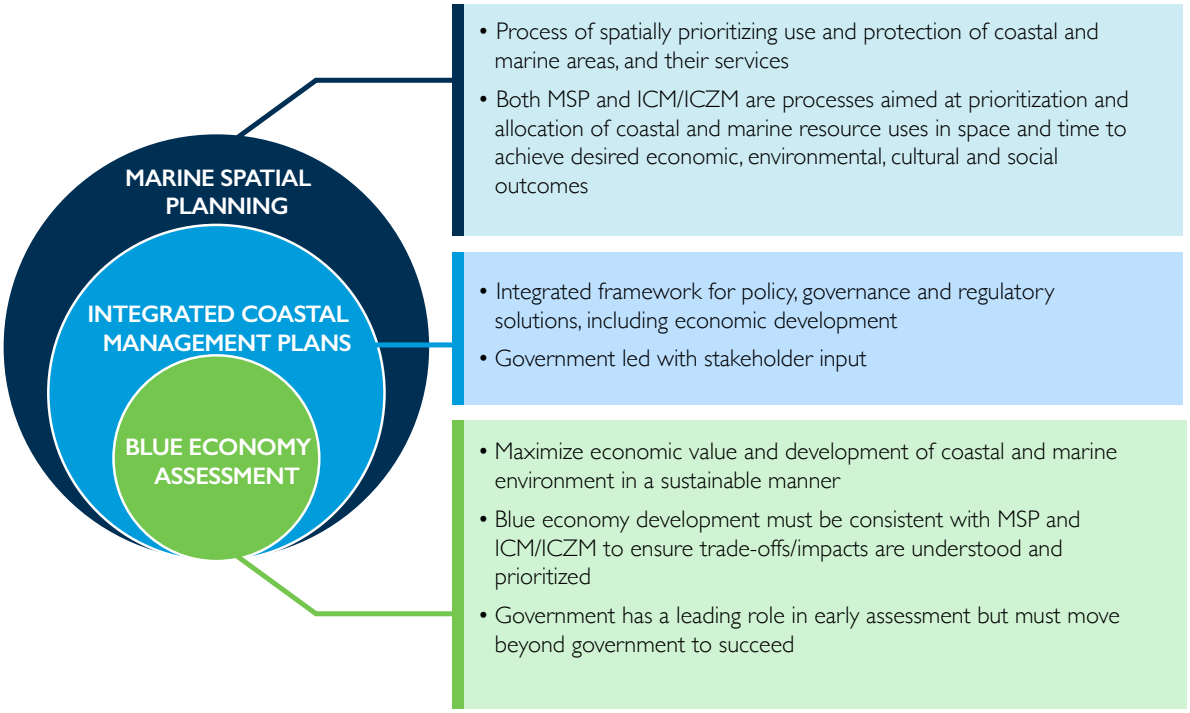


Figure E1. Differences and alignment between MSP, ICM/ICZM and Blue Economy Assessment

Integration (spatial, inter-sectoral and inter-administrative) is a critical dimension of MSP that needs to be considered in the context of central government as well as regional and provincial interfaces. A model for MSP development is recommended (see ***Figure 9*** and ***Figure 10***) that is reflective of this and also seeks integration with national, subnational and sectoral plans, as opportune.

10 Note that the General Statistics Office of Vietnam (sitting under MPI) has been directed to study a set of indicators for Marine Strategy.

The national MSP process should **start with the 'easy wins'** that can be achieved within a relatively short timeframe, rather than contentious and heavily debated issues. For example, **early identification of ecologically and biologically significant areas (EBSAs)** provides a basis for ecosystem-based planning and management. As MSP is an iterative, living process, the identification of existing sectoral activities and their spatial and temporal distribution is also a key starting point, so that planning and implementation can occur with the best available data. Use of an online marine planning portal enables data and maps to be regularly updated.

An MSP **implementation plan** should be developed that establishes national, regional and provincial roles and responsibilities. VASI is the appropriately assigned agency for this role. VASI may like to consider setting an inter-agency committee for MSP development and implementation. This could be a sub-committee to the National Steering Committee.

Short-term steps

- Obtain approval from the National Steering Committee for the MSP development process/ model and the interface between central and provincial and/or regional levels (see for example Figure 10), including resourcing. This task should be led by MONRE.
- Establish regional steering committees/clusters of provinces to drive MSP planning and implementation at provincial and/or regional level. This task should be led jointly by MONRE and MPI in close coordination with provincial level Departments of Natural Resources and Environment (DONREs) and Departments of Planning and Investment (DPIs).
- Appoint a Science Lead for the MSP process. This task should involve MONRE, the Ministry of Science and Technology (MOST) and related line ministries, with priority objectives to:
    - Establish science needs and conduct stocktaking of science and data availability, including information on ecologically and biologically significant areas, social aspects (traditional uses, human settlements), physical processes (currents, waves, sediment flow, bathymetry), climate change data, and sectoral activities.
    - Develop a data and information acquisition strategy, and explore the development of a data portal with input from stakeholders.
    - Establish a framework for stakeholder engagement and public participation. This can include awareness campaigns to develop common understanding on MSP and, potentially, the blue economy as well. This task should be led by MONRE and shared with the National Steering Committee.

Effective institutional arrangements and inter-sectoral coordination between agencies

Two key elements for operationalizing a blue economy and marine spatial plans are clear institutional arrangements at the country level. The latter should offer clear and specific responsibilities to different ministries, agencies and actors in the marine space and have systems to hold them accountable for delivering the assigned responsibilities. In addition, it is important to have robust and low-transaction cost coordination mechanisms – both within ministries and across ministries.

To implement the Marine Strategy, the Government of Vietnam established the National Steering Committee (NSC) through the merger of the state steering committee on basic surveys of marine resources and environment and the coordination committee for the implementation of the ICZM strategy. As an inter-disciplinary committee, the success of the NSC will depend on the effectiveness of its coordination and collaboration, both within the committee itself, and in terms of its engagement with relevant regional, provincial and sectoral coordinating mechanisms. This requires clear outcomes and accountability, roles and responsibilities, and resourcing for activities. Because the NSC is high-level in terms of institutional arrangements, further mechanisms will be required for mobilizing resources, mainstreaming and implementing the Marine Strategy. This includes regional and/or provincial steering committees. Because the existing policy framework relevant to the Marine Strategy is extensive, we recommended conducting a network analysis to identify connections and dependencies. This will aid in developing effective inter-agency coordination and confirm where the implementation of the Marine Strategy can add value to existing efforts, build connections across silos, and bridge policy and coordination gaps and weaknesses.

A Vietnam Blue Economy Platform (VBEP) has been proposed by MONRE. It is important that the functions and objectives of the VBEP do not overlap, but they either support or stretch the functions of the NSC. The VBEP platform could broaden the focus of the partnership beyond policy insights to include a strong focus on marine strategy implementation and mainstreaming as well as investment/financing.

Short-term steps

- Establish regional and/or provincial steering groups as a local mandate for the NSC (refer to recommendations in the Chapter on Marine Spatial Planning for further related details).
- Conduct policy network analysis, stakeholder mapping and social network analysis to identify connections, dependencies and gaps in Vietnam's marine economy policy development and implementation. This work should be led by MPI in line with their tasks in Government Resolution 26 and presented to the NSC.

- Establish a Monitoring and Evaluation group within the NSC to provide for transparency, consistency and accountability across all agencies that have a role in Marine Strategy implementation. This should consider performance/reporting needs in relation to coordination/collaboration, and ability to track tasks, outcomes and targets. The coordination group should be administered by the NSC secretariat with the participation of representatives from different line ministries.
- Progress the establishment of the Vietnam Blue Economy Platform, with a focus on priority technical areas and investment mobilization. The platform establishment should be led by MONRE and MPI should have the overall responsibility for investment mobilization.

Strengthening capacity for integrated management of natural resources and sea and islands environment

Strengthening capacity is a pivotal component of Vietnam's Marine Strategy. It is one of the key elements of preparedness that could spell success or failure in operationalizing the Strategy and effectively achieving its goals and objectives. It is therefore critical to **carry out systematic stakeholder and capacity needs analyses** on which to base capacity building that meets the needs of each focal area of the Marine Strategy.

Capacity needed at the individual, organizational, societal, and enabling environment levels to help achieve the specific objectives of the Strategy must be identified and pathways for their development have to be formulated. These two tasks should be coordinated by MONRE and each of the involved line ministries should do their own capacity needs assessment and pathway development.

Important elements of capacity building needed to support the Strategy include: (i) internal analysis of stakeholder organizations (both governmental and non-governmental) to identify core competencies that can be leveraged in implementing the Marine Strategy; (ii) application of lessons learned and best practices and approaches from relevant domestic and international capacity building initiatives; and, (iii) coordination and collaboration among existing capacity building efforts. This task should be linked with the stakeholder analysis mentioned previously. For this task, MONRE should closely involve other line ministries.

Mobilizing resources for priority investments and using public funds to leverage private financing

The Marine Strategy articulates a broad scope for which investments are necessary, and options and pathways are sought to unlock finance in marine sectors and ecosystem management, specifically for:

- Marine sectors such as tourism, aquaculture and fishing, maritime transport and logistics, coastal industries, renewable energy, and oil and gas exploitation

- Science and technology, infrastructure, and innovative practices, in order to sustainably manage marine and coastal resources
- Human well-being and reduced environmental risks and pollution.

A broad range of instruments are used to make capital available for blue economy and ecosystem protection and conservation, with different levels of complexity and administrative requirements, including: blended finance, blue bonds, conservation, climate and impact bonds, debt swap or carbon schemes. Significant capability, clarity on roles and responsibilities among different ministries and levels of government, and coordination among these ministries, levels of government, and among government and private sector and international partners is required in Vietnam to test some of the instruments and develop investable propositions. A **two-stage process to undertake blue economy assessment and prioritize opportunities** is recommended for Vietnam in the context of marine action plan and MSP development (see Figure 19). This will require environmental and ecosystem-based management knowledge as well as economics, financial modeling, due diligence, business planning and more. A strong program for building awareness about blue economy opportunities and financial and investment literacy – including a 'learning by doing' approach through technical assistance[11] for blue economy projects is an appropriate approach for Vietnam. This could include **transfer of knowledge and skills from renewable energy or waste** sectors, where there is existing experience on the ground in Vietnam with investment. Insights and approaches from **Climate and Biodiversity Finance planning should also be considered**, including the transferability and synergy of investment solutions.

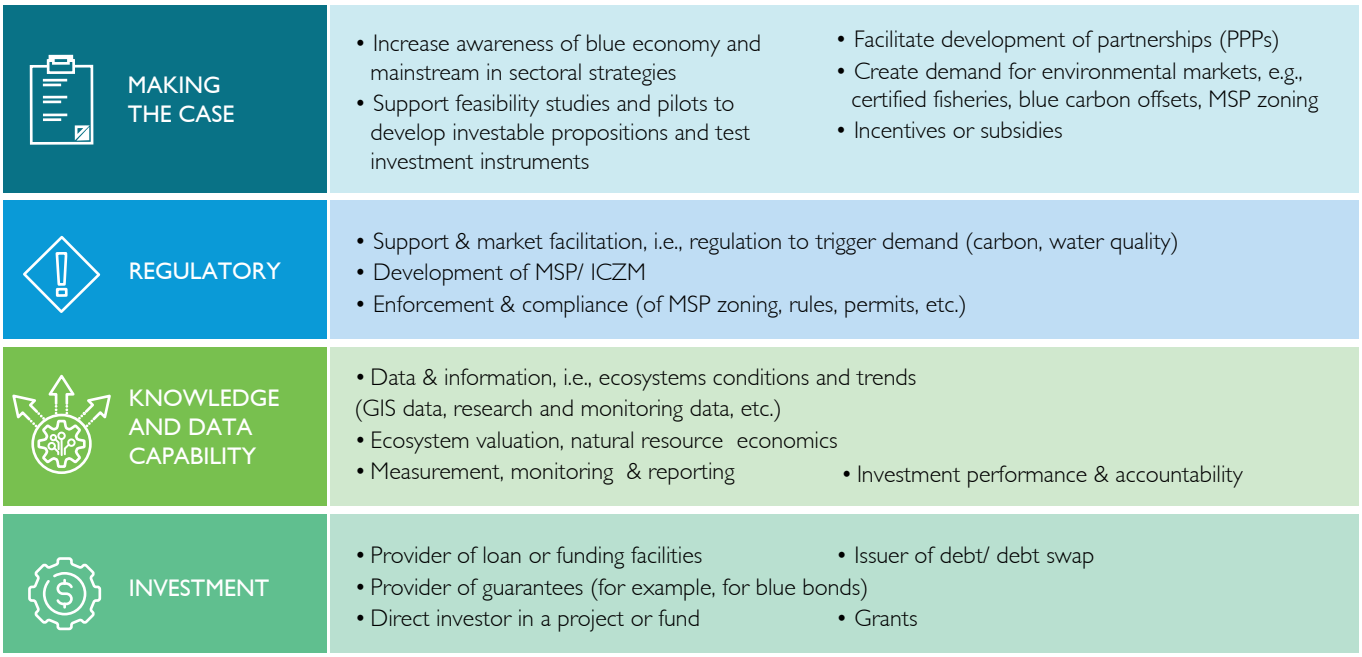
Development of an **investment framework for blue economy** is also recommended, starting with **carrying out an investment assessment** to determine existing commitments for specific marine strategy objectives and indicators towards the United Nations (UN) Sustainable Development Goal 14 (SDG 14) (not just from government but also development partners, multilateral organizations, foundations, etc.). This approach (which can follow the public expenditure review practices) should identify opportunities for coordination and efficiencies in public revenue. Potential functions for the **government include catalyst, regulatory, knowledge and data, and investment roles** (see Figure E2).

11 Technical assistance is often available from development partners and multilateral agencies, as well as investment funds. In the Pacific region, the World Bank and the Global Environment Facility have funded the Pacific Ocean Finance Fellowship Programme, an activity under the Pacific Islands Regional Oceanscape Programme (PROP).

Short-term steps

These suggestions are based on the premises that coordination with development partners to access knowledge and technical assistance is the most viable pathway forward for Vietnam:

- Initiate a preliminary investment diagnosis to determine existing investment commitments and capital flows and gaps (from government but also development partners, multilateral organizations, foundations, etc.) for specific objectives and indicators of the Marine Strategy and SDG 14. The assessment should consider the nexus between climate finance (which is more advanced in Vietnam) and blue economy finance and aim to identify opportunities for coordination and efficiency in public revenue as an initial step – including regarding the use of new investment models. The development of an investment tracker for ocean finance (conservation and sustainable use of marine assets) may also be considered. This task should be led by MPI, consistent with the ministry's mandate.
- Undertake a pre-feasibility assessment regarding the opportunity to establish a bespoke blue investment facility for Vietnam. The mandate for such a facility is to accelerate transition to blue economy through a focus on investment readiness and developing the investment pipeline as well as providing technical assistance to public and private sector entities. Where possible, the facility could also provide catalytic resources to leverage the private sector. This task should be led by MPI and involve the Ministry of Finance and other line ministries.
- Strengthen the focus of VBEP on investment to leverage the influence of development partners to bring together different government agencies, the private sector, donors, investors and non-governmental organizations (NGOs) seeking to establish an investment pipeline. A focus on blended finance opportunities is encouraged as an effective model for investment. This task should be led by MPI in close coordination with the line ministries.
- Consider the possibility of adopting the Sustainable Blue Economy Finance Principles and joining the UNDP's Sustainable Blue Economy Finance Initiative (a platform targeted at the finance, investment and insurance sectors). Joining such frameworks helps demonstrate commitment to blue economy, build knowledge and access to data and tools, while also increasing the ability to attract investment. These efforts could be driven as part of the VBEP platform. This task should be led by MPI jointly with MONRE and other key line ministries.



Source: Authors' compilation

Figure E2. Core functions of the government in blue economy development and finance

International cooperation for sustainable development of the marine/coastal economy

Implementation of the SDGs remains a national hurdle for Vietnam going forward, constrained, among other challenges, by **the lack of cooperation and coordination among government agencies and the business sector**, other domestic organizations and the international community, as well as by weak engagement and resource mobilization from the private sector.

Addressing SDG 14, and development of a blue economy in Vietnam in particular, calls for **mobilization of international donor support for the blue economy agenda in the country**, which could benefit from lessons learned from international and national initiatives, especially on organizational structure, coordination and collaborative mechanisms, and investment policies.

Key messages

The decade of the 2020s will be critical for delivering the SDGs. **Significant resource mobilization, political support and careful planning** and **thinking innovatively** will be necessary to achieve the ambitious targets set in Vietnam's 2030 Marine Strategy with a vision to 2045.

There is a **low level of awareness about the concept of blue economy** (that is at the core of the Marine Strategy) as well as limited capability for implementing and capturing blue economy development opportunities. However, government agencies and provincial administrations are motivated to start implementation of the Marine Strategy as a means to capture social and economic benefits and there is regional and international experience that can be accessed.

A positive start for the implementation of the Marine Strategy depends on the ability of the NSC and government agencies to **swiftly develop the master plan guidance for marine spatial planning**. At the time of preparing this report, a potential window of opportunity to progress the MSP in coordination with the planning process for the SEDS/SEDP to increase its significance is to inform the mid-term review of SEDP implementation and to inform master planning processes at the subnational level. **Science and research** knowledge and tools need to be leveraged in the planning process and expanded to contribute to the transition towards blue economy and emerging sectors (for example, nature-based solutions).

Inter-provinces collaboration can be fostered through the MSP process by focusing on cluster solutions (e.g., shared infrastructure or flooding protection.) The NSC is high-level and its effectiveness can be enhanced through the establishment of sub-committees (for sectors or issues) and replication at the provincial level – reflecting on the experience with ICZM in Vietnam and across the region.

Private sector involvement, including investment and finance, needs to be secured at the planning stage for the implementation of the Marine Strategy to increase awareness and understanding about blue economy opportunities and investment in new assets, like nature-based solutions for carbon sequestration or water purification.

Photo: Vadim Petrakov - shutterstock.com

INTRODUCTION

Globally, over three billion people are dependent on marine and coastal environments and draw benefits from the sea directly or indirectly. The importance of marine-linked economic activities and contribution to GDP of coastal areas is well understood and increasingly measured (World Bank 2018, OECD 2016). The Organisation for Economic Co-operation and Development (OECD) estimates that the ocean economy gross value-add will increase from USD 1.5 trillion in 2010 to 3 trillion in 2030 (OECD 2016). In the same period, the direct employment contribution of ocean industries is expected to increase from 31 million to 40 million people. There are significant drivers for growth that will continue to increase the importance of the ocean and marine ecosystems in the coming decades (EIU 2015):

- Food security
- Climate change and interest in renewable sources of energy
- Rapid coastal development and urbanization
- New technologies that make it feasible and economically viable to access new ocean resources
- Maritime transport.

However, ocean resources are limited and the health of the marine ecosystems is declining. The combined impact of climate change and sea level rise, ocean acidification, over-exploitation and degradation of marine ecosystems is putting many people living in coastal areas at risk and threatens on-going economic activities. Importantly, it is also creating uncertainties for the potential to capture value from the ocean economy into the future (IPBES 2019, IPCC 2019).

Climate change is expected to impose significant costs on coastal communities, however timely investment in blue economy solutions and low-carbon transitions can reduce adaptation costs while also providing opportunities for economic growth and job creation in established and emerging new marine sectors (Table 1) (EIU 2020).[12] Carbon sequestration and natural solutions (for example, waste assimilation by mangroves) are seen as emerging industries with large potential for growth.

Table 1. Overview of blue economy sectors and drivers for growth

Type of activity	Ocean / marine service	Industry sector	Drivers for growth
Use of marine living resources	Seafood	Fisheries (primary fish production through processing, trading, equipment and infrastructure)	Demand for food and nutrition

12 There are increasing debates over whether industries like offshore oil and gas extraction should be considered as blue economic activity – since they generate large greenhouse gas emissions and directly impact marine habitats.

Type of activity	Ocean / marine service	Industry sector	Drivers for growth
		Aquaculture	Demand for food and nutrition
		Trade in non-edible products	
	Marine living resources for non-food use	Pharmaceutical products and chemicals	Research & development (R&D) for high-value and emerging industries (health care, cosmetic, enzyme, nutraceutical)
Use of marine non-living resources	Minerals (seabed)	Mining	Demand for minerals
	Energy sources	Renewables (tidal, wave, wind)	Demand for energy
		Oil and gas	Demand for energy
	Freshwater supply	Desalination	Demand for freshwater
Commerce and trade linked to ocean	Transport and trade	Shipping	Growth in seaborne trade
		Ports and infrastructure	
	Coastal development	National planning – public and private	Urbanization
	Tourism & recreation	Tourism	Growth in tourism
		Coastal development	Coastal urbanization
Response to marine protection challenges	Coastal protection	Protection from storms, sea level rise, habitat protection	Growth in coastal and ocean protection and conservation activities
	Carbon sequestration	Blue carbon	Climate mitigation
	Waste Disposal for land-based industry	Assimilation of nutrients	Wastewater management
	Ecosystem monitoring & surveillance	Technology	R&D in ocean technologies

Source: World Bank 2018

Awareness about ocean and marine ecosystems was enhanced by the UN 2030 Agenda for Sustainable Development and SDG 14 – Life Below Water, as well as the active promotion of the importance of ocean and marine economy, and the opportunities for blue economy development (World Bank and UNDESA 2017). Because Blue Economy sectors rely on healthy sea and coastal ecosystems, their degradation and over-exploitation, and the effects of climate change present both risks as well opportunities for investment to shift away from harmful practices and economic activities (Credit Suisse 2020).

As countries are increasingly focused on making progress on SDGs, the 2020-2030 'UN Decade of Ocean Science for Sustainable Development' presents an opportunity for boosting the blue economy policy agenda while creating a platform for the science community to strengthen transdisciplinary approaches and collaborations to identify and promote blue economy solutions (Claudet., J. et al. 2020).

Marine context in Vietnam

Vietnam has 3,260 kilometers (km) of coastline (excluding the coastline of islands), an exclusive marine economic zone of about 1 million km^2, which is triple the area of the mainland. Coastal provinces and cities under the central government occupy 51 percent of the total area of the country and nearly 50 percent of the country's total population live in these provinces and cities. Vietnam also has 3,000 islands. The estimates of the size of the marine economy are between 6 percent to 30 percent of GDP (depending on the definition used).

The land strip along the coast is estimated (by MONRE) to be 6 million hectares, of which 2 million is classified as agricultural land and 1.8 million are classified as forests. About 250,000 hectares of mangrove forest also remain on the coast (distributed primarily in the northern and southern parts of the country). In the central region there are also 40,000 hectares of lagoons – shallow water blocks that have brackish or saline water and are highly favorable for fisheries development – as well as 290,000 hectares of intertidal zones and 10,000 hectares of beach sand.

Drawing on outdated baseline survey and mapping work, it is known that Vietnam's marine mineral assets (done at different resolutions and at various points in time) revealed that there are more than 50 points of marine mineral sand accumulation with rare earth minerals and cassiterite and gold in the seabed. There are also 18 fields of sand for construction materials at depths of 30 meters (m). There is also petroleum stock in the continental shelf under 200 m of water. There are approximately 11,000 living species in Vietnam's waters, scattered across 20 typical ecosystems and six different marine biodiversity areas. There are also a range of ecosystems – island ecosystems, sand dunes, wetlands, river mouths, aquaculture ponds, coral reefs, sea weeds, mangrove forests, lagoons, swamps, coves, bays, gulfs, inlets, tidal zones, soft and hard seabeds – that create the diversity and richness of Vietnam's seas. These ecosystems contain high economic and conservation value.

The expansive coastline of Vietnam is one of the most exposed to extreme climate events and sea level rise. Recent World Bank analysis by Rentschler et al. (2020)[13] found that approximately 11.8 million people in coastal provinces are exposed to the threat of intense flooding and over 35 percent of settlements are found on eroding coastlines. In addition, large tracts of the low-lying deltas of Vietnam are exposed to the risks of salinity intrusion. Compounding current risks and flood and erosion events is climate change. In a pessimistic scenario, mean sea levels are projected to rise by 30 centimeters by 2050 and 70 centimeters by 2100.

There is recognition that continuing business as usual is not feasible if the country is to make use of its assets in coastal areas over the long-term. There is interest in building a blue economy through transitioning the marine economy to smart climate solutions, sustainable natural resource management and ecosystem protection. The potential for Vietnam's coastal economy includes the development of seaports, tourism and renewable energy (wind, solar, tidal). These opportunities are rapidly being exploited and there is urgent need to be more systematic and strategic in how they are used for the socioeconomic development of the country, national interests and local livelihoods.

Strategy for the Sustainable Development of Vietnam's Marine Economy

Vietnam's 12th Party Central Executive Committee promulgated Resolution No. 36-NQ/TW on the strategy for the sustainable development of Vietnam's marine economy by 2030, with a vision to 2045 (herein referred to as the Marine Strategy) in 2018. The Strategy recognizes the important contribution of the marine economy to Vietnam's economic and social development, and sets out targets and objectives that will be delivered through specific pathways that:

- Develop the marine and coastal economy
- Develop sea areas by optimizing natural conditions, harmonizing conservation and development
- Consider environmental protection, marine biodiversity and climate resilience (including managing marine plastic waste)
- Ensure national defense, security, external relations and international cooperation
- Improve people's lives.

They will also be delivered through breakthroughs such as:

- Innovative institutional and growth models for marine economy
- Advanced scientific and technological breakthroughs
- Multipurpose infrastructure (based on economic and natural ecosystems).

13 See World Bank report on Resilient Shores, at: https://openknowledge.worldbank.org/handle/10986/34639.

The implementation of the Marine Strategy is enabled by other important policies and legal frameworks that the Government has adopted, particularly the 2015 Law on Natural Resources and Environment of Sea and Islands and the 2017 Law of Planning, which includes a requirement for national marine spatial planning (the Master Plan currently in development). The operationalization of the Strategy is supported by two key policy instruments. These are:

- Decision No. 203/QD-TTg approved in February 2020, which establishes the National Steering Committee on the implementation of Vietnam's Marine Strategy. The National Steering Committee (NSC) has the responsibility to:
  - Inform policies and laws on sustainable marine economic development
  - Assist the Prime Minister to issue schemes and projects of sustainable marine economic development
  - Direct, regulate and coordinate across ministries
  - Help with ensuring effective implementation of marine economy activities.
- Resolution No. 26/NQ-CP approved on March 5, 2020, which is the Government's five-year Master Plan for implementing the Marine Strategy. Resolution 26 includes 51 activities, assigned across key ministries, that need to be implemented within the time period of 2020-2025.
- Prime Minister Decision No. 647/QD-TTG dated May 18, 2020, which approved the proposal on Strengthening International Cooperation for Implementing Vietnam's Marine Strategy. The decision primarily authorizes the pursuit of greater cooperation with international donors and organizations to mobilize support to deliver both Party Resolution 36 and Government Resolution 26.
- The approval of the planning task for the Marine Spatial Plan – this lays out the approach and orientation that will be taken in the process of formulating the Marine Spatial Plan.

Report outline

The core purpose of this report is to share key considerations for operationalization of Vietnam's Marine Strategy based on insights from international experiences regarding blue economy development. The report also helps to raise awareness regarding how a blue economy agenda could be a pivot for boosting coastal resilience and development in Vietnam.

The report covers specific areas of interest related to institutional approaches and capitals (natural, human and financial) that were identified by the World Bank in dialogue with the Government of Vietnam, starting with an orientation to blue economy. These distinct but closely inter-linked areas are viewed as critical to bringing greater coherence to the additional support requirements for developing the Vietnamese coastal economies/ blue economy:

- Marine spatial planning and natural resource management
- Effectiveness of inter-sectoral coordination

- Capacity building
- Mobilization of investment
- International support and coordination

In order to gather the most relevant insights, three methods were applied in the preparation of this report:

- Consultations with selected government agencies and stakeholders in Vietnam directly responsible for implementation of the Marine Strategy or with an interest in blue economy and sustainable development – with the aim to gather firsthand input and perspectives to guide and refine the focus of this work, based on expressed views and needs[14]
- Wide review of relevant and recent literature and initiatives on the subject matters to identify the most meaningful insights for Vietnam's context
- Country case studies with a view to broad approaches and/or specific practices and experiences. Over 15 countries are referenced in the report.

The chapters of the report first present the rationale for the topic, followed by examples and insights from international case studies. Each chapter includes recommendations for Vietnam that are based on the insights and lessons learned in other countries. Short-term/immediate next steps have been identified for all of the six subject areas. The chapters present the following:

- **Chapter 1, Determining the orientation of blue economy**, focuses on the concept of blue economy (principles and definitions), including the distinction from the marine economy, and provides country examples regarding the approaches and positioning of blue economy within the wider economy and green growth drivers.
- **Chapter 2, Effectively using marine spatial planning**, provides insights and lessons from a wide range of countries about their experience with preparing and implementing marine spatial plans. Critical elements of effective MSPs and the potential benefits are also addressed.
- **Chapter 3, Effectiveness of inter-sectoral coordination between agencies**, outlines various approaches to integration to overcome the traditionally fragmented, sectoral approaches to marine management. Effectiveness of agency coordination on aspects like infrastructure development and access to funding is also covered.
- **Chapter 4, Strengthening capacity for integrated management of natural resources and sea and island environments**, explores integrated management as a fundamental pre-requisite for the effective implementation of the Marine Strategy.

14 A semi-structured discussion framework was developed jointly with the World Bank as basis for engagement with selected stakeholders: central government ministries and agencies (MONRE & VASI, MPI, MIT, MCST), four provinces, academia (University of Hanoi) and international partners (UNDP and PEMSEA). Input and perspectives were gathered through consultations by telephone or video-link; translation was used when necessary. Several of the consulted parties provided written responses, which were translated from Vietnamese into English.

- **Chapter 5, Mobilizing resources for priority investments and using public funds to leverage private financing**, describes a range of countries' investment approaches involving public and private finance, and the importance of measurement, science and technology in articulating blue growth.
- **Chapter 6, International cooperation for sustainable development of the marine/ coastal economy**, explores how Vietnam can leverage international cooperation efforts to maximize positive impacts in the development of the country's blue economy – with a focus on resource mobilization.

The ability of Vietnam to leverage such knowledge and its own experiences (SEDS, ICM, etc.) to pivot and adapt within a recovery-focused agenda, will assist with the success of the Marine Strategy implementation.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CHAPTER I.

Determining the orientation of blue economy

Photo: GreenOak - shutterstock.com

1.1 Blue economy definition and approaches

The concept of the 'blue economy' emerged with the increased need to ensure that socioeconomic growth did not occur at the expense of marine and coastal environments and natural capital. There are different definitions and principles that underpin the concept of a 'sustainable' blue economy (see Table 2 below).

Table 2. Blue economy: principles and definitions

Principles for a sustainable blue economy (WWF 2015)	Blue economy (World Bank 2017)	Blue economy (FAO 2014)
Is governed by public and private processes that are inclusive, well-informed, adaptive, accountable, transparent, holistic, and proactive Public and private actors must set measurable goals and communicate progress, develop adequate rules and standards for the effective governance of marine space and actively cooperate to promote change	An economy that "seeks to promote economic growth, social inclusion, and preservation or improvement of livelihoods, while at the same time ensuring environmental sustainability" [This is distinct from the broader 'ocean economy', which includes all economic activity taking place in and around the ocean, sustainable or otherwise]	Coherent approach for the sustainable, integrated and socioeconomically sensitive management of oceans and wetlands, focusing on capture fisheries, aquaculture, ecosystem services, trade and social protection of coastal communities

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) has identified four key elements required in coastal and marine economic activities to be considered blue economy:

- Protects, restores and sustains healthy coastal and marine ecosystem services
- Generates sustainable, equitable economic benefit and inclusive growth
- Integrates approaches between multiple industries and government
- Innovates, informed by the best available science.

In the 2016 report ***The Ocean Economy in 2030***, the OECD put forward a framework for ocean economy that illustrates the linkages (impacts and dependencies) between marine ecosystems as natural capital assets on which ocean-based industries depend (Figure 1). The OECD measures the size of the ocean economy based on gross value-add (i.e., the direct net economic contribution of an industry to the overall economy) and highlights the need for marine ecosystem valuation to recognize and address environmental externalities.

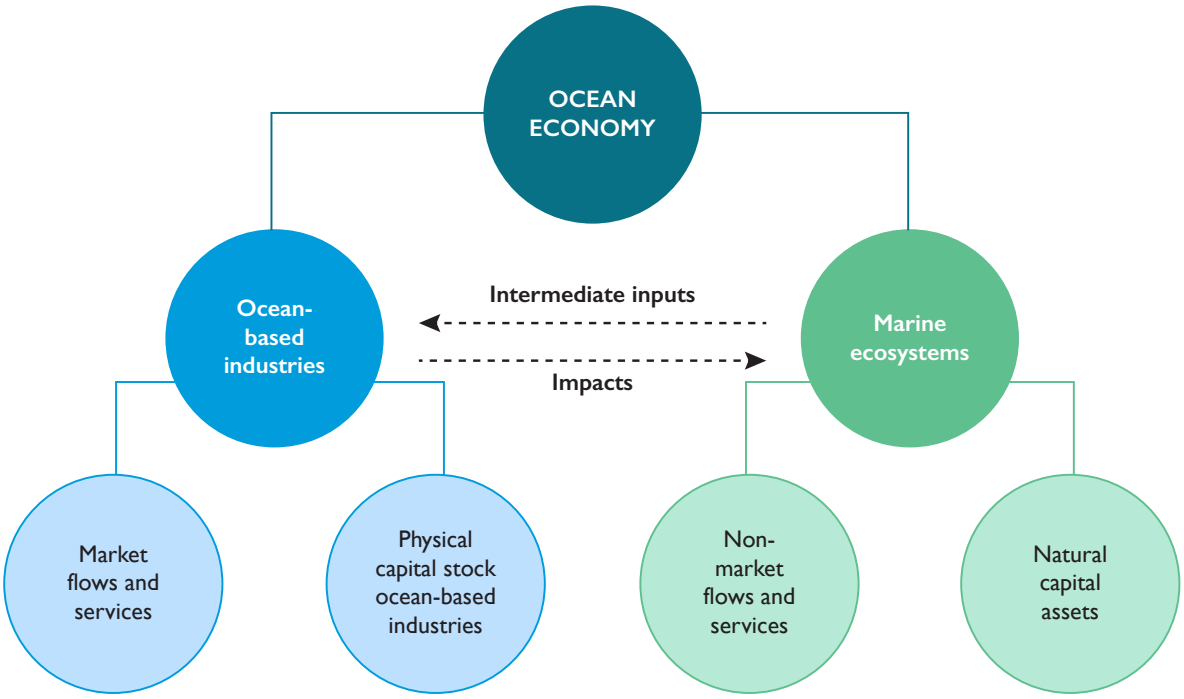

Figure 1. OECD's conceptual framework for ocean economy

For the purpose of this work, the World Bank definition is followed, which is aligned with the scope of blue economy as defined in Vietnam's Marine Strategy.

Countries have taken different approaches in the orientation towards blue economy and blue growth, based on their contexts, and specific needs and opportunities. The differences in country contexts and scope of blue economy notwithstanding, there generally are several approaches (or a combination of them) that countries and regions have pursued in the effort to progress blue economy (Patil et al. 2018):

- Measure the size of the marine economy (proportion of GDP, value added, jobs) and its sustainability (environment and ecosystems, social) and set up targets for sustainable growth, as part of a strategy for policy integration or sectoral approaches
- Seek private investment in traditional or emerging ocean industries along principles of sustainability, often enabled by public investment in science, technology and research
- Leverage coastal and marine spatial planning as a springboard for blue economy solutions and opportunities.

Mitigation of climate change is also one of fundamental principles that drives the focus on blue economy opportunities, even though it may not be defined as an actual approach.

To the extent that blue growth overlaps with green growth, OECD policy recommendations include:

- Enhancing efficiency in the use of resources and natural capital, and reducing waste
- Stimulating innovation of new technologies to support GDP growth and enhance natural capital

- Creating new markets by stimulating demand for green technologies, goods, and services
- Measuring natural capital and incorporating in economic decisions
- Boosting investor confidence through addressing environmental and social risks.

1.2 International experience with blue economy development

Generally, countries apply more than a single approach in their effort to progress blue economy, which is reflective of the integrative nature of blue economy concept (see Table 3). The combination of approaches depends on policy frameworks and objectives (for example, climate objectives), sectoral growth potential (for example, aquaculture or tourism), and the science and research and development (R&D) capability. Leadership and champions of blue economy in government, science or industry can also be factors that influence the approach towards blue economy.

Table 3. Approaches to blue economy in selected countries

Broad approaches	Australia	EU	Indonesia	South Korea	United States	India
Measuring the blue economy; sectoral approach	X	X			X	
MSP/ICM driven		X	X	X	X	X
Programmatic investment; science	X	X	X	X	X	X
Mitigation/ adaptation to climate change	X	X				X

In the context of recovery from the Coronavirus Disease (COVID-19) pandemic, a ***blue green deal*** approach is appearing to emerge, with efforts underway in countries like the US, where a policy framework for developing the US blue economy in the 21st century has been proposed.[15]

1.2.1 Australia

Australia's view of blue economy is to promote the development of marine industry that ecologically, economically and socially benefits from marine ecosystems, and to ensure that the ecosystem-based management model is at the core of decision-making processes for industrial and community development (Australian Government 2012). This is in line with the Australia's Ocean Policy Framework that was developed in 1998.

15 Policy document available at: https://www.middlebury.edu/institute/sites/www.middlebury.edu.institute/files/2020-07/OCAP%20Final%20Report%20July%202020.pdf?fv=jU9WiDNR.

The country's approach to Blue Economy is articulated in the National Marine Science Plan 2015-2025 (NMSP), a 10-year marine science plan to support the development of Australia's blue economy. The plan is intended to support the growth of the ocean economy to 100 billion Australian dollars (AUD) by 2025 through addressing seven key challenges:

- Maintaining marine sovereignty and security and safety
- Achieving energy security
- Ensuring food security
- Conserving biodiversity and ecosystem health
- Creating sustainable urban coastal development
- Understanding and adapting to climate variability and change
- Developing equitable and balanced resource allocation.

The NMSP provides the blueprint for and is helping to channel some of the resources for boosting blue economy. The plan outlines the role of research and development activities to address each challenge, without a central role for marine spatial planning (Voyer et al. 2017).

To transition the blue economy into mainstream economic development, address risks from ecosystem degradation and climate change, and capture opportunities for development, a wide range of programs and initiatives are ongoing at state, local and international levels. [16] One of the recent major initiatives is the establishment in 2019 of the Blue Economy Cooperative Research Centre (CRC) to enhance the development of Australia's sustainable blue economy through the delivery of world-class, industry focused research into integrated seafood and renewable energy production systems. The CRC is an AUD 329 million research project based on a 10-year collaboration between 45 national and international partners from industry, research and government, underpinned by an AUD 70 million cash investment from the Federal Government, plus an AUD 78 million cash investment and AUD 181 million in-kind investment from participants. It is expected to generate more than AUD 4 billion for the national economy.[17]

Australia's blue economy agenda is also reflected in its international activities. For example, the National Marine Science Committee has a leadership role in communicating about the UN's Decade of Ocean Science for the benefit of Australia.

The experience with progressing blue economy – and more specifically, the Ocean Policy, as an underpinning framework – is not without criticism. The major marine bioregional planning process undertaken by the federal government as part of the activities under the Ocean Policy (an MSP-like process) lost momentum due to limited state involvement, confusion, too narrow responsibility and sectors having a dominant role. Lack of dedicated funding for implementation after the initial period, as well as monitoring and evaluation, are part of the challenges identified (Vence, J. 2014).

16 Australia has three levels of government: federal, state and local levels, which involve a combination of specific powers as well as shared/concurrent powers. The federal government is responsible for areas like foreign affairs and defense, and it has shared responsibilities with state governments in areas like environment, fisheries, tourism, science and technology. The federal government provides about half of the budget of state governments to manage the implementation of policy and delivery of services.

17 There is no information available on how the contribution to the Australian economy was estimated.

1.2.2 India

A quarter of the country's population lives by the coast and improving coastal management is an important element of India's Nationally Determined Contributions (NDCs) under the Paris Agreement in order to:

Create an additional carbon sink of 2.5 to 3 billion tons of carbon dioxide equivalent (tCO_2e) through additional forest and tree cover, including mangroves, by 2030

Better adapt to climate change by enhancing investment in sectors vulnerable to climate change, including coastal regions

Build capacity and invest in cutting-edge climate technology.

The National Coastal Mission (NCM) was initiated under the National Action Plan on Climate Change (NAPCC) and aims to improve the management of coastal areas to respond to the threats of climate change. The NCM is part of the Society of Integrated Coastal Management (responsible for ICM implementation) and is tasked with promoting the blue economy agenda while recognizing the importance of conservation and resource sustainability.

In 2017, the Federation of Indian Chambers of Commerce and Industry, the national business and industry advocacy group, led to the development of the knowledge paper ***Blue Economy Vision 2025: Harnessing Business Potential for India Inc and International Partners***. The aim was to increase awareness within India Inc about the growing global and regional focus on the sustainability of harnessing ocean resources. Although this is not an official document of the Government of India, it does provide a framework for action to progress blue economy opportunities.

The paper notes that development of the blue economy depends on the evolution of the established sectors to embrace a low-waste, low-carbon future alongside emerging sectors and ocean-based industries and activities (see Table 4).

Table 4. India's blue economy: overview of established and emerging sectors

Established sectors	Emerging sectors
• Fisheries • Shipping • Port and maritime logistics • Marine coastal tourism and leisure • Conventional minerals exploration and production • Marine construction activities	• Renewable ocean energy (offshore wind, tidal and wave energy and biofuels) • Seabed mining for metals and minerals • Marine aquaculture • Marine biotechnology • Ocean monitoring, control and surveillance, and education and research

The Task Force responsible for the development of India's Blue Economy Vision 2025 recommends that India Inc needs to give priority to the following sectors:

- Fisheries and aquaculture
- Seaport and shipping (including port development)
- Tourism (including island development for tourism)
- Renewable ocean energy
- Mining (offshore hydrocarbons and seabed minerals).

The paper notes that determined efforts have to be made in terms of planning, investment, and sectoral allocation to ensure the growth of India's blue economy. It recommends that ***"priority areas for different sectors of the Blue Economy should be identified, based on the potential and feasibility of the Blue Economy in India.*** (FICCI 2017)" This includes reviewing business opportunities and constraints in India and a suggested high-level methodology for the blue economy assessment.

Currently, the focus is on leveraging the NCM platform to develop state-level integrated coastal management plans and execute 'no-regret' coastal investments in states where such plans already exist. Continuing to build institutional and technical capacity at federal and state levels is also a focus and is being done with World Bank support.

1.2.3 Indonesia

The development strategy and foreign policy objective for Indonesia is to become a "global maritime axis" at the crossroads of the Indian and Pacific Oceans by focusing on maritime security, connectivity and commerce, and conservation through better management. Indonesia is a Member State of the Indian Ocean Rim Association (IORA) and signatory of the 2018 Jakarta declaration (IORA 2017) which commits to the development of IORA's blue economy for priority sectors, including: fisheries and aquaculture; renewable ocean energy; seaports and shipping; offshore hydrocarbons and seabed minerals; deep sea mining, marine tourism; and marine biotechnology, ocean observation, research and development. Currently, the marine economy contributes 6.4 percent towards Indonesia's GDP and aims to rise to 12 percent by 2045.

Indonesia's blue economy policy is focused on growth in the ocean economy to lift the country into the upper middle-income bracket, based on four main objectives:

- Strengthening sovereignty over the country's waters and resolving maritime border disputes
- Sustainably managing the natural resources and protecting the marine environment, notably by stepping up efforts to both combat illegal capture fishing and to expand aquaculture development, exponentially growing public revenues from the sector by 2019
- Increasing tourism (doubling visitors by 2019) by building marinas along yacht routes, for example
- Building science and research capacity for a blue economy, for example, through construction of three marine science-techno parks by 2019 (Salim 2014).

To achieve these objectives, the country is using integrated sea use management and marine spatial planning as delivery platforms. To date, the country has made good progress in the development of marine spatial planning, and 21 provinces out of 34 had completed and passed into regulation the MSP.

In addition, Indonesia is setting up blue economy demonstration zones in Lombok and Anamabs islands and Tomini bay for visitors to explore the blue economy model, with features on the marine industry, fishery, seaside tourism industries, small island collective, regional and bay development (Wenhai, L. et al. 2019). This involves support from a 20-year engagement by the World Bank and the Coral Reef Rehabilitation and Management Program (COREMAP). Furthermore, a project is also underway to strengthen the institutional capacity for monitoring and research in coastal ecosystems to produce evidence-based resource management information.[18]

Some of the challenges that Indonesia is facing in pursuing blue economy include illegal, unreported and unregulated (IUU) fishing, piracy, and waste/marine debris. The efforts focused specifically on the blue economy are still fairly new.

1.2.4 The European Blue Growth Agenda: measurement and programmatic investment

The EU-wide Blue Growth Agenda was initiated in 2012 and the Blue Economy Innovation Plan, which guides the region's blue economy agenda, was launched in 2014 with a three-prong approach for implementation. First is the focus on areas that have high potential for sustainable growth and jobs in specific sectors:

- Aquaculture
- Maritime, coastal and cruise tourism
- Marine biotechnology
- Marine mineral resources
- Blue energy.

These sectors have been identified in the 2012 blue growth study that was undertaken with the goal to estimate the current size (value-add and employment), recent growth, and future potential of the maritime economy in the EU.[19]

To further the sector focus, the strategy includes three essential components to provide knowledge, legal certainty and security in the blue economy:

- Marine knowledge to improve access to information about the sea
- Maritime spatial planning to ensure efficient and sustainable management of activities at sea
- Integrated maritime surveillance to give authorities a better picture of what is happening at sea

18 For more details on the project, see: https://www.worldbank.org/en/news/loans-credits/2017/06/16/indonesia-coral-reef-rehabilitation-and-management-program-coral-triangle-initiative-coremap-cti-restructuring.

19 For details on the methodology to estimate the size of blue economy, go to: https://webgate.ec.europa.eu/maritimeforum/system/files/Blue%20Growth%20Final%20Report%20130920l2.pdf

Lastly, to give effect to the strategy, sea basin strategies were developed to ensure tailor-made measures and to foster cooperation between countries. The onus of the EU approach is on innovation, knowledge and technology – and the marine spatial plans for sea basins ensure that the ecosystem-based management is built in.

The legal framework for implementation is provided by the EU's Marine Strategy Framework Directive, which has been in force since 2008. It requires Member States to set up national marine strategies to achieve, or maintain where it exists, 'good environmental status' by 2020 (EU 2020). The policy framework was further enhanced with the development of the Directive on a framework for maritime spatial planning and integrated coastal management.

The EU assists the implementation at the Member State level with strategic guidance as well as through monitoring and reporting on the blue growth progress through the annual EU Blue Growth report and an online indicators dashboard for the sectors established in the blue growth report.[20] There is significant investment available both at the EU and selected country levels, and currently the alignment under the Green Deal is being considered (EU 2020).

1.2.5 South Korea

South Korea has had an ocean strategy since 2002, known as Ocean Korea 21 (OK 21). The strategy's recent objectives were to increase the contribution of the ocean sector to the national GDP from 7 percent (approximately USD 33 billion) in 2005 to 10 percent by 2016. The 10-year operational plan for the OK 21 covered most of the commitments on oceans and coasts under the World Summit on Sustainable Development (WSSD) and the Sustainable Development Strategy for the Seas of East Asia (SDS-SEA).

According to PEMSEA, the integration of land and ocean management programs in 2008 created the Ministry of Land, Transport and Maritime Affairs, and enabled improved implementation of integrated land and ocean policies. This led to the revision of the Coastal Zone Management Act in 2009, which now includes a coastal zoning scheme. Almost all coastal-located local governments have developed and are currently implementing their coastal management plans.

To stop the decline of the marine ecosystem and to ensure that blue growth is not jeopardized, the country has been working towards a Master Plan for Marine Space to serve as the Government's highest-level plan for marine space management, providing a framework for building an integrated marine space management system. A marine spatial management plan was initiated in 2018 and expected to be completed in 2022.

Government priorities and resources, conflicts in marine spaces and sector trade-offs, and sustainable use of marine spaces are all being considered in the establishment of the marine spatial plan. The main components of the Marine Spatial Planning System will include (PEMSEA n.d.):

- Coastal zoning system
- Marine spatial assessment
- Marine space suitability consultation

20 Blue indicators dashboard is accessible at: https://blueindicators.ec.europa.eu/access-online-dashboard_en

- Research and technology development
- Oceans and fisheries platform
- Participatory and cooperative governance.

Science and technology, and private sector involvement play a prominent role in the ocean economy initiatives. Provinces provide input into the development of the Master Plan and are responsible for implementation.

The experience with green growth strategy implementation provides meaningful insights in relation to the ocean policy and MSP implementation, and potentially add value if integration is sought (due to the focus on climate adaptation and low-carbon transition in green growth).

1.2.6 United States

The United States has had a long-term focus on ocean policy and economic development of ocean resources. The focus on ocean economy is informed by the experience with ocean economics and the governance and management of ocean observing systems, monitoring, and data management systems. In 2010, the country established the National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes (NOP), which required the government to consider the entire ecosystem when making decisions regarding ocean management. NOP established the requirement for marine planning as a science-based tool that regions can use to address specific ocean management challenges and advance their economic development and conservation objectives. Because of the federalist model of government, regional governance approaches have emerged to address existing and upcoming challenges to ocean health. There is recognition that regional approaches foster cooperation among the States, avoidance of conflicts in managing shared resources, and efficiency in regulatory processes.

The first complete economic assessment of the value of America's marine economy, including goods and services, was completed in 2020 and showed that marine economy contributed about USD 373 billion to the nation's gross domestic product in 2018 and grew faster than the country's economy as a whole (BEA n.d.).

Currently, a national policy framework, ***The Ocean Climate Action Plan (OCAP)—A Blue New Deal***, is being championed by scientists and policy experts with the aim to:

- Use ocean and coastal resources to reduce greenhouse gas emissions and draw atmospheric carbon dioxide (CO2) down to safer levels
- Enable coastal communities to more effectively and equitably adapt to climate impacts

This proposed policy framework addresses four issue areas:

- Coastal adaptation and financing
- Clean ocean energy
- Ports, shipping, and the maritime sector
- Sustainable fisheries, aquaculture, and marine biodiversity conservation.

1.3 Importance of data

It is self-evident that a robust blue economy development framework requires reliable and up-to-date data and analysis. Without these, it is not possible to have evidence-based decision-making for optimal growth of the blue economy. Data are needed on the stock and flow of assets in the marine/coastal space. Data are also important to how public expenditures are currently used to address issues relevant to the oversight of oceanic, marine, and coastal (OMC) resources, environmental degradation, and a country's development aspirations driven by economic sectors dependent on these "blue" resources and environments. A better understanding of public expenditures can help adjust these expenditures to help generate sustainability. Along with the analysis of natural capital, a public expenditure review is a set of analytical works that will inform the impact of current efforts according to various metrics. There are a host of tools that can be used to compile information on natural assets and public expenditures.

1.3.1 Natural capital and ocean accounting

Natural capital accounting is a tool used for more explicitly recognizing a natural asset in the system of economic accounts and for measuring changes in the natural assets on which people and economies depend. The marine natural capital is the ocean's stock of natural assets, which include living and non-living resources. From this natural capital flows a variety of marine ecosystem services – the benefits that people obtain from marine ecosystems. Ecosystems can provide a higher amount of services, and therefore better support human well-being, when they are healthy, thus also providing more benefits for more people.

The United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) has led experimental work for the development of Ocean Accounts under the international statistical standard System of Environmental-Economic Accounting (SEEA). Natural capital/ocean accounting is seen as a valuable tool to establish the evidence and measure the progress towards blue economy, noting that:

Application of natural capital analysis and accounting in the marine environment is an area of learning and exploration, and tools and methods are still emerging.

- A blue paper was just published by the High-Level Panel for a Sustainable Ocean Economy on ***National Accounting for the Ocean and Ocean Economy,*** about the opportunity for incorporating ocean accounts into national accounting frameworks and the data and technology already available for this.
- By using natural capital accounting, a country can create a snapshot of the ocean economy's contribution to its national economy. An overview of the interaction between ecosystem services and the blue economy is included in Annex A. Overview of the interaction between ecosystem services and the blue economy
- Current thinking and practice continue to be informed by land-based approaches, while recognizing the limitations and gaps in data due to the highly dynamic nature of marine species and ecosystems.

A range of countries have committed to producing ocean accounts and developing their knowledge and ability to make effective decisions about the use of oceans to progress the 2030 Agenda for the SDGs. Ocean accounting is also instrumental for the development of MSP and guidance is available showing how ocean accounts provide and meet the data needs of MSP.

Natural capital accounting at EU level

Because natural capital is a critical dimension of the growth and innovation agenda for the EU, the Knowledge and Innovation Project on an Integrated system for Natural Capital and ecosystem services Accounting (KIP INCA)[21] was established. The goal of the project is to design and implement an integrated accounting system for ecosystems and their services in the EU by testing and further developing the technical recommendations provided by the SEEA–Experimental Ecosystem Accounting (SEEA-EEA). KIP INCA builds on the EU initiative on Mapping and Assessment of Ecosystems and Services (MAES), an initiative which coordinates and oversees the ecosystems knowledge base, including condition, service provision capacity, biodiversity and the pressures to which they are exposed (Maes et al. 2018). KIP INCA supports the second phase of MAES, which focuses on the valuation of ecosystem services and their integration into accounting and reporting systems (La Notte et al. 2017).

1.3.2 Public expenditure review

Public expenditure reviews (PER) are widely used to improve public spending to achieve a government's sectoral objectives. Similarly, a blue economy PER could help identify and quantify:

The level of public expenditure being made to achieve the objectives of the blue economy

Whether the expenditures are ensuring positive impacts and avoiding negative externalities to OMC sectors. It is important to consider the adverse effects of investments on coastal/marine areas and ecosystems when determining whether they are socially justified.

The impacts of public expenditure (for example, explicit or implicit subsidies) on blue natural capital and externalities to OMC sectors (for example, construction of some kinds of infrastructure, transport, agriculture, etc.).

Missed opportunities to generate public revenue from beneficiaries of blue natural capital (fees/taxes).

The public expenditure review should provide answers to the following questions:

1. How much does the government spend and on what?
2. Relative to the government's policies and goals and sector needs, how much is spent now (adequacy), and what can be afforded in the medium and long term (sustainability)?
3. Are public resources being used efficiently and effectively?
4. Is the public financial management system set up to enhance financial accountability?
5. Does public spending promote equity?

Unlike sectoral PERs, blue economy PERs are not limited to sectoral or ministerial lines. It, therefore, is imperative to conduct the PER with a clearly established focus for the analysis and the objectives of the PER.

21 Set up by the European Commission (including Directorate-General for Environment, Directorate-General for Research and Innovation, JRC and Eurostat) and the European Environment Agency.

Key insights and observations from international examples:

- Blue economy is applied as a macro approach that is underpinned by specific strategic policies and frameworks to drive execution, for example, climate mitigation or investment in science and innovation (EU, Indonesia, South Korea).
- Information on the size of the marine economy and opportunities for growth and risk exposure underpin strategic frameworks for blue economy. Such evidence is key for determining growth targets and environmental and social indicators. Public revenue, GDP, employment and natural capital metrics are examples of indicators used to measure size and trends of a blue economy.

Measurement and valuation

- Valuation of ecosystem benefits (both market and non-market) using ecosystem accounts or ocean accounts to more accurately articulate the role and importance of natural assets for blue economy is also applied and increasingly critical to the investment agenda (Australia, EU).
- Clear idea of public expenditure and identification of opportunities for improving expenditure efficiency are also critical elements for identifying where to mobilize private financing and for building a sustainable blue economy.

MSP as platform for blue economy

- A form of ICM or MSP is applied by all countries to guide implementation and resolve conflicts in blue economy sectors. ICM is especially relevant when marine economy is defined more broadly (includes coastal economies).
- Lack of resources for MSP implementation can pose a risk to effective implementation and capturing of benefits from blue economy.
- The 'blue' aspect of the blue economy requires careful consideration to understand effects of economic activities on ecosystems. Gas and seabed mining are increasingly perceived as untenable blue economy opportunities.

Multi-sectoral approaches

- Most countries focus on sectors and industries in order to quantify the marine economy, assess potential and set targets for growth (EU, Australia).
- In this approach, two aspects seem very important:
    - Integration of environmental and social considerations (negative screening)
    - Recognition that the individual sectors of the blue economy are interdependent and often rely on common skills and shared infrastructure (ports, electricity distribution, roading).

- Inter-sectoral collaborations and solutions are starting to emerge and are expected to drive solutions and significant investment in the industry. For example, Australia's joint government–science–industry collaboration, the Blue Economy Cooperative Research Centre, is delivering industry-focused research into integrated seafood and renewable energy production systems.

Capacity for science-based solutions and management

- Science, technology and innovation has a prominent role in all blue economy approaches (EU, Australia, South Korea).
- Successful implementation in blue economy depends on good science and marine observation systems to support MSP, data management and analysis through technological innovations at sectoral and inter-sectoral levels. For Australia, science appears to drive the momentum for a stronger and more innovative blue economy agenda.
- Complex marine observation systems are being put in place for ecosystem monitoring and management – and some of the development partners support such investments (India, Indonesia, EU, Australia).
- The relationships between science, government and the private sector are increasingly complex, with innovative partnership and collaborations emerging in the blue economy space, including:
    - Shared investments and risks (Australia, EU, South Korea); and
    - Prototyping solutions.

1.4 Recommendations for Vietnam

Vietnam is advanced in its formulation of the Marine Strategy. The existing Resolution 36 is comprehensive and establishes an all-encompassing framework for the pursuit of blue economy that involves key economic sectors (natural resources, transport, tourism and recreation, energy, coastal protection and marine ecosystem restoration). The strategy indicates alignment to the principle of sustainable development and integrated management (coastal to sea), recognizing the strong connections between marine sectors and marine and coastal ecosystems as part of a broader economic system. Resolution 36 also emphasizes the need for climate solutions and resilience to sea level rise and extreme weather events, providing a strong emphasis on resilient blue economy solutions. Lastly, it outlines the need for equity and inclusiveness in mobilizing and sharing resources. The strategy recognizes the importance of international coordination in the regional context, but also with a view to access to knowledge and resources.

As mentioned earlier in this report, Vietnam has also taken steps to facilitate inter-sectoral coordination, use current tools (e.g., MSP and ocean accounts), and foster mobilization of additional financing. These are critical steps in preparing for implementation.

Box 1: Piloting of ocean accounts in Vietnam

Ocean accounting has been applied in the northern province of Quang Ninh using SEEA-EEA, focusing on pollution, ecosystems and tourism accounts. The province's major issues are water pollution due to wastewater and coal mining activities, urban and industrial solid waste, air pollution due to thermal power and cement plants, and forest degradation and reduction of biodiversity. Data on land-sea pollution flows, ecosystem types and condition are taken from detailed maps (which reinforces the integrative value of MSP). Ecosystem mapping demonstrated 80–100 percent loss of identified sea grass areas, 25 percent mangrove reduction, and 70 percent loss in extent of coral. The impacts were driven by aquaculture, the use of toxic chemicals for fishing, sedimentation from flash flooding, and land-use conversion by industry. Major challenges in ocean accounting in Quang Ninh include dealing with multiple data sources and agencies, and capacity regarding geographic information systems/technology.

The following high-level recommendations are put forward for consideration as Vietnam advances with the implementation of its Marine Strategy (more specific recommendations are presented in the subsequent chapters):

Increase awareness about the importance of and opportunities from blue economy

- Raise awareness and educate stakeholders (government agencies, private sector, community and youth organizations) at national, regional and provincial levels about blue economy opportunities, especially in the context of the Marine Strategy. This includes:
  - Outlining the areas of potential in current and emerging blue economy sectors to generate jobs and revenue, reduce risks and pressure on marine ecosystems, and adapt to climate change.
  - Establishing a consistent definition for the marine economy and estimating the value of this economy, using statistics for valuing Vietnam's sea-based economic activities and the critical marine ecosystems services on which they depend (like Australia, EU or US). This should include estimates at sectoral and coastal provinces level.
  - Presenting information on how the marine environment is currently being used, the needs of different activities today and in the future, and what new technologies are emerging.
  - Presenting information on the (market and non-market) benefits and opportunities of transitioning to a blue economy in existing and emerging sectors.
- Articulate the importance of blue economy at regional and provincial levels by guiding the process of subnational planning to align with the central planning processes. Refer to the chapters on **Marine Spatial Planning**, **Capacity Building** and **Resource Mobilization** for further insights and suggestions. In the short term, this should include engaging with provinces and regions to increase awareness about blue economy and to identify "quick-wins" opportunities that will help drive project identification and investment mobilization.

- Create platforms for dialogue and decision-making on how to reconcile economic growth and resilience, for example, how to augment the area for renewable energy without compromising fisheries habitat or increasing risk to extreme weather events.
- Consider the development of a dedicated blue economy information portal to act as a platform for data repository, networking, and knowledge and skills sharing (like US, Australia, India and other countries).

Generate and use evidence in decision-making

- Develop ocean accounting as a management framework for the marine economy and the underlying natural capital assets – thus making the linkage between economic output and the status of ecosystems.[22] This would also assist with MSP development and measuring Vietnam's progress towards the 2030 Agenda for Sustainable Development.
- Enhance the practice and use of risk-adjusted economic analysis and valuation of marine ecosystems and their services to articulate blue opportunities in decision-making (like Australia, EU or US).
- Identify appropriate indicators for the blue economy to measure changes and trends. These indicators should be drawn from an assessment of the blue economy and be set up as a dashboard of indicators that measure changes and trends and provide estimates at the sectoral and coastal provinces levels.

Mainstream and integrate blue economy thinking into economic development

- Strengthen the institutional framework for the implementation of Marine Strategy by confirming the government's role and ensuring coordination of relevant agencies and sectors at different level of government (national, regional, provincial and local) with a view to policy development, regulatory enforcement and investment (see Chapter 3 on **Inter-agency Coordination** for more detailed information).
- Align and integrate relevant Marine Strategy objectives and specific targets into key government policy documents and international commitments – e.g., planning documents and National Action Plan on Climate Change (as was done in India). Targets from the Marine Strategy that can be integrated into such documents include:
    - Environmental: marine and coastal conservation zones area are increased to over 6 percent; coastal mangroves are restored to at least the area from the year 2000[23]
    - Economic and social: coastal provinces will make up 65-70 percent of GDP from 20.8 percent currently and per capita income will be 1.2 higher than the national average; sea-based industries will deliver 10 percent of national GDP.

22 Guidance on preparation of ocean accounts under the UN SEEA has been recently launched. The Global Ocean Accounts Partnership was established with the purpose to coordinate and support countries and organizations interested in ensuring that the values and benefits of oceans are recognized and accounted for in decision-making about social and economic development. More details are available at: ww.oceanaccounts.org

23 The actual area size is not identified in the Marine Strategy, but it could be through the MSP process.

- Develop guidance for high-level prioritization of blue economy opportunities (preferably as part of, or in synergy with, ICZM and/or MSP processes), following a multi-criteria approach (financial, social, environmental and cultural). An indicative example is provided in **Annex B**.
- Identify and target opportunities that are relevant in the provincial context, recognizing the importance of specific sectors in the provincial economy and the need for "quick wins". The goal is to generate commitment and drive project identification and investment mobilization – either within a specific sector and intra-sectoral (like aquaculture and ocean renewable energy in Australia).
- Reflect on the lessons (both positive and negative) from the implementation of green growth strategy to enable more effective implementation and mainstreaming of blue economy (like South Korea) – including in relation to mobilizing investments.
- Anticipate and respond to the impacts of climate change on the marine environment.

Strengthen engagement with the private sector

- Engagement of the private sector (including investment and finance) is critical for the orientation, planning and implementation of blue economy. Refer to the chapters on **Marine Spatial Planning**, **Capacity Building** and **Resource Mobilization** for further insights and suggestions linked to the proposed establishment of the Vietnam Blue Economy Platform as one of the pathways for strengthening private sector engagement.
- Provide clear ideas for implementation and develop investment opportunities for the private sector, i.e., progress from planning to execution.

Leverage and expand science support for blue economy

- Leverage science needs and opportunities to strengthen engagement with the private sector as well as international partners. The UN Decade of Ocean Science provides a strong platform for coordination and support from partner countries (like Australia or New Zealand) where science is focused on blue economy solutions and insights.

1.4.1 Blue economy and COVID-19 recovery

The impact on the marine economy globally from the COVID-19 pandemic is significant and ongoing. Countries that are reliant on marine industries like fisheries, shipping or tourism are facing significant challenges and have a task of seeking short-term relief while considering long-term solutions. It is estimated that maritime shipping has dropped in activity by up to 30 percent in some regions (Sharpe 2020) and fishing activity has decreased by as much as 80 percent in China and West Africa (Korten 2020). The impact on tourism globally may lead to a 20-30 percent decline in tourist arrivals and the International Air Transport Association (IATA) reported an 80 percent fall in flights worldwide. The World Travel & Tourism Council (WTTC) calculates that up

to 75 million jobs in tourism and travel are currently at risk, with over USD 2 trillion in potential GDP loss (UNWTO 2020).

To counter the economic and social impact, many countries have initiated recovery packages and green transitions, which mean blue to green ideas are being encouraged. According to the United Nations Conference on Trade and Development (UNCTAD), the pandemic offers the opportunity to shift resources allocated to boost capacity in sectors like fisheries or maritime transport towards policy instruments that encourage ecosystem restoration (work towards the marine protected areas target of 30 percent globally) or improve sustainability, traceability and digitalization in the sector. In tourism, recovery funds for furloughs could be re-oriented towards hiring people to restore coastal ecosystems, or execute sustainability upgrades in tourism.[24] Because of the significant greenhouse gas (GHG) emissions of the shipping industry, a focus on investments to accelerate progress towards decarbonizing shipping and electrifying ports should also be prioritized. The study ***A Sustainable and Equitable Blue Recovery to the COVID-19 Crisis***, commissioned by the High-Level Panel for a Sustainable Ocean Economy, has identified five areas for investment stimulus:

- Coastal and marine ecosystem restoration and protection
- Sewerage and wastewater infrastructure for coastal communities
- Sustainable community-led, non-fed marine aquaculture (mariculture)
- Zero-emission marine transport
- Sustainable ocean-based renewable energy.

While not directly comparable to the current crisis, a study by the University of Oxford compared green stimulus with traditional stimulus after the 2008 global financial crisis. It found that green projects create more jobs, deliver higher short-term returns per dollar spent by the government, and lead to increased long-term cost savings compared with investment in carbon-intensive infrastructure (EIU 2020). It is too early to estimate the extent to which recovery initiatives will benefit the blue economy or initiatives with a blue economy orientation will create more jobs. However, the fundamentals for driving progress towards sustainability in marine economy remain unchanged: the need to combat climate change and sustainably feed a growing population (The Economist 2020).

In a post COVID-19 world, there is also the opportunity to use the ocean and ocean accounting to make progress with a new system of national statistics that is fit for purpose and accounts better for the importance of oceans to human well-being.

24 A certain level of skill may be required and the opportunity for re-orientation needs to be considered on a case-by-case basis.

CHAPTER II.

Effectively using marine spatial planning

Photo: Ca Dao - shutterstock.com

2.1 Rationale for using marine spatial planning

Marine spatial planning (MSP) is one of the key processes and policy instruments that that can assist in developing and operationalizing the concept of the blue economy. It is also a requirement in the implementation of the Marine Strategy. MSP and the wider integrated coastal zone management (ICZM) are processes aimed at prioritization and allocation of coastal and marine resource and how to facilitate the optimal use of these resources in space and time to achieve desired outcomes.

Effective development and implementation of MSP can produce a variety of environmental, social, and economic benefits. At the economic level, one of the major benefits of MSP is increasing the certainty for private sector investments as well as the transparency in permitting and licensing procedures. This was the case in Belgium where the Consultative Commission on MSP – which included representatives of each public administration with competence at sea – gave advice for applications of the use of zones for commercial and industrial activities. In the context of renewable energy, this process resulted in the decision that the Minister for North Sea and the Minister for Energy would develop a competitive procedure for tendering the new zones for renewable energy, and that the Minister for North Sea would coordinate the procedure for determining the space allocated for the transmission of electricity. MSP and ICZM play a key role in the blue economy: allocation from MSP and ICZM can be leveraged to inform a blue economy assessment used to attract investment to pursue economic development and sustainable initiatives (Figure 2)

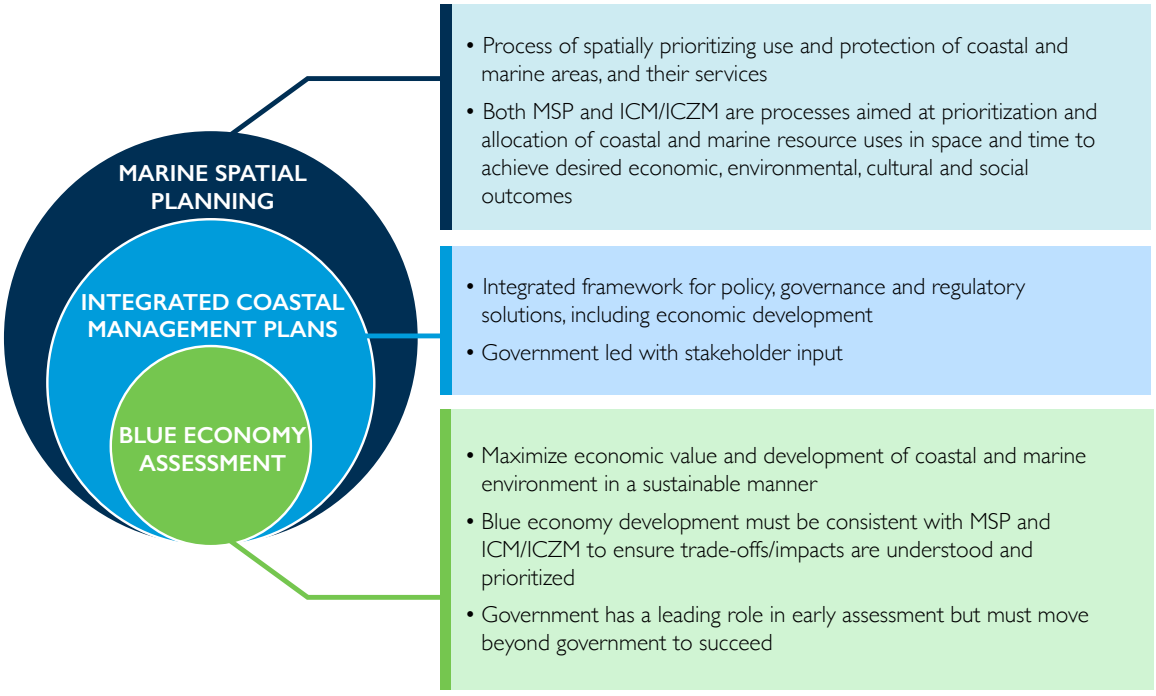

Figure 2. Differences and alignment between MSP, ICM/ICZM and Blue Economy Assessment

MSP is a public process that helps to achieve the objectives that are specified through political processes. As a process, it helps to plan and manage human activities in the marine space, as marine ecosystems or components of the ecosystem cannot be planned. MSP promotes an efficient use of marine space, as well as the reduction of cumulative negative human impacts, thereby contributing to preserving marine ecosystem services while generating development benefits.

MSP also contributes to the allocation of space for marine conservation outcomes, such as marine protected areas (MPAs), which in turn generate economic and social benefits (such as improved fish stocks and tourism). At the social level, MSP can improve opportunities for public and stakeholder engagement in ocean use management, and enable the protection of cultural, social and recreational values. The Marine Strategy requires the expeditious development of national maritime space planning, and overall planning on the exploitation and sustainable use of coastal resources. In Vietnam, the 2017 Law of Planning[25] includes a requirement for national marine spatial planning, and has defined the National Maritime Spatial Plan as a National Master Plan. See Annex C for further details regarding the ICZM/MSP planning landscape in Vietnam and elements of the Marine Strategy relevant to MSP.

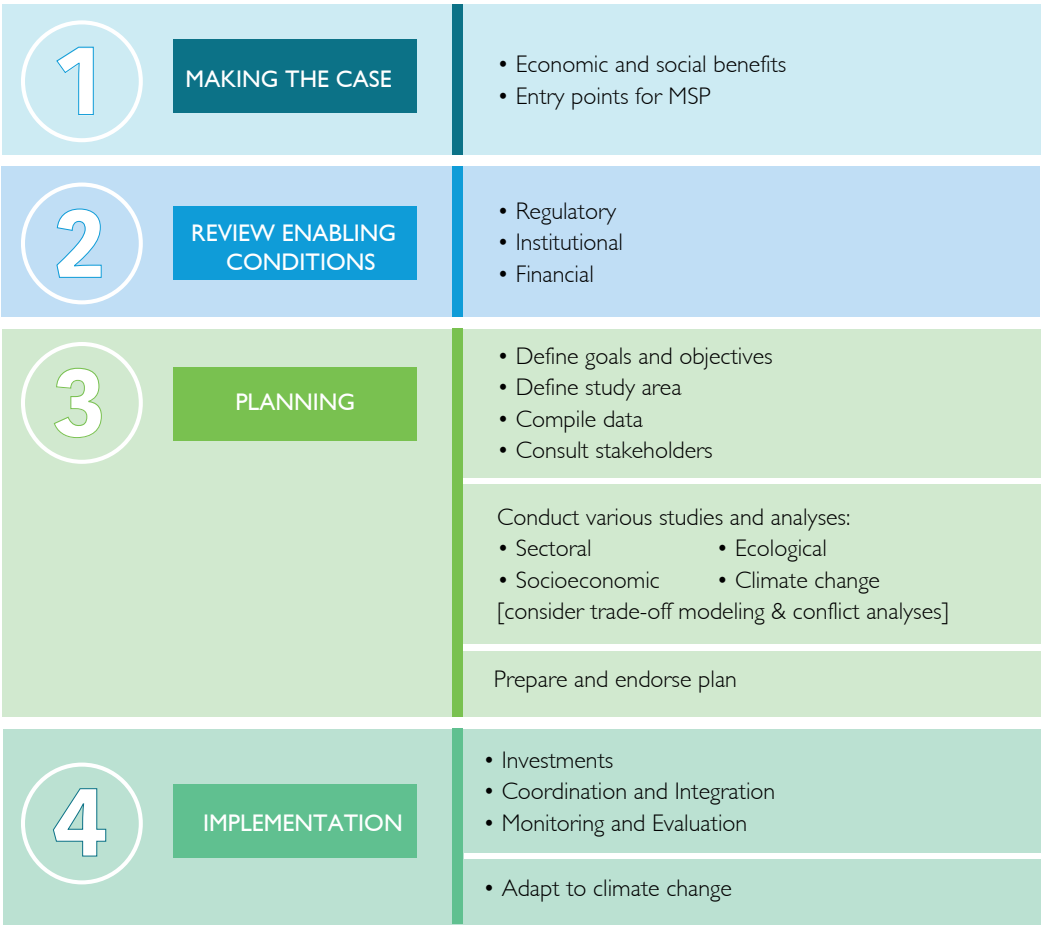

Figure 3. Key steps in MSP Process

25 Law No. 21/2017/QH14 dated November 24, 2017, passed by the National Assembly of the Socialist Republic of Vietnam.

International experience points to the importance of conducting various steps in an MSP process (see Figure 3.) Following such steps, and keeping the importance of implementation in mind while conducting the planning. can help ensure the MSP is operational. International experience also confirms that an effective MSP is integrated across sectors, agencies and levels of government, ecosystem-based (i.e., balancing the ecological, economic and social objectives towards sustainable development), place-based or area-based, adaptive (adjusted as there is learning from experience), strategic and focused on the long term, and participatory (Ehler and Douvere 2009).

There are several widely used guides for MSP. The purpose of this section is to underscore some key aspects of MSP and share international experiences regarding these.

2.2 The importance of integration in marine spatial planning

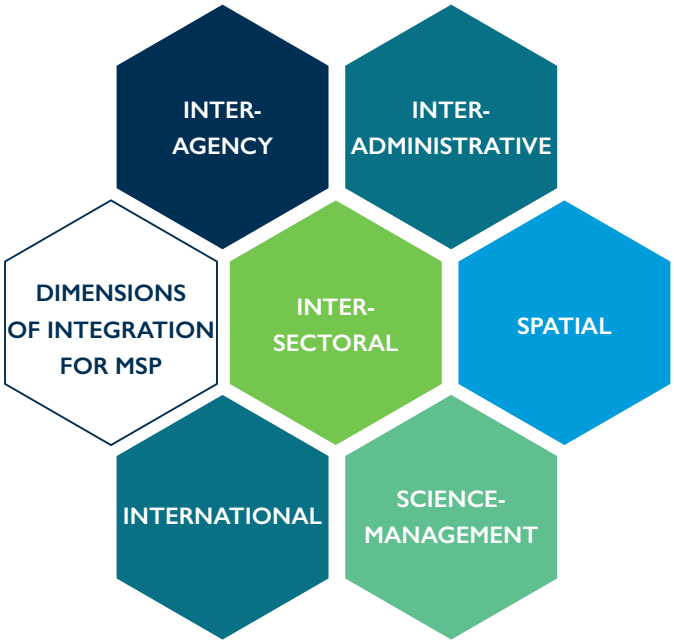

Figure 4. High-level dimensions of integration required for successful MSP

Integration is crucial for MSP, which requires a holistic rather than sectoral focus. A selection of country case studies are described below to illustrate the approach for some of the key dimensions of integration for MSP (Figure 4). These integration dimensions are discussed below, except for inter-agency integration, which is addressed in the chapter on Inter-agency Coordination.

2.2.1 Inter-sectoral integration

Stakeholder participation and MSP

MSP planning can help alleviate stakeholder conflicts, turning an otherwise zero-sum game into one that can mutually benefit all groups. Involving stakeholders in the planning and the decision-making process should, therefore, be facilitated and embedded into institutional processes. While

ensuring proper stakeholder participation may be time consuming, it reduces transaction costs at later stages in the process, especially during implementation and encourages compliance among stakeholders with the MSP (Birnbaum 2016). It also broadens the knowledge basis of the MSP by raising awareness and empowering stakeholders, as well as ensuring the planning process draws on local experiences and contextual insights (Birnbaum 2016).

Mid-Atlantic Ocean Action Plan: United States case study

The Mid-Atlantic States regional planning experience provides a useful comparison to the Vietnamese context. The Mid-Atlantic ocean coastal region, covering the states of New York, New Jersey, Delaware, Maryland and Virginia, is fundamental to the U.S economy, generating USD 2 trillion or 14 percent of US gross domestic product annually (MARCO n.d.), and is home to over 34 million people. Like Vietnam, this stretch of coastal states has a well-established marine economy with significant revenue derived from a range of activities, including: commercial fishing, transportation, renewable energy production, telecommunications, science and research, and tourism. This coastline also supports many recreational interests (e.g., fishing) and cultural activities (e.g., involving indigenous Shinnecock Nation communities) and is used extensively for maritime defense purposes.

Joint planning among these states, to maintain and enhance the health of the ocean and to support sustainable use of the ocean, has taken place following an MSP process, within the framework of the 2010 National Ocean Policy. This involved engagement and collaboration between state, tribal, and federal governments along with stakeholders, led by the Mid-Atlantic Regional Planning Body.[26,27] The outputs of the regional planning process are the Mid-Atlantic Regional Ocean Planning Framework and the Mid-Atlantic Ocean Action Plan. The Plan is the result of over three years of collaborative planning to address complex ocean management challenges and advance the two goals of the Mid-Atlantic Regional Planning Body (RPB):

- Promote ocean ecosystem health, functionality, and integrity through conservation, protection, enhancement, and restoration.
- Plan and provide for existing and emerging ocean economic uses in a sustainable manner that minimizes conflict, improves effectiveness and regulatory predictability, and supports economic growth.

The Plan is designed around a framework that enables adaptive management, which accounts for changing information, ecological and socioeconomic contexts, and other dynamics. As a result:

- Minor changes and updates to its portal and planning documents are made on an ongoing basis. RPB is currently developing a Performance Monitoring and Evaluation (PME) plan which, in the future, will provide structure around the way the Plan is managed/adjusted.
- The Plan provides tools, information, and processes that enhance the capacity of federal, state, and indigenous (tribal) entities and the Mid-Atlantic Fishery Management Council (MAFMC) to carry out

26 See: http://www.boem.gov/Environmental-Stewardship/Mid-Atlantic-Regional-Planning-Body/index.aspx for detailed membership information of the Mid-Atlantic Regional Planning Body.
27 This process built on the earlier initiatives of the Mid-Atlantic Regional Council on the Ocean, a voluntary partnership forged among the five State Governors in 2009 in collaboration with federal agencies, tribes, local governments, and other stakeholders.

their missions, work together more effectively, and serve the needs of stakeholders in the region.

- The Plan does not change existing authorities or create new mandates at the federal, state or tribal levels. Rather, actions within the Plan (e.g., data and information coordination plan; federal-tribal coordination plan; actions to foster sustainable ocean uses, etc.) aim to improve the effectiveness of federal, state, tribal, and MAFMC implementation of their respective responsibilities in the Mid-Atlantic region's waters (BOEM 2016).
- To support data management for the Plan, the Mid-Atlantic Data Portal was established and is fundamental to implementation. As part of the planning process, the Mid-Atlantic Regional Ocean Assessment was carried out, collating and summarizing the best available information on the ocean ecosystem and ocean uses (e.g., commercial fishing, transportation, renewable energy production, tourism, etc.).

National Marine Plan: Scotland case study

The National Marine Plan (NMP) for Scotland was finalized in March 2015, setting national objectives for managing Scotland's seas. The plan has a three-yearly review and follows the high-level policy context and common vision of the United Kingdom (UK) Administration as set out in the UK Marine Policy Statement. It provides the broad aim of having "clean, healthy, safe, productive, and biologically diverse oceans and seas" (Marine Scotland 2015).[28]

The NMP is to be implemented at a regional level through twelve Scottish Marine Regions (SMRs). Within each SMR Scottish Ministers have the right – but not the duty – under the Marine (Scotland) Act 2010 to appoint a delegated group (Marine Planning Partnerships [MPP]), made up of members who bring relevant expertise, skills and knowledge of marine planning in the region (Hull 2013). These groups are responsible for drafting local marine plans based on regional needs, pressures and opportunities. The MPPs are the principal mechanism for stakeholder engagement in Scottish MSP.

Marine Scotland is mandated to release a Statement of Public Participation (SPP), outlining how stakeholder and public engagement and cross-boundary collaboration are ensured. According to the SPP, "Marine Scotland, and the Scottish Government as a whole, is committed to:

- Involving all relevant stakeholders and members of the public in the development of policies that will impact upon them
- Arrangements for participation are inclusive, clear and transparent
- Communication is provided through a range of formats and jargon free
- All representations are fully considered."[29]

The general dissemination and presentation of information to the public by Marine Scotland has been commended in this respect (Smith and Jentoft 2017). For example, in 2011, Marine Scotland published their Marine Atlas, which is "an assessment of the condition of Scotland's seas, based on scientific evidence from data and analysis, supported by expert judgment" and "provides baseline

28 Scotland's National Marine Plan is available at: https://www.gov.scot/publications/scotlands-national-marine-plan/.
29 The need for a common language and understanding across agencies, stakeholders and communities was reflected in agency interviews for this project, and also identified as a key issue in the World Bank/ VISI ICZM Situation Assessment (2019).

information from which the national marine plan will be developed (Marine Scotland 2011)." The continuously updated data is now available through the National Marine Plan interactive (NMPi).[30] Members of the public can request data be added to the interactive, via a comment function.

Despite the effectiveness of information provision to the public, the Scotland NMP has received criticism for failing to take a meaningful participatory approach:

- Objective-setting engagement via a multi-sectoral workshop process excluded local community representation. The majority of attendees at the NMP workshop held economic interests in decisions on the use of marine space, and these interests were not necessarily aligned with those of coastal communities (Marine Scotland n.d.). It was not until three years later that community engagement occurred.
- Communities gave feedback that this eventual process was not one of meaningful engagement, and that industry interests were prioritized at the expense of participatory processes.
- In terms of the substance of the plan, there were notable concerns from the community that the NMP focused too heavily "on economic uses of the environment and not enough on the marine environment, climate change or biodiversity" (Marine Scotland 2014).

Insights and observations:

- The MSP **development process** is just as important as the plan itself. Decision-making should be clear and transparent, creating realistic perceptions amongst stakeholders and the public of their role and influence. The data portal can play a key role here if it is designed and managed effectively to be useful to all key stakeholders.
- MSP is fundamentally about affecting the behavior of people and their activities relative to one another and to the environment. For MSP and ICZM to be implemented effectively, it must be **understood and supported by stakeholders**, including local communities. To achieve this, a **common language and understanding, and jargon-free communication** for local communities, is vital.
- **A framework for public participation and stakeholder input** is often developed at the outset of the planning process and the public/ wider community is included throughout the process. The participation framework defines who should be involved, when and in what fora.
- MSP should reduce conflict in the marine area by bridging gaps between the various sectors. It is important, therefore, to encourage collaboration, and information and data sharing on sustainable development of the coastal and marine areas. **MSP may assist sectors to more efficiently achieve a balance between economic, environmental and social needs** in their plans and expand the evidence base of their plans**.**
- The **social capital** (collaboration, connection and trust) built up during the planning process can deliver significant benefits during the implementation phase.

30 National Marine Plan interactive (NMPI) can be accessed at: https://marinescotland.atkinsgeospatial.com/nmpi/. For example, the September update included updates to five aquaculture data layers (accessed 15 September 2020).

2.2.2 Inter-administrative integration

MSP is reliant on integration across multiple agencies and their jurisdictions. This integration can take time and resources. Without appropriate institutional and budgetary support, such coordination can fail to occur, impacting the effectiveness of MSP.

Great Barrier Reef Marine Park: Australia case study

The Great Barrier Reef Marine Park (GBRMP) commenced in the 1980s and is known for being one of the first examples of effective MSP.

The integrated management approach taken by the GBRMP extends well outside the marine area to include all the islands, tidal areas and activities in the catchments (whereas legal jurisdiction was split landwards [Queensland state] and seawards [federal] from low water.) The integrated governance and management model consider both marine and terrestrial aspects within the adjoining state and federal jurisdictions. The value of this integrated ecosystem-based management (EBM) approach (driven by ecosystem extents and connectivity, not administrative boundaries) is now widely acknowledged (Vince and Day 2020). Most of the management approaches today in the GBRMP (e.g., addressing water quality issues) are done through partnerships with local government and industries throughout the catchment.

The application of zoning in the GBRMP, along with the range of other spatial and temporal tools that complement the underlying zoning, provide useful lessons for effective marine management elsewhere. (See Spatial Integration section below).

Sea Change Marine Spatial Plan: New Zealand case study

Marine and coastal planning within New Zealand's territorial sea is divided between central, regional, and local government under the Resource Management Act 1991 (RMA).[31]

The coastal and marine area is principally managed by 18 regional councils (similar to provinces in the Vietnamese context) and area-based management occurs on the basis of regional political boundaries. The division of regional jurisdictional boundaries responds in part to catchment areas, recognizing the freshwater/salt-water ecosystem and the land-sea connection. The allocation of responsibility for both the terrestrial and the marine environment to regional councils therefore embodies a robust example of integrated coastal management and the RMA has been hailed as a model for ICZM legislation globally (Makgill and Rennie 2012).

Under the New Zealand Coastal Policy Statement (NZCPS), each regional council must develop a coastal plan for its region. That plan must be consistent with the national level principles and must be approved by the Minister of Conservation. Although MSP is not specifically identified as a management tool under the RMA, regional plans must nevertheless set out the objectives for the region, implementing policies and activity rules designed to achieve those objectives as well as procedures to facilitate cooperation between regional and district authorities.

31 The Resource Management Act seeks to integrate the management of air, land, fresh water and marine areas (out to the limit of New Zealand's territorial sea) into one piece of legislation and integrate management of these areas via a hierarchy of policies and plans prepared at the national, regional and district levels.

The region within which ecosystem-based planning is most advanced is the Hauraki Gulf. New Zealand's Sea Change Marine Spatial Plan for the Hauraki Gulf was an example of applying a multi-regional approach to MSP, with the plan covering the jurisdiction of two major regional councils, Auckland and Waikato. This plan is currently being considered by government for implementation.

Typically, a single agency is put in charge of the MSP planning process, with mechanisms developed to engage across government. The Sea Change project establishing a co-governance entity to represent four agencies and 26 indigenous tribal groupings during preparation of the plan. Because the entity only had a mandate to prepare the plan, the implementation stalled, and it required non-governmental organization (NGO) and public pressure to reignite.

Insights and observations:

- **Inter-administrative integration** is key to the success of MSP. It takes time and resources and must be given dedicated support (human resources, funding, mandate). Capacity building is a key element of preparedness for carrying out MSP, which should ensure that major players understand and foster integrative principles in the MSP process.
- A robust MSP development model will ensure **vertical integration and application** from central to regional to provincial levels, ensuring clear **roles and responsibilities** and appropriate **outputs/components at the different planning levels.**
- For effective, integrated management of the coastal and marine areas, it is important to be driven by **ecosystem extents, functions and connectivity**, not by administrative boundaries.
- Development of the MSP should also include **planning for implementation**, including continuity of involvement for implementation processes and development of more detailed regional/provincial plans. Resources for implementation need to be considered too.

2.2.3 Spatial integration

The use of spatial approaches and tools in MSP enables decision makers to:

- Prioritize areas for generation of new economic value that offer benefits to the environment and society.
- Use zoning for increased marine and habitat protection and co-existence of development and protection/restoration.
- Attach importance to biodiversity conservation and ecosystems restoration, especially conservation and restoration of coral reefs, sea grass beds, mangrove forests and coastal protection forests. The spatial identification of these habitats helps to realize key economic benefits, including sustaining successful tourism, fisheries, and the provision of ecosystem services.

- Recognize connectivity in space and time between natural systems and the use of those systems for economic purposes and well-being – optimizing the benefits of sustainable development and natural resource use.

Use of maps and zoning

Zoning is an MSP tool that is used in conjunction with other spatial and temporal tools, to enable adaptive management; it can be indicative or regulatory (strictly defined and enforced). It can provide an underlying framework to regulate certain uses and protect key ocean areas such as shipping corridors and coral reefs. As MSP is an iterative process, it is not necessary to have a comprehensive scientific understanding of the area to develop zoning – a basic foundation of ecological data and the use of best available information is appropriate.

United Kingdom

For example, England's East Inshore and East Offshore MSP has general policies and spatial sectoral policies referencing maps for locational guidance. Spatially explicit policies provide an indication of what activities should be avoided in specific areas. While the maps help marine users understand the best locations for their activities, future developments are guided by the priorities and policies laid out in the plan for the specific plan area (Hull 2015).

The maps provided by the East Inshore and East Offshore MSP pertain to the following data:

• Character areas, e.g., coastal waters, deep water channels, shipping waters, offshore gas fields	• Optimum sites of aquaculture potential • Recreational boating routes and areas
• Broadscale habitats, e.g., substrates including rock, mud, sand, reef	• Habitats of conservation importance, e.g., sea grass, salt marsh, mud flats, mussel beds
• MPAs, including existing special areas of conservation and recommended marine conservation zones	• Selected statutory and non-statutory management plans, e.g., coastal plans, national parks • Heritage assets
• Seabird foraging ranges	• County council and local authority areas
• Defense and national security	• Existing oil and gas activity
• Offshore windfarm areas	• Tidal stream resource areas
• Potential opportunity and infrastructure for carbon capture and storage	• IMO designated routes and important navigation routes

• Ports and shipping context	• Licensed dredging and disposal areas
• Marine aggregate areas	• Submarine telecommunication and power cables
• MMO fishing activity	• Fishing intensity
• Fishing effort	• Known fish spawning and fish nursery grounds

The maps were generated with the "best available data", and the plan encourages readers to access the associated marine planning portal to view the most recent data and revised maps.[32]

New Zealand

The approach taken in the non-statutory Sea Change plan in New Zealand did not contain "hard" zoning, but it did indicate suitable and unsuitable areas for aquaculture and prospective locations for MPAs. (See Figure 5). It also identified focus areas for catchment management efforts. The bulk of the plan consisted of objectives, strategies and actions (Peart 2018).

The "SeaSketch" marine spatial planning tool[33] was used during the various stages of development of spatial plan proposals by the multi-sectoral Stakeholder Working Group. The group used approximately "100 layers of publicly available geospatial information on current management, biodiversity values, ecosystem services, existing uses and activities, contaminants, and catchments (SeaSketch n.d.)".

Data layers were used to identify potential activity areas – for example, layers on depth, substrate and other properties were used to draw prospective areas for aquaculture development. Layers identifying coastal areas of natural character and biodiversity values were subsequently used to modify proposals to minimize the impact on biodiversity and landscape values. The development of MPA proposals was facilitated by capturing ecological knowledge on areas of high biodiversity value and modifying these according to the impact on the commercial and recreational fishing values reported by SeaSketch's analytical tools (SeaSketch n.d.).

32 The UK marine planning portal can be accessed at: https://explore-marine-plans.marineservices.org.uk. (Accessed 13 October 2020).
33 New Zealand's SeaSketch marine spatial planning tool can be accessed at: www.seasketch.org.

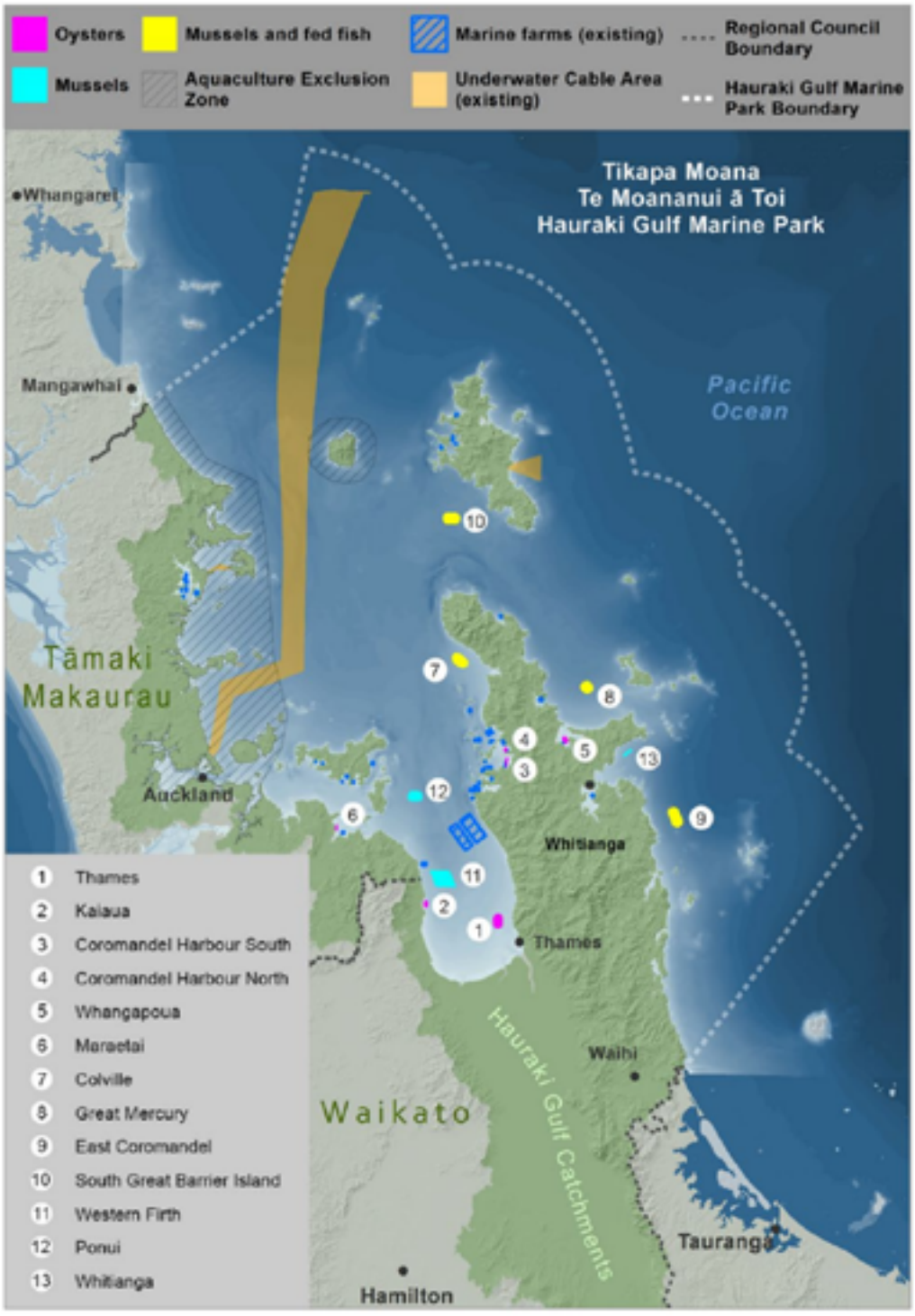

Figure 5. Hauraki Gulf Sea Change Marine Spatial Plan: existing aquaculture sites, indicative areas preferred for future aquaculture development and areas unsuitable for aquaculture

Australia

The Great Barrier Reef Marine Park is an example of "hard" ocean zoning within marine spatial planning. These zones and their objectives have been adapted over the years as a result of increasing numbers of users, new and emerging threats, better scientific information, improved technology for demarcation and surveillance, and stakeholder participation. Key components for GBRMP's ocean zoning include:

- A strong legislative basis for zoning
- A clearly defined spectrum of zones
- Explicit zone objectives (Day et al. 2019).

Some zone objectives have multiple components (e.g., to provide for both conservation and use – see Figure 6). In such cases, there needs to be a clear hierarchy within zone objectives. In addition to ecological data, information about human uses was also collated and mapped, including data on fishing, moorings and anchorages, boat ramps, shipwrecks, recreational activities and tourism use.

Photo: Quang nguyen vinh - shutterstock.com

Activities guide (See relevant Zoning Plan and Regulations for details)

	General Use Zone	Habitat Protection Zone	Conservative Park Zone	Buffer Zone	Scientific Research Zone	Marine National Park Zone	Preservation Zone	State Zoning Only	Estuarine Conservative Zone
Aquaculture	Permit	Permit	Permit	x	x	x	x		Permit
Bait netting	✓	✓	✓	x	x	x	x		✓
Boating, diving, photography	✓	✓	✓	✓	✓		x		✓
Crabbing (trapping)	✓	✓	✓	x	x	x	x		✓
Harvest fishing for aquarium fish, coral and beachworm	Permit	Permit	Permit	x	x	x	x		x
Harvest fishing for sea cucumber, trochus, tropical rock lobster	Permit	Permit	x	x	x	x	x		x
Limited collecting	✓	✓	✓	x	x	x	x		✓
Limited spearfishing (snorkel only)	✓	✓	✓	x	x	x	x		✓
Line fishing	✓	✓	✓	x	x	x	x		✓
Netting (rather than bait netting)	✓	✓	x	x	x	x	x		
Research (other than limited impact research)	Permit	Permit	Permit	Permit	Permit	Permit	Permit		Permit
Shipping (other than in a designated shipping area)	✓	Permit	Permit	Permit	Permit	Permit	Permit		Permit
Tourist programme	Permit	Permit	Permit	Permit	Permit	Permit	Permit		Permit
Traditional use of marine resources	✓	✓	✓	✓	✓	✓	x		✓
Trawling	✓	x	x	x	x	x	x		x
Trolling	✓	✓	✓	✓	x	x	x		✓

Figure 6. Great Barrier Reef Marine Park zoning

Land to sea interface

What happens on land affects the sea. These social-ecological interface impacts (such as sedimentation, eutrophication, and pollution of the ocean from the land) are exacerbating with increased development and the effects of climate change. Likewise, maritime uses can affect the coast – for example oil spills and pollution from vessels.

The EU's Maritime Spatial Planning Directive asks Member States to consider land-sea interactions (LSI) when establishing and implementing maritime spatial planning, with the aim of promoting an integrated and strategic vision for MSP that is coherent with land use planning frameworks. This approach is in alignment with other European processes, namely the ICZM recommendation, the Marine Strategy Framework Directive (MSFD), and the Water Framework Directive (WFD). The EU project "Supporting Implementation of Maritime Spatial Planning in the Northern European Atlantic" (SIMNORAT), refers to the land to sea interface as relating to:

- The natural processes across the land-sea interface
- The interactions between uses and activities in the sea and on the land, as well as their impacts on the quality or ecological dynamics of coastal and marine environments
- The governance arrangements in these interface and socio-ecological systems (Sousa et al. 2019).

Spain, Portugal, and France all take LSI into account within the MSP process.[34] The assessment conducted revealed the need for a specific LSI framework within the MSP process and its operational implementation as a critical gap for all three countries. The LSI framework included environmental, socioeconomical and governance aspects (Sousa et al. 2019). In Portugal, the law on 'marine spatial planning and management'[35] requires MSP to be coherent with coastal management, giving particular attention to the protection and recovery of coastal ecosystems. LSI was considered in the analysis and planning of the Portuguese MSP[36] as follows:

Analysis stage:

- Identification of the location/spatial and temporal distribution of: (i) land-based uses and activities that are closely related to the sea (e.g., leisure/recreation, coastal defense, pipelines and cables, harbors); as well as (ii) maritime uses and activities that require support infrastructure on land (e.g., aquaculture, shipping, renewable energy) or are closely related to land (e.g., sand extraction for coastal/beach defense).
- Analysis of existing land and maritime planning instruments and other relevant documents to identify provisions relating to/with an impact on the marine environment and human activities in the marine environment. This included the analysis of principles, regulations/guidelines, development strategies, as well as future trends and main pressures.

34 The Spanish Royal Decree of 363/2017, of April 8, established in several of its articles that LSI should be taken into account in the MSP process. In Portugal and France, LSI is considered directly in the MSP approach and through the consideration of all relevant marine and terrestrial strategic, legal and management instruments.
35 Law No. 17/2014
36 For more information on the Portuguese national marine spatial plan ("Situation Plan"), see: https://www.dgrm.mm.gov.pt/as-pem-psoem

Planning phase:

- Coastal protection buffer to safeguard coastal uses, such as small coastal fisheries and recreation from land-based threats including stormwater runoff (e.g., toxicity, nutrient, thermal impacts).
- Identification of new areas to meet the needs identified in the analysis phase, including national policies (e.g., sediment management policy, ICZM, climate change adaptation), or sectoral development/activities.

Ensuring effective trade-offs

Scientifically credible models and maps of ecosystem service production[37] are helpful within the MSP process to balance competing uses such as tourism, renewable energy, and commercial fisheries (Ruckelshaus et al. 2015). Some of the commonly used approaches for understanding and assessing trade-offs include ecosystem services prioritization and cost-benefit analysis combined with scenario planning.

Spatially explicit scenarios that compare alternative management options, coupled with ecosystem services and metrics demonstrate how proposed marine spatial plans create synergies and trade-offs among activities in space. With increasing exploitation and industrialization of the coasts and oceans, multi-objective planning using predictive modeling and trade-off analyses can help achieve best-case outcomes (Lombard et al. 2019).

Consideration of the impacts on ecosystem services was successfully used in the development of the Belize Integrated Coastal Management Plan (CZMAI 2016). Three management scenarios (habitat conservation, coastal development or "informed management") were evaluated in terms of how human impacts on coral, mangrove, and seagrass habitats of each scenario would change the potential for ecosystems to provide coastal protection, tourism and lobster fishery benefits (Arkema et al. 2015). As a result of this evaluation by teams of researchers, practitioners and stakeholders, the plan explicitly considers how coastal management can provide benefits to multiple sectors and stakeholders, given their local visions and values (Verutes et al. 2017).

It is common for MSP processes to include an assessment of the impacts of the plan. Projects should conduct formal, rigorous cost-benefit analysis for management alternatives and identify and quantify trade-offs amongst objectives, as this will improve the specificity and effectiveness of marine plan policies (Hull 2015).

37 One such example is the Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST), a suite of models used to value and map ecosystem services, enabling "decision makers to assess quantified trade-offs associated with alternative management choices and to identify areas where investment in natural capital can enhance human development and conservation". InVEST is accessible at: https://naturalcapitalproject.stanford.edu/software/invest (accessed 13 October 2020).

Insights and observations:

- Integral to MSP is the approach **of managing an area or space** rather than managing sectors, and typically, the parameters of that area or space are determined by science and an ecosystem-based approach. This enables the **integrated management of multiple activities** across sectors in the marine space, rather than the traditional siloed approach to sectoral management.
- Plans may be a mixture of **objectives, policies, specific actions and spatial delineations**.
- Hard spatial delineation of marine space for future activities is challenging, particularly where planning processes are undertaken within short timeframes and at large scale, and plans may more realistically include indicative areas, policies and actions. However**, identifying existing biodiversity, ecosystems and sectoral activities** is a crucial foundation, overlaid with indicative zoning and management guidance, to be developed and implemented in more detail at the local level.
- MSP can be applied successfully at different scales. The smaller the scale, the more achievable it is to develop detailed plan provisions. National MSP indicative zoning can be implemented with further specificity at the local level through regional and provincial plans, which allow a finer scale and a more detailed approach, considering local realities, needs and adaptation.
- Effective MSP must take into account the land to sea interface.
- The spatial plan does not need to be perfect – it is an **adaptive, iterative process.**

2.2.4 Science/data management and integration

Science is a critical part of the planning process, and an initial stock-taking of available information is useful in identifying key gaps. MSP processes often establish formal scientific advisory bodies and knowledge gaps are filled during the process by commissioning research.

In the New Zealand Sea Change process, the management of science was less structured and could have benefited from a **science lead** to help order and curate the science and communicate it effectively to the working group members.

For the US Mid-Atlantic Ocean Action Plan, data management, provided by the Mid-Atlantic Data Portal (see Figure 7) was crucial to success. Website analytics and feedback received during the review and comment period of the Plan demonstrated that the Data Portal is viewed as integral to the ocean planning process by the Mid-Atlantic RPB and key stakeholders (Lathrop et al. 2017). The Portal plays a stewardship role, used to inform permitting and management decisions for the implementation of the Plan. Data provision can also be a source of revenue which can support the iterative MSP processes. Examples of data sets available on the Mid-Atlantic Data Portal are provided in Figure 7.

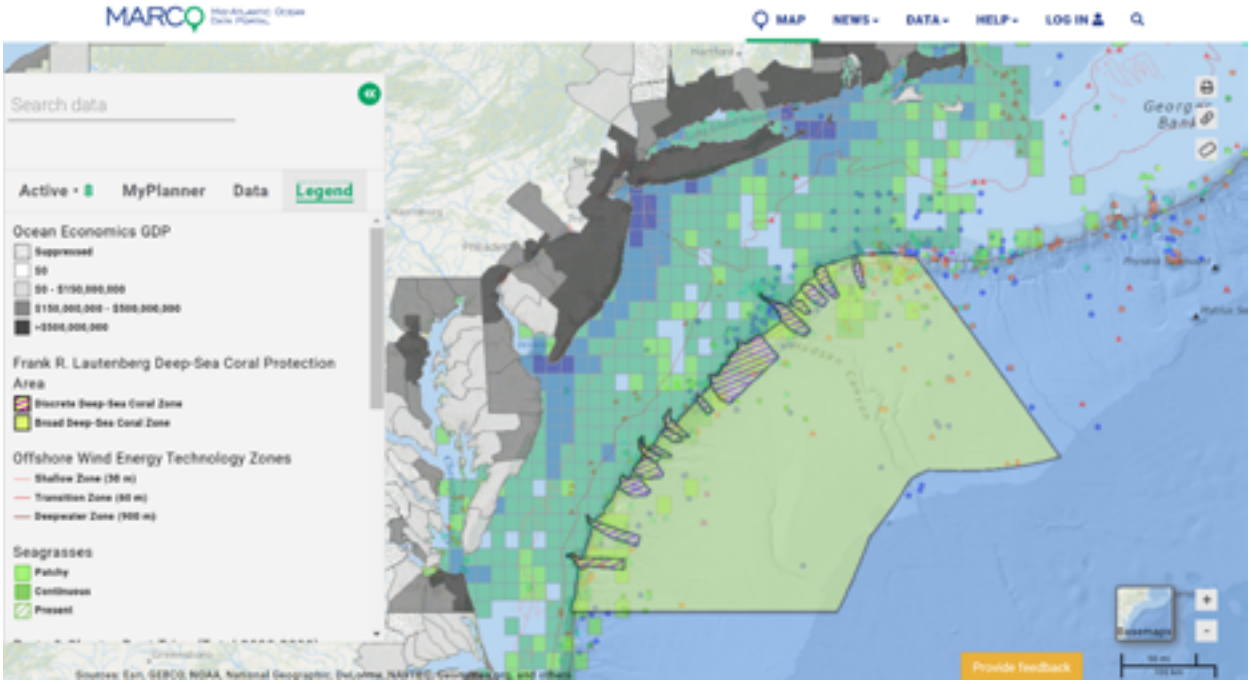

Figure 7. Example screenshot from the Mid-Atlantic Ocean Data Portal[38]

As part of the planning process, the Mid-Atlantic Regional Ocean Assessment was carried out. It summarizes the best available information on the ocean ecosystem and ocean uses from New York to Virginia. This also serves as a conduit for more in-depth information sources.

Many tools can be used to assist in the development and implementation of MSP at a variety of scales. These include different spatial management tools such as designated sites and zones, and technologically based tools like a dedicated marine atlas or cadastre based on geographic information systems (GIS). Australia and Scotland have developed a number of tools for MSP – see Annex D for details.

38 The Mid-Atlantic Ocean Data Portal can be accessed at: http://portal.midatlanticocean.org/.

2.3 Critical elements for implementation of MSP

Data Theme	Types of Data Available
Administrative	Marine jurisdictions, administrative boundaries, federal lease blocks
Fishing	Commercial and recreational fishing concentrations, artificial reef locations, fathom lines
Maritime	Aids to navigation, shipping data, anchorage areas, federal sand/gravel borrow areas, North Atlantic Right Whale management zones, submarine cable routes, disposal sites, port facility sites, shipwreck density
Recreation	Coastal recreation locations, recreational boating routes and destinations
Renewable Energy	Federal offshore wind planning areas, offshore wind lease areas, coastal energy facility locations, wind speeds
Security	Military danger zones/restricted areas, unexploded ordnance locations, Department of Defense operational areas
Marine Life	Benthic organism habitats, coldwater coral locations, essential fish habitats, seafloor topography, sediment grain size, submarine canyons, migratory fish, birds, sea turtles and marine mammals
Oceanography	Bathymetry, ocean fronts, sea surface temperature
Synthesis Products	Human use data synthesis products for five themes: Fishing, Maritime, Recreation, Renewable Energy, and Security (HUDS effort); synthesis products for marine mammals, seabirds, and fish (MDAT effort)

Source: Mid-Atlantic Ocean Action Plan

Figure 8. Examples of data sets available on the Mid-Atlantic Data Portal (not exhaustive)

Implementation of MSP needs to be considered during the MSP preparation process to ensure that the MSP proceeds to execution. The absence of this can make implementation challenging. For example, the New Zealand Sea Change plan did not include the prioritization of actions, identification of responsibilities or an implementation strategy and this has prevented the plan from being implemented. A Ministerial Advisory Committee has now been established to determine the central government's response to the recommendations and proposals of the plan.

In the US, **capacity building** is a major element of preparedness prior to and during MSP implementation. The National Ocean Policy Implementation Plan, which embodied on-the-ground actions to implement the US National Ocean Policy, the legislative framework for the Mid-Atlantic Regional Ocean Planning, incorporated key support for local and regional capacity. Refer to the chapter on Capacity Building for further insights.

Monitoring is a crucial element of implementation, to support adaptive management, and meaningful planning and legal reviews. It is important to take a consistent approach to monitoring both at the project and program levels, so that impact can be reported on at the provincial, regional and national levels. This ensures that overall impact is understood. For example, in the US National Oceanic and Atmospheric Administration (NOAA) Coastal Zone Management Program, the lack of systematic information about the overall impact of the program hurt the program politically. US laws need to be reauthorized periodically (typically every five years), and reauthorization affords opportunities for changing and enhancing the law and gathering renewed political momentum and support. In the case of the Coastal Zone Management Act, the opportunity for renewal and enhancement has not occurred. Despite this, the National Program continues to be a lead agency for new and emerging issues. For example, the development of marine spatial plans or ocean plans was initiated by the state of Massachusetts Coastal Zone Management Program and subsequently adopted by the Obama Administration, which called for and supported the development of national ocean plans.

Financing of MSP is another critical element for the effective implementation of MSP. There is a wide range of practices and models for financing depending on the circumstances. Generally, the process of MSP development is sourced by government agencies tasked with this responsibility. Data and information infrastructure and permitting can be revenue-generating by charging the private sector and other stakeholders that need to use the data.

Insights and observations:

- **Clear provisions,** identified **responsibilities,** concrete **actions** and measurable **outcomes** in the plan aid implementation and monitoring. Responsibilities for implementation are shared between government and other stakeholders (private sector).
- A well-developed **implementation plan** is important and responsibility for implementation should be clearly delineated with appropriate continuity of responsibility/input.
- Marine spatial planning is an **adaptive** process, with feedback and review mechanisms. It is a tool for managing change in its spatial and temporal dimensions.
- **Capacity building** as well as **monitoring and evaluation** are essential management activities that must be built into the MSP process if plans are to be adaptive.
- **Resourcing** of these activities is key.

2.4 Recommendations for Vietnam

Marine spatial planning is a **cross-cutting policy and planning tool** enabling public authorities and stakeholders to apply a coordinated, integrated approach. The development of the National MSP and the Master Plan on sustainable exploitation and use of coastal resources will help to create a consistent legal basis for implementing coastal management activities in localities and provide certainty for investment. It should not be a stand-alone tool – as explained in this chapter, integration is key.

To develop an effective, integrated MSP in Vietnam, and assist in the implementation of relevant objectives of the Marine Strategy, it will be important to overcome the challenges that have limited effective implementation of ICZM in Vietnam, which include (World Bank 2019):

- Fragmented decision-making in coastal areas between various sectors
- Lack of a clear and consistent policy and regulatory steps for implementing ICZM
- Unclear roles and responsibilities and close monitoring of the delivery of these responsibilities
- A low level of awareness and support among sectors and sector leaders.

The recommendations that follow will help Vietnam to achieve its intended objectives.

General principles and governance considerations

- The national MSP, and subsequent provincial or regional MSPs should **be driven by an ecosystem-based approach** and embrace priority sectors. Planning boundaries should align with ecological systems (going beyond the administrative boundaries) and include alignment with ICZM where land uses impact the marine environment.
- A specific **land to sea interface framework** should be established within the MSP development and implementation process.
- The national MSP needs to be **future-oriented** and articulate a vision shared widely among all stakeholders, providing a positive direction and allowing priorities to be established in a step-by-step manner.
- Agencies – starting with MONRE/VASI as the lead agency for MSP development – must **build integrative capacity**, such as institutional arrangements, support and funding to enable agencies to develop, implement and iterate MSP in an integrated fashion.
- As the MSP process is to be underway in Vietnam, it is worthwhile establishing **Regional Steering Committees** to implement the National MSP and develop regional/provincial plans. This could be structured in the form of **clusters of provinces**, driven by an ecosystem-based approach, and recognizing the North, Central, Southeast and Southwest regions identified in the Marine Strategy. Regional Steering Committees should include regional and provincial representatives who stood on the NSC to maintain continuity and knowledge transfer.
- Provinces with MSP and ICZM **experience** can provide useful lessons, and their expertise can be drawn upon. Vietnam might consider a phased approach to implementation, prioritizing

those regions/provinces with the most experience, which can be replicated in less experienced regions.

- The national MSP process should **start with the 'easy wins'** that can be achieved within a relatively short time frame, rather than contentious and heavily debated issues. For example, **early identification of ecologically and biologically significant areas (EBSAs)** provides a basis for ecosystem-based planning and management. Identification of existing sectoral activities (including spatial and temporal distribution) is also a key starting point.
- The **MSP must not exist in isolation**; it must be designed to be **linked to other components of development planning.** MSP should **integrate with the marine exploitation and sea use plans** of other sectors such as those for transportation, fisheries, energy and conservation.
- A potential MSP development model to ensure **vertical integration and application** from all levels of government, by establishing clear **roles and responsibilities** and appropriate **outputs/components** at the different planning levels, is provided in Figure 9 below. For actual implementation, the definition of roles (role clarification) must be detailed and be explicit regarding which agencies are leading, which ones are part of activities, and what outputs/outcomes are expected and will be monitored.

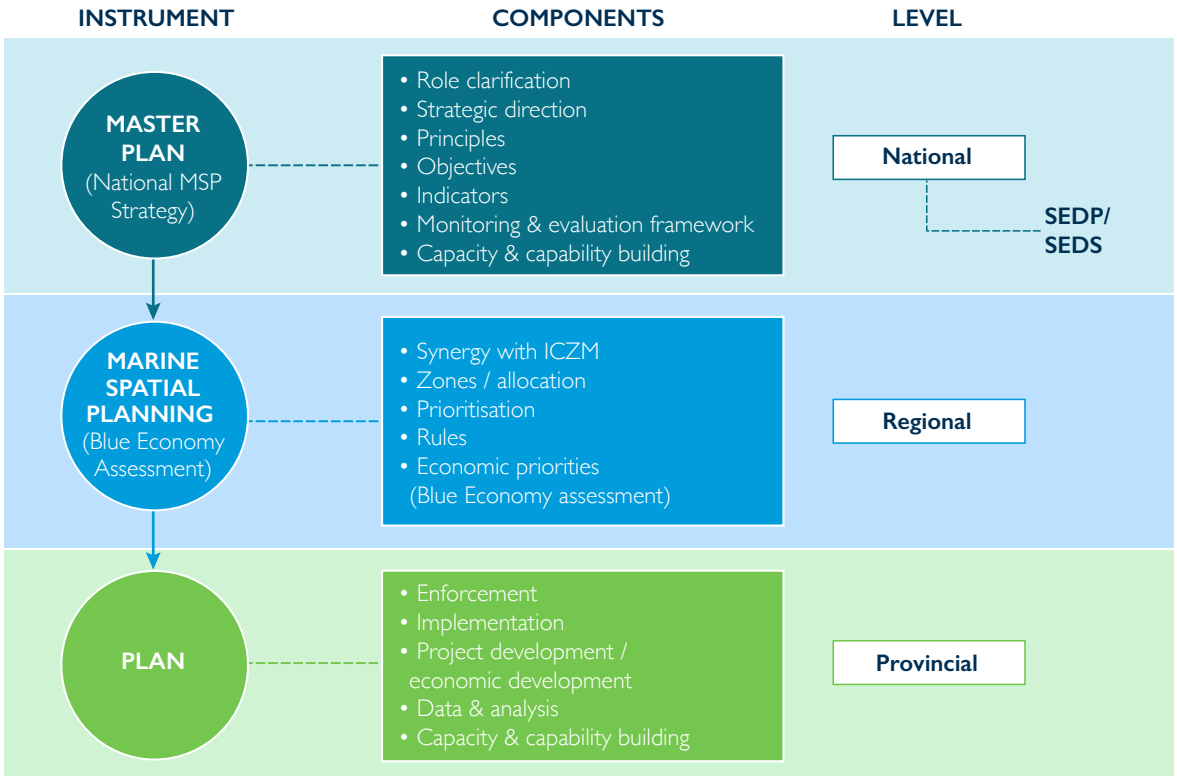

Figure 9. Potential MSP planning levels and components

Process-related recommendations

- The national MSP and subsequent regional/provincial MSPs should incorporate the concept of **adaptive management**, acting as an iterative cycle. A potential MSP development model for Vietnam is presented in Figure 10.
- An **implementation plan** should be developed that provides national, regional, and provincial roles and responsibilities. VASI seems the appropriate agency for this role but it may consider setting an inter-agency committee for MSP development and implementation. This could be a sub-committee to the NSC.
- Vietnam's Planning Law applies a five-year time frame: this planning period will allow for consideration of more complex, controversial and emerging issues in a later 'turn' of the cycle and 'next generation' MSP plans. A **mid-way review** of progress is recommended within the five-year planning period to ensure that emerging issues and new evidence are captured for effective adaptation and implementation of MSP.
- An appropriately resourced **monitoring and evaluation** program should accompany the plan, and this should be aligned with planning review processes.
- **Lessons learned assessments** are useful to build on the experience of MSP to date and inform future planning processes. A 'lessons learned' log should be established at the start of the plan-making process so that relevant issues can be captured at the time they arise and are not overlooked. This information could be included on the Data Portal.
- MONRE/VASI should promote a **common language and understanding** of MSP outcomes and processes achieved across agencies, sectors and communities.
- Before advancing too far in the MSP process, it is imperative to develop a **framework for public participation**. This can include awareness campaigns to develop common understanding on MSP and potentially the blue economy as well.

Data and knowledge

- MONRE/VASI and MOST may consider appointing a science lead for the MSP process to order and curate the science and communicate it effectively to the working group members. Existing experience with ICZM may be useful for this. The priority objective of the science lead would be to:
    - Establish science needs and conduct science and data availability stock-taking, including information on ecologically and biologically significant areas, social aspects (traditional uses, human settlements), physical processes (currents, waves, sediment flow, bathymetry), climate change data, and data on sectoral activities.
    - Develop a data and information acquisition strategy, and explore the development of a data portal with input from stakeholders.

- The MSP process is information intensive and the preparation of the national MSP should include a directed **strategy for acquiring and managing information, including development of a data portal.**[39]
- The Law of Planning introduced a national information and database system as a portal connecting multilateral entities participating in the process of planning and project appraisal (Saxena 2019). It is recommended to explore whether the Marine Strategy requirement for a **digitized database** can be linked up with the national information and database system. The experience of data portals such as the US Mid-Atlantic example can also be considered.

Integration/alignment with central and sectoral plans and processes

- MSP is reliant on integration across multiple agencies and their jurisdictions. Vietnam needs to consider potential synergies and linkages between the **MSP process and other appropriate existing central and sectoral processes and plans**. This will help ensure an integrated approach, maximize efficiencies, and help to break sectoral/agency silos.
- Ensure systematic information **(monitoring and evaluation)** about the **overall impact of the program** (national and regional/provincial MSP development and implementation), **aligned to the planning period**. This will enable political momentum and support as well as opportunities for constructive changes and enhancement.
- Integration must also focus on building **social capital** (including shared understanding, collaboration, connection, and trust), include place-based values, and consider cumulative impacts. Figure 10 depicts a potential MSP development model for Vietnam, in terms of the national MSP and implementation at regional/provincial levels.

39 Note that the General Statistics Office of Vietnam (under MPI) has been directed to study a set of indicators for the Marine Strategy.

Photo: Vadim Petrakov - shutterstock.com

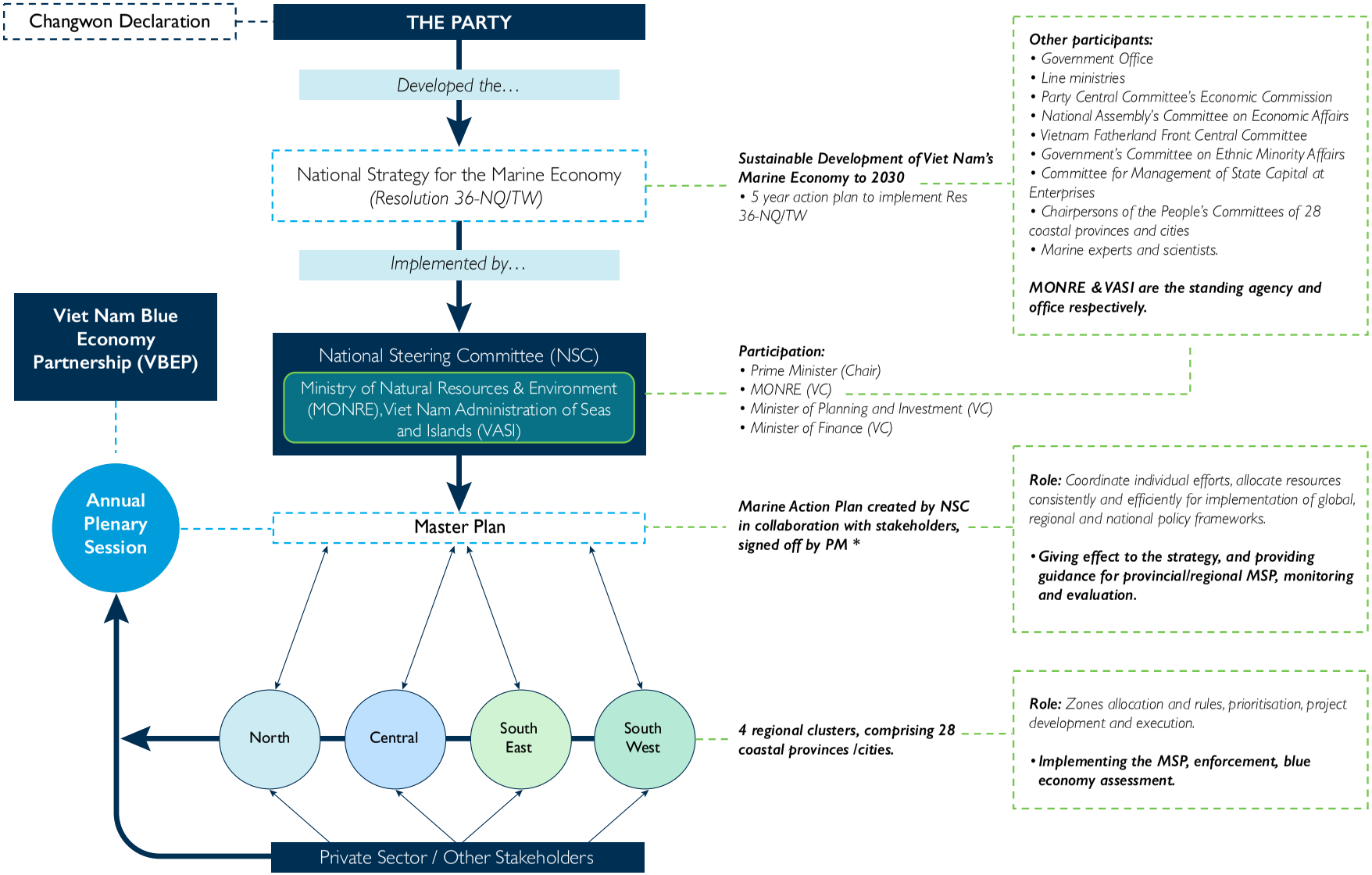

Figure 10. Potential MSP development model for Vietnam

CHAPTER III.

Effectiveness of inter-sectoral coordination between agencies

Photo: Tran Qui Thinh - shutterstock.com

Marine management around the world has traditionally taken a fragmented, sectoral approach, producing sub-optimum results. Achieving better outcomes requires effective cooperation and coordination among national, regional and local agencies charged with managing activities such as tourism, marine transportation, fishing, aquaculture, minerals exploitation, environmental protection and the land-sea interface.[40] Efforts to increase the effectiveness of agency coordination can involve the creation of new mandates at national, provincial, state or local levels.

To implement the Marine Strategy, the Government of Vietnam established the National Steering Committee through the merger of the state steering committee on basic surveys of marine resources and environment and the coordination committee. The NSC is tasked to implement the ICZM strategy with a vision towards 2030 – aiming to issue focused and consistent directions on the sustainable development of Vietnam's marine economy.

As the standing agency of the steering committee, MONRE is responsible for ensuring the working conditions of the committee and using its apparatus to organize the implementation of the committee's tasks. [41] The committee is an interdisciplinary coordinating organization which is tasked with proposing orientations and solutions to the Prime Minister that deal with important inter-sectoral issues related to the sustainable development of Vietnam's marine economy. Additionally, the NSC promotes coordination between ministries, ministry-level agencies, government bodies and local authorities. The committee is responsible for organizing the implementation of the Government's master plan and five-year plan on the implementation of the Marine Strategy, as well as the key program on basic surveys of Vietnam's sea and island resources and environment of the sea and islands until 2030.

The success of the NSC will depend on the effectiveness of its coordination and collaboration, both within the committee itself, and in terms of its engagement with relevant regional, provincial and sectoral coordinating mechanisms.

ICZM governance insights for effective coordination

Integration and coordination of agencies and their various coastal and marine management efforts is the major objective of integrated coastal zone management (ICZM). It provides a governance and outcomes framework that can be utilized to develop a successful marine economy. The Sustainable Development Strategy for the Seas of East Asia (SDS-SEA) recognizes ICZM as an effective management framework and a systematic approach to achieve sustainable development of the coastal and marine areas. This potential has been further recognized by the PEMSEA Network of Local Governments, which includes Vietnamese representation, and in 2011, adopted the Dongying Declaration on Building the Blue Economy through Integrated Coastal Management.[42]

It is useful to seek out lessons from the ICZM experience in Vietnam and the wider region (see China case study below) when considering effective inter-agency and cross-sectoral coordination for the implementation of a Marine Strategy.

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40 Integration across central, regional and provincial government agencies is referred to as "vertical integration"; integration across sectors is referred to as "horizontal integration".

41 Decision No. 203/QD-TTg on the establishment of the National Steering Committee on the implementation of Vietnam's Sustainable marine economic development strategy to 2030, with a vision to 2045 (6 February 2020)

42 The Dongying declaration is available at: http://pemsea.org/sites/default/files/dongying-declaration-on-building-blue-economy-through-integrated-coastal-management-july-2012.pdf.

The World Bank Situation Assessment for ICZM in Vietnam noted that coordination has been incomplete and found that:

- The office assisting the Coordination Committee has not been allocated funding for regular activities.
- A decreased reliance on international grants is vital for long-term financing, with appropriate resources mobilized via the budgets of line ministries and state budgets providing support for apparatus operation and regular activities.
- A mechanism is needed to mobilize other sources of income such as fees, taxes, and voluntary contributions (World Bank 2019).
- New MSP planning may provide institutional transformation to align sector plans and optimize ICZM implementation.
- Annual reports from ministries on the implementation of assigned tasks for ICZM have been lacking and have not met the stated requirements.

3.1 ICZM integrated governance: China case study

Good ICM governance is based on the development and functioning of a coordinating mechanism to generate alignment, reduce policy and functional conflicts, and facilitate vertical and horizontal coordination across agencies and sectors. Integrated governance is intended to strengthen the role of line agencies, not reduce them. ICM helps reduce duplication of agency functions and increases cost-effectiveness.

The application of ICM can drive an integrated, coordinated approach in terms of sustainable coastal development (see Figure 11 below).

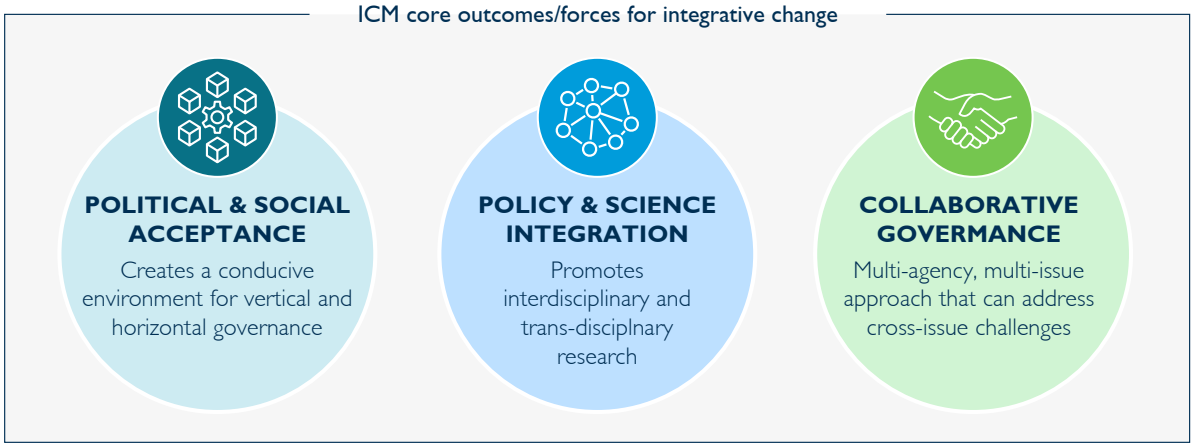

Figure 11. ICM outcomes driving integration

The ICM example of Dongying, China (Chua et al. 2018) provides useful insights in terms of the success factors and challenges in achieving effective coordination – which are captured in Table 5 below.

Table 5. Success factors and challenges for ICM development in Dongying, China

ICM coordination success factors	Challenges overcome	Results and benefits
Strong commitment and support of the local government. The leadership of the Dongying City government gave vital policy and financial support to enable the implementation of the ICM program (locally funded and implemented by local human resources with minimal international technical or financial support). **Encouraging active collaboration of relevant agencies throughout the ICM cycle.** Endorsement from the ICM Committee contributed to strengthening inter-agency cooperation. The willingness to cooperate was also driven by: • The common vision of the coastal strategy for the development of the ICM program and the agreed collective mission in achieving sustainable development objectives. • The availability of a **common platform for resolution of inter-agency and sectoral conflicts**, enabling negotiation, clarification and dialogue in respect to disputes. • Increased **confidence, appreciation, and support from participating agencies**, stakeholders and the general public as a result of the **visible outputs and outcomes arising from the implementation of the ICM program**. The ICM initiatives increased public involvement, which was further enhanced by national recognition in the form of honorary awards bestowed to Dongying City.	The changes of leaders and key members of the ICM Committee could influence the coordinating efficiency, performance and stability. The ICM Committee was initially operating as a temporary mechanism with ad hoc meeting schedules based on specific needs. Eventually the committee became a permanent mechanism of local government. The ICM Committee initially did not clearly define its area of coverage and responsibilities, which caused uneasiness in inter-agency cooperation, budgetary allocation, etc. Terms of reference and scope and areas of coverage were identified and adopted by the committee members.	The ICM program contributed to the GDP growth of the city. From 2009 to 2014, Dongying's GDP increased from 205.9 billion to 343.1 billion Chinese yuan (RMB), with an average growth rate of slightly more than ten percent (Guanqiong 2014).[43] Development of management and technical capacities at all levels of governance, especially those involved in the implementation of the ICM programs, through training opportunities and exchange programs, and importantly, "learning by doing". Members of the ICM Committee benefited from increasing knowledge and experience in managing the complexity of the coastal areas and the value of working together.

Source: Adapted from Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and Coastal Management Center (CMC), 2018.[44]

43 Analysis of the contribution of ICM to in Dongying's socioeconomic development is available at: https://core.ac.uk/download/pdf/48788123.pdf.

44 For more details, go to: www.seaknowledgebank.net.

3.2 National and regional approaches: US case study

3.2.1 ICZM vertical coordination

The US Coastal Zone Management Act of 1972 (CZMA) provides one of the best examples of vertical coordination in ICZM. Section 307 of the Act, called the "federal consistency" provision, provides a strong voice in federal agency decision-making, which it otherwise would not have, for activities that may affect a state's coastal uses or resources. The federal consistency provision is a major incentive for states to join the National Coastal Zone Management Program and is a powerful tool that state programs use to manage coastal activities and resources and to facilitate cooperation and coordination with federal agencies.[45]

Despite Vietnam not having a federal system of government, the consistency principle could still be relevant in intergovernmental relations (coordination between national, regional, provincial and district levels).

3.2.2 The Mid-Atlantic – a regional inter-agency approach

In the US, the Mid-Atlantic Regional Council on the Ocean (MARCO) and the Mid-Atlantic Committee on the Ocean (MACO) collaborate with governmental agencies, tribal nations, and many other interested stakeholders through a series of specially focused work groups [46] on marine debris, ocean acidification, ocean mapping and data, non-consumptive recreation, and offshore renewable energy

The Mid-Atlantic Regional Council on the Ocean (MARCO)

MARCO is a strong example of regional, inter-agency coordination. MARCO was established as a partnership of five US States to address shared regional priorities and provide a collective voice.[47] Four regional priorities for shared action were agreed upon to improve ocean health and contribute to the high quality of life and economic vitality of the region.

45 For more information, see: https://coast.noaa.gov/czm/consistency/.
46 For more information, see: https://www.midatlanticocean.org/ocean-planning/work-groups-collaborative-efforts/.
47 MARCO was established as result of the Mid-Atlantic Governors' Agreement on Ocean Conservation, signed by the Governors of New York, New Jersey, Delaware, Maryland, and Virginia in 2009.

	**Climate Change Adaptation** Prepare the region's coastal communities for the impacts of climate change on ocean and coastal resources.		**Renewable Energy** Collaborating on a regional approach to support the sustainable development of renewable energy in offshore areas.
	**Marine Habitats** Coordinating the protection of important marine habitats, including sensitive and unique offshore areas such as corals, canyons and migration corridors.		**Water Quality** Promoting improvements in ocean water quality.

Source: www.midatlanticocean.org/about/overview

Figure 12. Agreed priorities of MARCO

MARCO uses regional ocean planning to advance agreed priorities. Ocean planning establishes a common foundation to guide actions to address the shared regional priorities and improve understanding of how ocean space and resources are being used, managed and protected.

From 2013-2018, MARCO supported the Mid-Atlantic Regional Planning Body (RPB), which undertook the regional ocean planning initiative, the Mid-Atlantic Ocean Action Plan (see also the Marine Spatial Planning chapter of this report). The RPB included state and federal representatives, tribal entities, and the Mid-Atlantic Fishery Management Council (MAFMC). Departments represented included Agriculture (represented by the Natural Resources Conservation Service), Commerce (represented by the NOAA), Defense, Energy, Homeland Security, Transportation, and the Environmental Protection Agency.[48]

The Mid-Atlantic Ocean Plan set out best practice guidance in terms of the various forms of coordination.[49] In terms of inter-agency coordination, this included early coordination and timely provision of information, agency coordination meetings that were open to all agencies with jurisdiction or subject-matter interests, and consistent utilization of the Mid-Atlantic Data Portal.

MARCO leverages existing state and federal resources, knowledge, and partnerships to build a stronger base of information and experience to make well-informed decisions. The MARCO

48 In 2018, President Trump signed Executive Order 13840 (the Ocean Policy to Advance the Economic, Security, and Environmental Interests of the United States), which replaced RPBs with state-led planning efforts that address ocean-related matters that may require inter-agency or intergovernmental solutions. Although the RPB is no longer active, the MARCO states and former RPB member organizations continue to collaborate on shared priorities – including those highlighted in the latest executive order. For more information, see: https://www.midatlanticocean.org/ocean-planning/about-ocean-planning/.

49 The Plan is available at: https://www.boem.gov/sites/default/files/environmental-stewardship/Mid-Atlantic-Regional-Planning-Body/Mid-Atlantic-Regional-Ocean-Action-Plan.pdf.

Management Board[50] leads efforts and is responsible for implementing MARCO's regional priorities. It is comprised of senior coastal managers and policy advisors from each of the five member states. By working together, while recognizing the partners' different interests and needs, MARCO provides the states with expanded capacity to grow the vital ocean-based economy, improve ocean health, achieve sustainable use of ocean spaces and resources, and improve ocean health.

Mid-Atlantic Committee on the Ocean (MACO)

MACO is a committee established by MARCO to foster collaboration among states, federal agencies, the Mid-Atlantic Fishery Management Council, and federally recognized tribes, and to engage stakeholders. The purpose of MACO is to enhance the vitality of the region's ocean ecosystem and economy through increased communication and collaboration. MACO's goals are to:

- Provide a venue for ongoing regional information sharing and coordination about the Mid-Atlantic's ocean ecosystem and economy.
- Generate a deeper understanding and awareness of state, federal, tribal and regional fisheries management entities' programs and other activities affecting ocean waters of the Mid-Atlantic.
- Identify and pursue, where appropriate, opportunities for collaboration on regional ocean issues.
- Generate and maintain a list of contacts engaged in ocean planning to facilitate communication across the region.
- Identify ways to enhance federal data sharing and support for the Mid-Atlantic Ocean Data Portal to inform ocean planning and management.
- Engage stakeholders in learning about, identifying and responding to regional ocean issues.

Committee members convene an annual Mid-Atlantic Ocean Forum[51] as a venue for regional information sharing, coordination, and collaboration. The Forum enhances the region's ability to leverage existing efforts and information across multiple levels of government, tribes, NGOs, and other stakeholders. The information and presentations discussed and shared through the Forum inform the Committee and participants about potential areas to take future action, generate a deeper understanding and awareness of member priorities and policy changes/enhancements that may affect regional planning (e.g., funding, data, research, projects, best practices identified in other regions), and identify areas for coordination.

3.2.3 Maritime infrastructure and transportation in the US Arctic

There are a variety of US stakeholders that play a role in maritime infrastructure in the US Arctic, including several federal agencies, such as the NOAA, US Coast Guard, and US Army Corps of Engineers. Inter-agency collaboration is a requisite, given the number and range of agencies involved with the region. A recent review of US federal efforts related to Arctic maritime shipping and infrastructure found that

50 For more information, see: https://www.midatlanticocean.org/about/management-board/.
51 For more information, see: https://www.midatlanticocean.org/mid-atlantic-ocean-forum/.

while agencies have taken some steps to address gaps in US Arctic infrastructure, those efforts are not based on a government-wide assessment of the economic, environmental and safety risks posed by maritime infrastructure gaps to inform investment decisions in the US Arctic (GAO 2020).

To guide federal efforts, The White House developed a National Strategy for the Arctic Region in 2013 and established an inter-agency Arctic Executive Steering Committee in 2015. However, due to changing conditions in the Arctic, the strategy is now outdated and there is no government-wide strategy that aligns with key management practices, such as identifying goals and objectives, and establishing performance measures. The White House has not designated which entity is to lead US Arctic maritime infrastructure efforts and the review found that US Arctic inter-agency groups do not reflect collaboration best practices, such as sustained leadership and inclusion of all relevant stakeholders, and the Steering Committee is now dormant. Without a current strategy and a designated inter-agency entity with robust collaboration practices, agencies may miss opportunities to leverage resources and target infrastructure improvements in areas that would best mitigate risks (GAO 2020).

Instead, agency officials currently base Arctic infrastructure decisions on their agency-specific missions and strategies, and competition with other established agency mission areas means that securing resources to address US Arctic infrastructure is challenging. For example, the review found that infrastructure investments may not compete as well against other agency-established priorities in other parts of the country (GAO 2020).

While agencies have taken actions to address maritime infrastructure gaps, federal efforts lack the following:

- A government-wide assessment of risks posed by gaps in maritime infrastructure.
- A current government-wide strategy for addressing maritime infrastructure that includes goals, performance measures, and appropriate responses to prioritized risks.
- An inter-agency mechanism and consistent leadership to guide agency actions related to maritime infrastructure.

Without these elements, federal agencies may lack information for decision-making and prioritization of investments and actions, and the ability to demonstrate progress in addressing maritime infrastructure. Agencies may also miss opportunities to work together and leverage resources towards achieving broader outcomes.

Category	Examples	Status in the U.S. Arctic
Environmental information	Charting and mapping	Less than 5 percent of the U.S. maritime Arctic has been comprehensively surveyed to modern standards for nautical chart updates, according to the National Oceanic and Atmospheric Administration (NOAA).
	Weather and sea ice forecasting	NOAA's National Weather Service and the U.S. National Ice Center, a partnership among NOAA, the U.S. Navy, and the U.S. Coast Guard, produce sea ice and weather forecasts. NOAA has previously noted that observations that are needed for timely forecasts, such as for wind and clouds, are very limited in the Arctic.
Response services	Search and rescue	There is limited infrastructure to support aviation-based search and rescue operations. The nearest U.S. Coast Guard air station to Utqiagvik, on Alaska's northern coast, is about 945 miles away in Kodiak.
	Oil spill response	NOAA, U.S. Coast Guard, Interior, and the State of Alaska have roles in this area. Their ability to respond to oil spills is affected by the communications limitations in the region and the vast distances over which responders and their equipment must travel.
	Icebreakers	The U.S. Coast Guard's medium icebreaker Healy was commissioned in 2000 and is the primary icebreaker used in the U.S. Arctic. The only U.S. Coast Guard heavy icebreaker, the Polar Star, was commissioned in 1976 and is currently used in Antarctica to support McMurdo station.
Operating environment	Vessel requirements	As of 2013, the International Maritime Organization (IMO) had yet to finalize requirements for vessels operating in Arctic and Antarctic ice-covered waters including requirements for training, vessel design, and vessel constructiona
	Communications	Communications, which are sufficient to support voice and data needs in the Bering Sea but limited at higher latitudes, are necessary for vessels to receive weather and sea ice information or request emergency services.
Navigation	Deep-draft port	The closest deep-draft port is Dutch Harbor in the southern Bering Sea, which is over 800 miles from the Bering Strait.
	Harbors of refuge	A harbor of refuge is a port, inlet, or other body of water normally sheltered from heavy seas by land in which a vessel can safely moor during severe conditions or when it needs repairs. The U.S. Arctic lacks such a harbor designated by the IMO.
	Managing waterways/ marine areas of ecological significance	The U.S. Committee on the Marine Transportation System reported in 2013 that compulsory regulations to protect areas in international Arctic waterways with heightened ecological and cultural significance from the impacts of shipping did not exist.

Source: GAO Analysis of Federal Agency Information

Figure 13. Examples of maritime infrastructure gaps in the US Arctic, identified by the US Committee on the Marine Transportation System and other agencies

Without a risk assessment, agencies lack assurance that their investments are addressing the highest-priority risks. A review by the US Government Accountability Office (GAO) found that agencies' actions to address maritime infrastructure gaps were not fully consistent with the areas that the stakeholders interviewed identified as the most critical. For example, 55 percent of stakeholders interviewed identified charting Arctic waters as the highest priority to address. However, hydrographic survey data has been acquired on less than 1 percent of the over 200,000 square nautical miles of waters identified as significant to navigation in the US Arctic. In addition, nine stakeholders identified addressing gaps in communications in the US Arctic as a key priority. However, reports by the US Committee on the Marine Transportation System indicate no change in the status of communications capabilities in the US Arctic between 2013 and 2018 (GAO 2020).

The GAO identified key characteristics of national inter-agency (government-wide) strategies, including:

- Definition of obstacles and risk assessment to address the gaps the strategy is directed towards; and
- Goals, objectives, and performance measures to gauge and monitor results.

The GAO recommends that leaders should rank risks in relation to strategic objectives and review the prioritized list collaboratively to select the most appropriate response to address the risk (GAO 2016).

With multiple agencies involved, these key characteristics help managers collaboratively determine the extent of investment needed and facilitate effective targeting of resources. Without performance measures, agencies are not able to demonstrate, and decision makers are unable to monitor, the extent to which agency actions have addressed gaps.

3.3 Key roles and relationships: New Zealand case study

Interpersonal relationships are key to driving effective coordination and implementation. Building networks, sustaining relationships, and generating champions within agencies (as well as sectors and communities) are crucial to achieve outcomes. For example, while New Zealand's Sea Change Marine Spatial Plan is world-leading for its collaborative, local-level processes, the commissioning agency staff felt excluded from key aspects of the collaboration. This, as well as the lack of a formal multi-agency implementation mechanism following the plan's release, and lack of alignment with the plan's proposals and existing legislation, contributed to implementation difficulties (Serjeant and Peart 2018).

Substantial resources were made available to the project. However, Sea Change did not have dedicated project staffing, with most staff being seconded from agencies, and additional expertise being provided through periodical short-term external contracts. There were differences between staff and their respective time allocation for the project. The skills of the seconded staff did not always match the project's requirements. The local government agencies were concurrently undertaking other major planning exercises, which absorbed much political and staff attention. All these factors hindered the development of a strong core project team.

There are lessons from this experience for future MSP and other marine planning exercises and initiatives. While multi-agency projects are complex, with multiple lines of accountability and reporting, and various budgetary cycles, it is important that, to the extent possible, the project structure is streamlined. There should be a dedicated project team carefully selected to meet the skills required to deliver the project. Strong working relationships need to be built between all the different elements of the project, and the more streamlined the structure, the easier this task will be (Peart 2018).

In the context of coordination, integration and MSP, different agencies may have different internal cultures and policies for how they make decisions, develop management strategies and activities, build partnerships, and spend their funding. It is crucial that agencies take the opportunity to spend time face to face, including holding calibration meetings to identifying what aspects of management each agency will be responsible for. Significant interpersonal relationships between participants from different agencies are built via meetings and training workshops, and the early building of these relationships provides a crucial foundation for successful coordination in everyday practice. Refer to the Capacity Building chapter for further insights.

3.4 Long-term coordination: Philippines case study

3.4.1 Coordination to secure finance

Effective coordination and integrative governance are key factors in securing finance for the development of marine economies and the implementation of marine/coastal initiatives. An early example of the success of a coordinated approach was evident in the example of Batangas Province in the Philippines, which implemented ICM in respect to activities including tourism, fisheries, aquaculture, ports and marine transportation. The Coordinating Committee brought together government, the private sector and communities, who were deeply engaged via public meetings and daily radio broadcasts. This cooperation and buy-in meant that the provincial government, although limited in budget, was able to secure support from the private sector to sustain financial support for the ICM activities beyond the preliminary international financing. The corporate sector has contributed to the marine economy and ICM in Batangas by:

- Participating in the local government's multi-sectoral coordinating council for the program
- Giving input to planning and development activities of the ICM program
- Providing resources, skills, equipment and facilities in support of ICM program activities and events
- Acting as a catalyst to increase community and corporate awareness and participation in coastal resources management (PEMSEA n.d.).

The innovative coordinated and collaborative approach also enabled the establishment of the first local government run water quality testing laboratory, which earned revenue by providing services to companies operating in the bay. Tourist dive fees from protected coral areas also generated significant revenue (Cardinal et al. 2018).

3.4.2 Sustaining coordination via institutionalization

The Batangas ICM program was initiated as a collaboration between five municipalities and one city in Batangas Bay. ICM has now expanded to cover the watershed, coastal areas and bays of the entire province, In coordination with 34 local governments, agencies and donors (PEMSEA n.d.).

In 2006, the Philippines adopted ICM as a national strategy to ensure the sustainable development of the country's coastal and marine environment and resources, and established supporting mechanisms for its implementation.

Recognizing that good governance and outcomes must be achieved through the combined efforts of all stakeholders concerned, the Philippines approach ensured that roles and responsibilities of government agencies, industry/ private sector, and community groups in the ICM sites were clearly identified and mandated.

In the provinces of Guimaras and Bataan, the structure of the coordinating mechanism evolved into five subcommittees that correspond to the five sustainable development aspects of the Framework for Sustainable Development of Coastal Areas. In Bataan, the coordinating mechanism was transformed into the Bataan Sustainable Development Council through an Executive Order in which the Council was tasked to act as the governing body mandated to set policies and guidelines for the implementation of the Bataan Sustainable Development Strategy. The project management offices were set up as regular units of the environment and planning offices of the local government (Chua et al. 2018).

Institutionalization of coordinating mechanisms help to ensure their longevity, sustainability, and ability to adapt to policy, administrative and political changes. In this respect, a parallel has been drawn between the Bataan experience and the City Government of Da Nang in Vietnam, which issued Decision No. 3651/QD-UBND on June 5, 2014. This transformed the ICM Project Coordinating Committee into the Steering Committee on Integrated and Unified Coastal and Marine Resources and Environment Management, thus expanding the role of the Committee on integrated management of the sea and islands, in line with institutional reforms at the national level (Chua et al. 2018).

Lessons learned and insights

Collaborative, coordinating mechanisms all benefit from certain key features, which raise considerations that may be of assistance to Vietnam's National Steering Committee and associated regional and provincial coordinating entities. These key issues and considerations are captured in the table below.

Table 6. Key issues and considerations for effective inter-agency coordination and collaboration

Key issues for effective inter-agency coordination and collaboration	Considerations
Outcomes and accountability	• Clear definition of shared short-term and long-term goals and outcomes. • Methodology to track and monitor progress. • Embed collaboration-related competencies or performance standards across agencies, against which agency and individual performance can be evaluated. • Enable the means to recognize and reward accomplishments related to collaboration. • Institutionalization of coordinating mechanisms helps to ensure sustainability.
Roles and responsibilities	• Identification and clarification of the specific roles of participating agencies. • Robust understanding of agency's own role, and the roles of other participants.[52]
Stakeholder participation	• Inclusion of all relevant stakeholders. • Identify each agency's ability to commit resources and ability to attend regular activities and meetings of the coordinating body. • Ensure appropriate authority of participants to make decisions and resolve challenges.
Resources	• Identify the human, information technology, physical, and financial resources needed to initiate or sustain collaborative effort. • Determine how the collaborative mechanism itself will be funded and staffed. • Develop robust communications strategy and online collaboration tools.
Written guidance and agreements	• Formal documentation of agreement between participating agencies in terms of how they will be collaborating (i.e., Memorandum of Understanding or Terms of Reference). • Include monitoring and revision of these agreements to implement lessons learned and improve effectiveness of collaboration.
Inter-agency relationships	• Ensure a shared understanding of the missions, strengths and organizational cultures of the participating agencies (and identify commonalities and differences). • Facilitate relationship building through meetings, workshops, networks, communities of practice and joint training. • Agencies to agree on common terminology and definitions.

Source: Adapted from GAO 2012 (available at: https://www.gao.gov/assets/650/648934.pdf)

52 A degree in Marine Affairs would build capacity in this respect. In terms of short-term training, training in ICM normally includes a module on coordination/development of coordinating mechanisms. Specific skills and knowledge needed include organizational theory, stakeholder analysis and management, negotiation and conflict resolution, public policy, and public relations.

3.5 Recommendations for Vietnam

National–regional–provincial coordination

The 'scaling-up' of on-the-ground initiatives from local, to national, and on to the regional level using ICM has been a success for integrative implementation of the Sustainable Development Strategy for the Seas of East Asia. Local governments have seen that the ICM governance framework and process results in both economic gain and environmental benefit, and as a result, a number of local communities and governments in the region have begun to institutionalize ICM programs within their operations.[53]

To achieve implementation of Vietnam's Marine Strategy, integrated governance and policy at a national level must be translated into an implementable policy and administrative agenda at the regional and local levels. Regular budgetary support is crucial at the local level, which will enable scalable solutions and success.

Box 2: Coordination of coastal regions in Vietnam – Thua Thien Hue example

In Thua Thien Hue Province, the People's Committee has established the Management and Coordination Unit for coastal regions, to consistently implement the sustainable development of marine economy. The function of this unit primarily includes the roles and responsibilities of inter-sectoral coordination as follows:

Direct the various departments, divisions, and People's Committees in regions, towns and districts to develop programs and action plans for implementing the holistic management of coastal areas within the province.

Coordinate the implementation of duties, programs, plans and projects within the coastal area that ensure approved collaboration among organizations, provinces and respective institutions.

Collaborate among the departments, divisions, sectors and People's Committees in regions, towns and districts to resolve critical problems in regard to exploiting the coastal area, utilizing natural resources, and protecting the environment.

Note: See Decision 2241/QD-UBND dated September 13, 2019 of the People's Committee with regard to the establishment of a Management and Coordination Unit for coastal regions, Decision 164/QD-BDP dated November 6, 2019 of the Management and Coordination Unit regarding the issuance of Governance rule of the Unit).

53 For more details, go to: www.pemsea.org.

The role of the National Steering Committee

- The NSC can play a vital role in ensuring that the necessary policies, programs and capacity-building activities are in place for expanding ICM coverage to all coastal communities, seeking synergies with MSP, and promoting regional marine economy initiatives. It is important to note that national government plays a particularly key role in term of transboundary issues, such as pollutants discharged and carried by rivers and ocean currents, which require interventions at a higher level.
- The NSC must provide the needed leadership, coordination and integration in fulfilment of the Marine Strategy. As the NSC is high-level in terms of institutional arrangements, further mechanisms will be required for mobilizing resources, mainstreaming and implementing the Marine Strategy. The mechanisms should include (in the near term):
    - Regional and/or provincial steering groups as a local mandate for the NSC (refer to recommendations in the chapter on Marine Spatial Planning for further related details).
    - A Monitoring and Evaluation group within NSC to provide for transparency, consistency and accountability across all agencies that have a role in Marine Strategy implementation. This should consider performance/reporting needs in relation to coordination/collaboration, and ability to track tasks, outcomes and targets.
- In the short term, MPI should also conduct a network analysis to identify connections, dependencies and gaps in Vietnam's marine economy policy development and implementation.
- Another coordination mechanism that MONRE proposes is the Vietnam Blue Economy Partnership (VBEP). This platform would assist with coordination and mobilization of human, technical and financial resources in a coordinated manner by key ministries in the NSC[54] and should be established as soon as possible. It is important that the functions and objectives of VBEP do not overlap, but that they either support or stretch the functions of the NSC. The VBEP platform could accomplish the following:
    - Broaden the focus of the partnership beyond policy insights to include a strong focus on marine strategy implementation and mainstreaming, and investment/financing. This would help add value to the role and functions that NSC is playing, avoid duplication of efforts, and play a key role in operationalizing policy and strategy for the blue economy in Vietnam from the central to provincial level.
    - Include a dashboard to measure and report change – including making the connections with SDGs and the development of ocean accounts (refer to the chapter on Orientation of Blue Economy for further insights).
- Technical working groups focusing on cross-cutting issues (which can delve into sectors as necessary) are a way for the VBEP to create impact, for example, through:

54 In order to build capability for transition to blue economy and make progress towards SDG 14, efforts are ongoing to establish the Vietnam Blue Economy Partnership in cooperation with development partners. The authors of this report have seen an early version of the potential scope for VBEP.

- Blue economy finance and investment (focus on project pipelines, investment instruments and business cases).
- Sector innovation and partnerships (aquaculture, tourism, renewable energy, transport, plastics).

Communication and awareness raising – to address the low level of knowledge about marine economy opportunities for provinces, the private sector, small and medium enterprises (SMEs), and investment entities. (Refer also to the recommendations in the chapter on Orientation of Blue Economy).

Accountability

- To support accountability and transparency, performance measures can be developed and published to monitor agencies' progress over time, in terms of the Marine Strategy's goals and objectives, and the appropriate responses to address risks.
- This may involve establishing a Monitoring and Evaluation group within the NSC to provide for transparency, consistency and accountability across all agencies, and performance/reporting needs to reflect coordination and collaboration.
- Since MONRE/VASI are responsible for supporting the NSC effectively, they are well placed to track and report on progress against tasks and targets. External review can also be commissioned to assess progress against outcomes and targets.

Assessments and analysis to aid coordination

- The existing policy framework relevant to the Marine Strategy in Vietnam is extensive – we recommend conducting a network analysis to identify connections and dependencies. This analysis can provide an insight to the extent to which the policy framework is interconnected and where key linkage points exist, by measuring the degree of references within all relevant policies. This will aid in developing effective inter-agency coordination. It is expected that the SEDP will be a key nexus.
- Confirming where the implementation of the Marine Strategy can add value to existing efforts, build connections across silos, and plug policy and coordination gaps and weaknesses will enable Vietnam to leverage existing initiatives and mechanisms and avoid reinventing the wheel. Stakeholder mapping and social network analysis are key tools in this respect.[55]
    - Conducting a government-wide assessment and prioritization of the economic, environmental and social risks posed by the identified gaps in the priority areas of Vietnam's marine economy development will help to inform collaborative investment priorities and decisions.

55 Potential methods for undertaking such analysis include face-to-face interviews, structured social network surveys and visual representations, and Q-methodology surveys (to understand stakeholder perspectives).

CHAPTER IV.

Strengthening capacity for integrated management of natural resources for sea and islands environment

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4.1 Capacity needs

Capacity building refers to the "process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in a fast-changing world. (UN Academic Impact. n.d.)" The outcome document of the 2012 UN Conference for Sustainable Development (UNCSD), ***The Future We Want***, provided guidance on the enhanced capacity building needed for sustainable development. It called for the strengthening of technical and scientific cooperation, including North-South, South-South and triangular cooperation. It emphasized the importance of human resource development, including training, the exchange of experiences and expertise, knowledge transfer and technical assistance for capacity building. This involves strengthening institutional capacity, including planning, management and monitoring capacities. The document noted the importance of ensuring that workers are equipped with the necessary skills, including through education, and called for governments to improve knowledge and statistical capacity on job trends, developments and constraints, and to integrate relevant data into national statistics (UNGA 2012).

The 2030 Agenda for Sustainable Development reiterated the need to: (i) develop capacity in developing countries to support national plans to implement all of the Sustainable Development Goals, including through North-South, South-South and triangular cooperation (Target 17.9) by 2020; and (ii) enhance capacity-building support to developing countries, including for least-developed countries and small-island developing states, to significantly increase the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts (Target 17.18) (UN. n.d.).[56]

Recommendations for building needed capacity

The UNCSD Outcome Document provided the following suggested approaches to build needed capacity:

1. Enhancing international cooperation through technical assistance,[57] technology transfer (as mutually agreed), capacity building and training programs.
2. Employing communications technologies, including connection technologies and innovative applications, to promote knowledge exchange, technical cooperation and capacity building for sustainable development.
3. Recognizing that effective governance at the local, subnational, national, regional and global levels representing the voices and interests of all is critical for advancing sustainable development, and strengthening the institutional framework for sustainable development, including, among others:
    a. Promoting the science-policy interface through inclusive, evidence-based and transparent scientific assessments, as well as access to reliable, relevant and timely data in areas related to the three dimensions of sustainable development, building on existing mechanisms, as appropriate.

56 The 2030 Agenda is available at: https://www.un.org/sustainabledevelopment/development-agenda/.
57 In the case of Vietnam, technical assistance is through bilateral donors and not grant financing for the country.

b. Enhancing evidence-based decision-making at all levels and strengthening ongoing capacity building for data collection and analysis.

4. Mobilizing funding from a variety of sources, public and private, bilateral and multilateral, including innovative sources of finance.
5. Identifying options for a facilitation mechanism that promotes the development, transfer and dissemination of clean and environmentally sound technologies by, inter alia, assessing the technology needs of developing countries, options to address those needs, and capacity building (UNGA 2012).

4.2 Capacity needed for Vietnam's Marine Strategy

Generally, the potential to develop a sustainable marine economy or blue economy is constrained by, among other things, inadequate human, institutional and technical capacity. There is a need to invest in the human capital required to harness the employment and development benefits of investing in blue economy sectors. The main objective of capacity building for Vietnam is to build a cadre of marine economy specialists (and specifically blue economy) to support priority sectors within the framework of its marine strategy. Capacity building efforts for the established sectors will focus on strengthening existing capacity, for example, with training programs on new approaches to resource/sector management. Capacity building for new and emerging activities, such as renewable energy, may require developing human resources from the bottom up. Capacity needs assessments for both types of sectors would establish specific capacity building needs for the short and long terms.

The achievement of the general and specific objectives of Vietnam's marine strategy by 2030 (focusing on an ambitious vision by 2045) necessitates a common understanding and ownership of those objectives and vision among all concerned. This requires a clear **identification of all key stakeholders; the respective role of each in the implementation of the marine strategy**; the resources, capabilities, and core competencies they can offer; as well as their strengths and weaknesses, and the opportunities and threats that they face (see Box 3 below for a list of stakeholders). A stakeholder analysis would provide an initial basis for target groups in need of further needs assessment for capacity building/strengthening. The importance of a stakeholder analysis becomes clear as the Government of Vietnam develops a plan for an efficient and effective implementation of the Marine Strategy, leveraging the core competencies of each stakeholder organization.

Capacity assessment is a key step that is essential to crafting a capacity-building program to support the implementation of Vietnam's Marine Strategy. In addition to identification of existing capacity and gaps, it could also lead to the identification of existing capacity-building programs in Vietnam that could be adapted or expanded accordingly, as well as information that can be used in identifying priority areas for short- and long-term implementation.

Box 3: Stakeholders and stakeholder organizations that could be involved in the implementation of Vietnam's marine strategy

- National level: Ministries, ministerial-level agencies, and central government agencies with marine and coastal related mandates[58]
- Provincial/local levels: Coastal provinces (28), coastal districts (145) and communes (Nguyen and Ngoc 2015)
- Development partners
- Private/business sector: Tourism service operators; fishers and fisher organizations and aquaculture companies; maritime transportation and logistics service operators; investment firms; renewable energy companies; offshore oil and gas companies; and others
- Non-government organizations[59]: International and national/local
- Research and academic institutions, and think tanks
- General public: Including the 70 percent of population that lives in coastal areas and low-lying deltas (GFDRR 2015)
- Media: State-controlled media (VTV, print media, radio), as well as journalists, bloggers and other internet/social media (BBC 2018)

4.3 Examples and insights from international experience

The following describes various capacity-building efforts at the global, regional, national, and sub-national levels that are relevant to the specific objectives of Vietnam's marine strategy. Lessons and insights are identified from international experience that address the capacity needs identified by the Vietnamese informants.

4.3.1 Marine and ocean governance/management

What capacity is needed. The Marine Strategy is grounded in the principles of integration at all levels, harmonization of economic and natural ecosystems, equitable participation, and other sustainable development principles. Achieving the objectives of the Marine Strategy requires the application of principles and approaches prescribed to achieve global as well as national sustainable development targets on oceans, including integrated coastal management, ecosystem-based

58 See list of national-level organizations in the composition of the National Steering Committee on the implementation of Vietnam's marine strategy

59 The number of NGOs operating in Vietnam (not necessarily working on marine issues) was estimated to be 800 in 2010, according to Vietnam Online.

management (UN 1992, 2002), and marine spatial planning[60].

Whose capacity needs to be built/strengthened. All stakeholder groups concerned must have a common threshold of understanding of these principles and approaches, including how they can be applied in their respective sectors within the framework of the marine strategy in coastal areas, the exclusive economic zone (EEZ), and in marine areas beyond national jurisdiction[61]. Existing national (MONRE and other concerned ministries) and sub-national (provincial government agencies) capacities in these approaches have to be assessed and gaps identified as part of a capacity-building program to support the implementation of the Marine Strategy. Capacity for raising public awareness, marine spatial planning, and fostering partnerships are among the priority capacities that need to be developed in this area. More specific information on capacity needs in marine spatial planning and in inter-agency coordination are provided in Chapters 2 and 3.

Lessons learned and insights

Successful capacity-building approaches in marine and ocean governance pioneered by the US, PEMSEA, EU and other regional initiatives are well-documented and could be adapted to fit the Vietnamese context. A particular lesson from the EU indicates that in order to accelerate the development of MSPs, capacity building in all dimensions of the MSP process must be carried out. See Annex E for information on capacity building initiatives in marine and ocean governance and management from the US, PEMSEA, and the EU and Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO).

4.3.2 Implementing marine economy initiatives

What and whose capacity are needed. In order to establish sea-based industries that would contribute about 10 percent to the national GDP (with the economy of the 28 coastal provinces and cities making up 65-70 percent of Vietnam's GDP), the country has to develop and strengthen its capacity for blue economy (i.e., by proposing and implementing marine economy projects).

At the individual level, capacity is needed among marine economy program/project implementers (managers and staff at the national and provincial levels) in entrepreneurship, business development, economics and financing – including trade-off analysis, operations management, marketing, and corporate strategy – in addition to capacity in sectoral and cross-sectoral ocean and coastal management. In particular, capacity is needed in decision-making and the use of decision-making tools such as computable general equilibrium models in selecting and prioritizing marine

60 There are international prescriptions for marine spatial planning but MSP is used in conjunction/as a tool for ICM and EBM.

61 Although the marine strategy does not mention it, it is to be assumed that Vietnam has to develop its capacity to participate in the management of marine areas beyond national jurisdiction in order to protect its interests in Areas Beyond National Jurisdiction. See Cicin-Sain et al. (2018) for a reference on capacity building in those areas.

economy projects[62]. Additionally, capacity is needed to evaluate the potential and value of Vietnam's important marine resources and ecosystem assets, including capacity for resource assessment and economic valuation. Other specific skills and knowledge needed by project proponents and managers may include: economic drivers of markets, causes of market and policy failures, protected areas finance, conservation trust funds, debt-for-nature swaps, public-private partnerships, tourism-based mechanisms, public budgeting processes, and leveraging private and multilateral donor funds (CSF n.d.).

At the organizational level (MONRE/other ministries and provincial government agencies), capacity is needed in transitioning to an organizational culture that embraces integration, connectivity, sustainability, and resilience. Capacity is needed for the development of an organizational structure, policies, and procedures, including the development of long-term financing strategies in line with the organization's role in the implementation of the marine strategy, as a framework within which marine economy projects are implemented.

At the societal/community level (coastal communities involved in marine economy projects), capacity is needed towards increased public awareness and engagement/participation in the implementation of blue economy initiatives. At the enabling environment level, capacity is needed for regulations and strong enforcement of standards to support the competitive advantage of marine economic sectors (e.g., tourism and marine services: establishing high-quality sea resorts in coastal areas and developing marine tourism products).

Capacity assessment in blue economy should identify: (i) gaps between available educational programs and capacity needs; (ii) lack of communication and cooperation between educational institutions and sectors; (iii) lack of attractiveness and awareness of career opportunities in the

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Insights and observations:

- Since countries have just started to implement blue economy initiatives, there is limited international experience from which to draw lessons to inform capacity building in marine economy in Vietnam. In the Seychelles, the use of public-private partnerships in capacity building has been shown to be a viable approach that facilitates the inclusion of hands-on and on-the-job training components in capacity-building programs of different target groups.
- Regional capacity-building initiatives in blue economy (e.g., in the EU, Pacific, and East Asia) have been designed to serve a dual purpose: a) Develop capacity among countries within a certain region based on common capacity needs following the same levels and standards; and b) Ensure that policies that embody blue economy principles and standards are applied consistently among countries across the regions.
- Based on testimonies from 12 participants, the Pacific Ocean Finance Fellowship Program (2019-2020) has helped them learn and apply finance solutions to oceans issues in practical ways going forward, through of a series of five-day training workshops, project mentorship, sharing among participants about their marine economy projects, and exchange of information regarding finance tools and other resources (Sanin 2019). The Fellowship Program, which was financed through a partnership among the Conservation Finance Alliance, Wildlife Conservation Society, the Pacific Islands Forum Fisheries Agency, and the Office of the Pacific Ocean Commissioner, provides an example of a successful model of financing capacity building in implementing blue economy initiatives (CSF n.d.).

See Annex E for information on capacity building initiatives in implementing marine economy initiatives from the Seychelles, US, East Asia, EU, and the Pacific.

4.3.3 Marine science and technology

Capacity needed. Vietnam's marine strategy is explicit in its desired approach of making full use of advanced scientific and technological achievements in order to attain leadership in this aspect among Association of Southeast Asian Nations (ASEAN) countries. Vietnam aims to promote training and development of marine human resources, forming a contingent of highly-qualified and skillful marine science and technology personnel. In addition, Vietnam has to respond to the challenge of appropriate transfer of marine technology. The Intergovernmental Oceanic Commission of UNESCO has issued criteria and guidelines on the transfer of marine technology for developing countries as a tool for potential suppliers and users of technology. In addition, capacity is also needed in data management and sharing at the national, regional and provincial levels. Capacity in marine scientific research and adoption of marine technology is particularly needed to support the following: prevention, control and reduction in marine pollution, especially in marine plastics; planning and construction of coastal economic zones, industrial parks and urban areas in a

sustainable, ecological and smart manner and adaptable to climate change and sea level rise; and the establishment and management of marine and coastal conservation zones.

Vietnam is highly vulnerable to the impacts of climate change, yet its fast-growing economy and its future climate policy plans are dominated by fossil fuels. Vietnam's Nationally Determined Contribution (NDC) target is considered "critically insufficient" in reaching a "fair" approach to climate policy in line with the Paris Agreement's 1.5°C limit. If the country were to give up substantial coal-fired power generation in favor of a shift to renewable energy, Vietnam could become a leader in Southeast Asia (Climate Action Tracker 2019). Vietnam could potentially learn from countries that are incorporating ocean-based or nature-based mitigation and adaptation measures into their NDCs, and could also benefit from transfer of appropriate technology in these areas (e.g., like Indonesia.) Coastal Blue Carbon, a manual for measuring, assessing and analyzing carbon in the field and in the laboratory has been developed by the Blue Carbon Initiative (2019). There are also examples of efforts to streamline climate mitigation and adaptation as well as disaster risk preparedness into marine conservation efforts, including through green infrastructure, which could inform Vietnam's capacity building in these areas (UNEP 2019, PreventionWeb 2020).

Lessons learned and insights

- There are existing institutional frameworks for capacity building in marine science and transfer of marine technology in various countries and regions (e.g., ASEAN, Australia, New Zealand) from which Vietnam can benefit. Planning capacity building in marine science and transfer of marine technology within the framework of international cooperation would facilitate the adoption of best practices and technology as well as take advantage of financing and other resources available from regional/international initiatives (see information on capacity building needs in Chapter 6 on International Cooperation).
- The application of proven concepts of environmental valuation developed and applied in the US and elsewhere could help establish the viability of marine economy initiatives, as they provide a better information base for decision-making.
- The usefulness of an ocean data portal in regional ocean planning has been demonstrated in the US Mid-Atlantic ocean planning process, in which the interactive data portal became a repository of stories, data and mapping in support of the planning process, including identification of ecologically important marine habitats for conservation, monitoring of ocean acidification, and survey of recreational fishing.
- The participation of local communities and individual citizens in marine conservation, especially in citizen science, are key to implementation success in marine conservation, as demonstrated in the US National Estuarine Research Reserves System (NERRS) program and in the ***satoumi*** approach in Japan.

See Annex E for information on capacity building initiatives in marine science and technology from Australia, India, Indonesia, Japan, Malaysia, US, and ASEAN.

4.4 Recommendations for Vietnam

To achieve the specific objectives of the Marine Strategy, Vietnam has to develop and/or strengthen capacity at the national and sub-national level. Information derived from interviews of Vietnamese government and civil society experts indicates specific capacity needs, which are described below. However, in the short term, it is important for Vietnam to initiate a capacity building assessment to identify and prioritize capacity needs at the individual, organizational, societal and enabling environment levels to support the development of a blue economy and deliver the Marine Strategy's Specific and General Objective by 2030. Experts' opinions indicate the capacity needs are as follows:

1. **Marine and ocean governance:** The contemporary approaches in ocean and coastal management governance (i.e., integrated and ecosystem-based management and marine spatial planning) are still not applied effectively in Vietnam. In particular, marine spatial planning is a fairly new approach in ocean governance in Vietnam for which capacity has to be built at various levels. Staff of MONRE and other relevant ministries, as well as provincial level agencies who will be involved in the process of marine spatial planning, need to acquire the knowledge and skills to carry out MSP and develop the plans; while the National Assembly needs to understand how MSP works in order to review and approve the marine spatial plans effectively. For the marine strategy to succeed, cross-sectoral as well as intergovernmental coordination has to happen. Since VASI plays a major role as the coordinating body/secretariat of the National Steering Committee, VASI has to build capacity in formulating and implementing coordination mechanisms, and in the day-to-day functioning of a coordinating body (e.g., organizing NSC meetings, preparing policy briefs, drafting decisions and developing guidelines).

2. **Implementing blue economy initiatives:** The concept of blue economy is not well understood or applied consistently in Vietnam. All stakeholders in ocean and coastal management and governance (government and non-government, national and sub-national) need to develop a shared and long-term vision for the marine economy.

   MONRE, specifically VASI and other members of the NSC, as well as provincial-level agencies, need to develop the knowledge and skills required to design and implement multi-sectoral initiatives that take blue economy principles and approaches into consideration, taking existing ICM initiatives to the next level and mainstreaming blue economy initiatives into national economic development plans. This includes recognizing that up to the present marine economy initiatives, combined with marine resources conservation and marine environment protection in the country, have been ineffective.

   Project proponents and lead agencies (whether central government, provincial government or marine sectors) need to have the knowledge and ability to prepare blue economy propositions in a format and with the level of detail that investors need, while also recognizing the novelty of some cross-sectoral investment projects, for example, fisheries recovery or sustainable aquaculture growth linked to ocean wind energy.

   The private sector needs to understand how blue economy works in order to collaborate effectively with government agencies on new initiatives, as well as develop a perspective and vision of marine economy as an investment opportunity in which to develop blue economy products that are competitive in the marketplace.

For society and coastal communities, public awareness and education at all levels and engagement/participation in blue economy implementation are needed, which is particularly important because planning at the national and provincial levels depends on how well specific needs/wants for blue economy initiatives are articulated by various stakeholders.

3. **Marine science and technology:** It appears that the transfer and application of scientific and technological advances to support marine economic development remains weak in Vietnam. Also, there is no long-term marine technology and transfer program established to support marine economy sectors, and specifically blue economy. In addition, although the country has accumulated scientific data on the natural resources of seas and islands on which to base ocean and coastal management and conservation decisions, these are not complete or need to be updated as well as augmented with current socioeconomic data on which to base blue economic development proposals (e.g., general, industry, and competitor environments). Moreover, data have to be managed such that more data can be added and accessed freely on demand (there is a need for databases). Capacity to undertake the above activities has to be developed. Building capacity in marine science and technology is needed to support MSP, blue economy, as well as the other specific objectives of the marine strategy (e.g., on climate change, marine conservation, marine pollution management, and disaster risk prevention).

Based on the preceding discussion on what capacity is needed to achieve marine strategy objectives and the lessons learned/new approaches used in capacity building efforts from international experience in those areas, as well as capacity gaps identified by Vietnamese government officials and other informants, the following recommendations on short-term and long-term capacity building are put forward for consideration:

- All stakeholders concerned in the implementation of Vietnam's Marine Strategy must have a common threshold of understanding of its principles, vision and objectives. Proven effective methods and approaches to achieve this objective have been pioneered by other countries such as the US and by regional organizations such as PEMSEA.
- Capacity needed at the individual, organizational, societal, and enabling environment levels to support the development of a blue economy and achievement of the Marine Strategy's Specific and General Objective by 2030 have to be identified and prioritized. Examples of best practices pioneered in the Seychelles and the Pacific Islands region may be adapted to suit the Vietnamese context.
- Since the implementation of the Marine Strategy will rely heavily on local governments (coastal provinces and districts), private sector partners or investors should be encouraged to commit to helping protect the environment as well as building local capacity. It is also important to highlight the roles of national governments in enforcing environmental laws, promoting policies that encourage private sector participation in the provision of public infrastructure, and providing the needed technical and financial assistance to local governments.
- Advancing education and skills development in marine economy could benefit from the input of various stakeholders as shown by the EU and Australian experiences, through extensive

market analyses and surveys. On the other hand, science, technology and innovation could be mainstreamed into citizens' ways of lives from developments achieved in academic domains (e.g., citizen science in US NERRS programs) to empower individuals and coastal communities to become ocean stewards.

- Vietnam has to develop the capacity for environmental valuation of ecosystem services and natural capital. These concepts, in combination with advances in natural sciences, provide better understanding of the interactions between the natural environment and human behavior, and the benefits that are captured (e.g., economic valuation of natural resources for coastal resource policymakers developed in the US).
- Vietnam can learn research and development from more advanced countries like Australia or New Zealand. Vietnam could benefit from technology already developed or explored in these countries, including on wave energy conversion systems, economic tidal power potential or sustainable aquaculture.
- If Vietnam were to give up substantial coal-fired power generation in favor of a shift to renewable energy, Vietnam could become a leader in Southeast Asia. A number of European countries (the UK, Germany, and Denmark) as well as China could provide examples of capacity development models in this area. Vietnam could potentially learn from countries that are incorporating ocean-based or nature-based mitigation and adaptation measures into their NDCs, including the US (NERRS program), Indonesia (Blue Carbon assessment), and Japan (***satoumi*** approach).

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CHAPTER V.

Mobilizing resources for priority investments and using public funds to leverage private financing

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To progress the implementation of the Marine Strategy, the Government of Vietnam is seeking options and pathways to unlock finance and increase investment in marine sectors and ecosystem management. The Marine Strategy articulates a broad scope for which investments are necessary:

- Marine sectors such as tourism, aquaculture and fishing, maritime transport and logistics, coastal industries, renewable energy, and oil and gas exploitation.
- Science and technology, infrastructure, and innovative practices in order to sustainably manage the marine and coastal resources.
- Human well-being and reduced environmental risks and pollution.

In the East Asian marine and coastal context, four elements have been identified to indicate what constitutes sustainable blue economy activity (PEMSEA 2015):

1. Protecting, restoring, and sustaining healthy coastal and marine ecosystem services
2. Generating sustainable, equitable economic benefit and inclusive growth
3. Integrating approaches between multiple industries and sectors
4. Innovating, informed by the best available science.

These elements are expressed throughout the Marine Strategy of Vietnam, either as objectives or desired outcomes. At present, there are no estimates of the total investment needs for implementing the Marine Strategy and the level of public sector funding available is not yet established. The government is interested in opportunities that generate investments in line with the objectives of the Marine Strategy. There is recognition that there are limiting fiscal circumstances for the government and that investments from non-governmental sources such as international partners and the private sector are needed to build investment readiness and capability for the development and execution of blue economy opportunities.[63] The plan to develop a Marine Spatial Plan, combined with the process for elaborating the socioeconomic development for the period 2020-2030, offers an opportunity for articulating priorities for investment and pursuing opportunities for accessing appropriate capital.[64]

5.1 Principles and frameworks for investment in the blue economy

The delivery and sustainable growth of the blue economy requires access to significant, long-term financing, but ***SDG 14 – Life Below Water*** continues to be an under-invested goal of the UN Sustainable Development Goals, especially by the private sector (Credit Suisse)[65]. According to Friends of the Ocean Action and Funding the Ocean (an online knowledge hub that tracks ocean finance[66]), a large proportion of investments towards blue economy development to date have

63 Direct communication with representatives of Ministry of Planning and Investment, MONRE and selected provinces.
64 The MSP process timeline is not parallel to the formulation of the SEDP/SEDS. As a result, the MSP will need to inform master planning processes to contribute to provincial engagements and inform the mid-term SEDP implementation review.
65 Note that the private sector does invest in established marine sectors such as fisheries. This is not considered blue economy if the fisheries are not sustainable.
66 For more details, visit: https://fundingtheocean.org/about/.

come from philanthropy (USD 8.3 billion) and official development assistance (USD 5 billion), particularly in emerging sectors (Friends of the Ocean Action 2018). Investment in marine science has been increasing according to the data trends captured by Funding the Ocean. Overall, the key areas for investment (by importance of investment to date) include:[67]

- Ocean and coastal waters;
- Marine science;
- Marine wildlife protection; and
- Fishing and aquaculture.

A broad range of instruments are used to make capital available for blue economy and (ocean) ecosystem protection and conservation. The selected list in Figure 11. ICM outcomes driving integration below covers a wide range of instruments with different levels of complexity and administrative requirements. Instruments like blended finance and climate bonds are often deployed to meet a public finance need, while instruments for mobilizing private finance included blended finance or equity (see also Table 8 on potential investment models).

Table 7. Financial instruments for investing in blue economy and conservation

Investment/ capital type	Description
Blended finance	Combining different types of capital from different providers with the aims of: • Increasing capital leverage (development finance and philanthropic grants are strategically used to attract/mobilize additional commercial finance) • Enhancing impact (the combined skill set, knowledge and resources of public and private investors can increase the scope, range and effectiveness of the project) • Delivering risk-adjusted returns (managing risks so that returns are in line with market expectations). The World Economic Forum identified potential to create USD 400 billion of investable fund capital per year by mobilizing private capital for the SDGs, using about 25 percent of annual flows from official development assistance, multilateral development banks, development finance institutions and foundations, through blended vehicles that have 3:1 ratios at the fund level (World Economic Forum 2015).

67 For more details, visit www.fundingtheocean.org.

Investment/ capital type	Description
Climate/ conservation/ impact bonds	Fixed-income financial instruments (bonds) in which capital is invested upfront in initiatives that deliver measurable outcomes (e.g., for climate and conservation). The need for verified outcomes is paramount since investors only get repaid against proven results. These bonds are used in carbon mitigation, blue carbon initiatives, and ecosystem restoration. One example is the Auckland Council Green Bond in New Zealand, which raised funds through a green bond instrument to fund electric trains and associated infrastructure.[68]
Blue bonds	Similar to green bonds, but applied to the blue economy. The Nature Conservancy launched the ***Blue Bonds for Conservation*** initiative[69] that will refinance and restructure debt for coastal and island countries, so long as those nations commit to protecting at least 30 percent of their near-shore ocean areas, including coral reefs, mangroves and other important ocean habitats.
Debt swap	Debt-for-nature swaps leverage funds for use in local conservation efforts and are based on the model of debt-for-equity swaps; proceeds are invested in conservation activities in the indebted country. It can also involve debt forgiveness. The Seychelles debt-for-conservation swap, involving the World Bank, is the most cited example, whereby conditions included development of a Marine Spatial Plan and protection of 30 percent of the marine waters. The instrument is intended for use in the context of developing countries. However, the tools used and aspects of enabling environments are insightful and can be used outside of a debt-for-nature swap. Learn more at: https://www.nature.org/en-us/about-us/where-we-work/africa/stories-in-africa/seychelles-conservation-commitment-comes-to-life/
Carbon schemes/ payments for ecosystem services (blue carbon)	Carbon credits are generated through a wide range of activities that sequester carbon. Blue carbon refers to sequestration in marine and coastal ecosystems (e.g., through mangroves, tidal wetlands, seagrasses, etc.). There are limited examples of these, however the field is growing fast since it can build on standards and tools from terrestrial carbon sequestration. Learn more at: https://www.climatefinancelab.org/project/blue-carbon-resilience-credit/

68 For more details, visit: https://www.aucklandcouncil.govt.nz/about-auckland-council/investor-centre/information-for-investors/Pages/green-bonds.aspx.
69 For more details, visit: https://www.greenbiz.com/article/blue-planet-nature-conservancy-unveils-16-billion-bid-save-oceans.

Investment/ capital type	Description
Conservation funds (hybrid model)	Grant-making entities that provide finance for conservation activities. They are capitalized by governments, foundations and the private sector. Often there is no expectation of return, and therefore the funds can support higher-risk projects with less certain outcomes. See: PROBLUE: https://www.worldbank.org/en/programs/problue The Reef Conservation trust: https://www.environment.gov.au/marine/gbr/reef-trust

Investor consultation and surveys outline a range of issues that have prevented greater investment commitment in the blue economy (GIIN 2018, Credit Suisse 2020):

- Limited understanding and recognition of the blue economy (what it is, how it is measured/ valued, and investability)
- Lack of well-developed investment opportunities and investment pipeline
- Limited track record of project proponents
- Limited government support and unsuitable policy frameworks to support blue economy investment markets (e.g., standards for green or blue bonds)
- Limited experience with new investment models (blue bonds and blue carbon)
- Limited practice to account for ocean risks in investment analysis
- Lack of appropriate deal structures and exit strategies.

To enhance robustness and facilitate investment in the blue economy, a set of ***Sustainable Blue Economy Finance Principles*** have been developed as result of an initiative led by the European Commission, European Investment Bank, WWF and The Prince of Wales's International Sustainability Unit. The principles are targeted at the investment and finance sectors, but are applicable and can be used as guidance by those developing investment projects, including governments. They are informed by environmental, social and governance finance principles and the goal is to create long-term value while mitigating impact on marine ecosystems, reducing carbon emissions, and enhancing the livelihoods of people who depend on the ecosystems (European Union 2018).

UNCTAD has developed an Investment Policy Framework that provides options for the design of provisions in investor agreements with an analysis of sustainable development implications:

1. Incorporating concrete commitments to promote and facilitate investment for sustainable development through, for example, concrete facilitation mechanisms (information sharing, investment promotion forums); outward investment promotion schemes (insurance and

guarantees); joint investment promotion initiatives; and technical assistance and capacity-building initiatives targeted at sustainable investment.

2. Balancing State commitments with investor obligations and promoting responsible investor obligations to deter investor non-compliance with domestic laws. In addition, international investment agreements could refer to commonly recognized international standards and support the adoption of corporate social responsibility standards.
3. Ensuring an appropriate balance between protection commitments and regulatory space for development. Countries can safeguard the right to regulate by clarifying the scope and meaning of treaty provisions, such as the fair and equitable treatment standard and expropriation, and by using specific flexibility mechanisms such as exceptions and reservations.
4. Shielding host countries from unjustified liabilities and high procedural costs through treaty design involves looking at options both in the way investment dispute settlements are conducted and in the scope and application of substantive clauses.

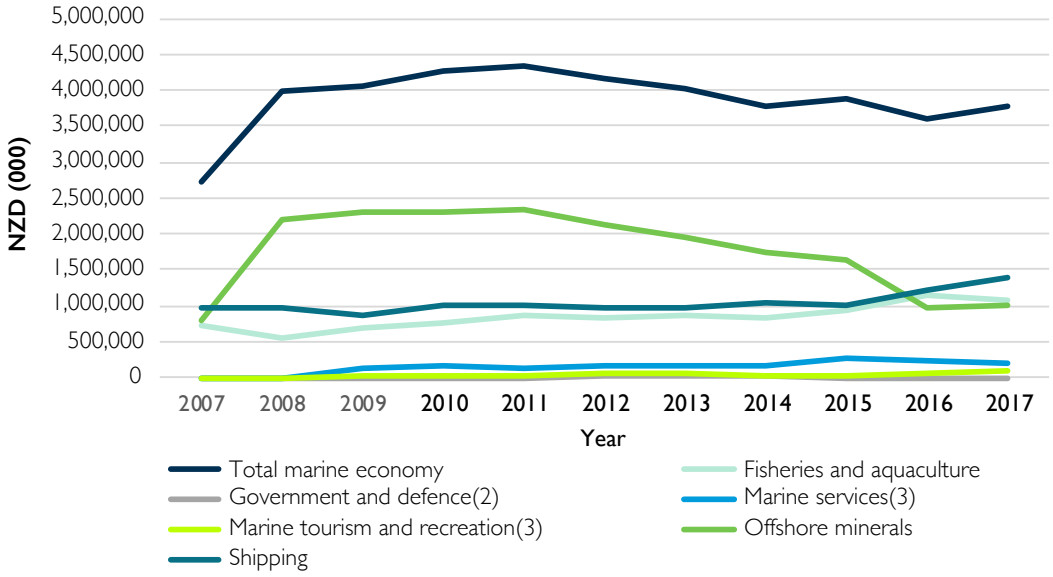
5.2 A dynamic investment landscape and models

There are sustained initiatives by development finance institutions, multilateral agencies, NGOs and intergovernmental organizations to advance investment readiness through building knowledge and capacity on the ground, as well as by providing direct investment through innovative mechanisms.[70] Regional cooperation and multilateral partners provide a wide range of opportunities for Vietnam to strengthen capacity and strategically pursue investment in blue economy opportunities (see Chapters 4 and 6 of this report for additional opportunities and relevant models of Capacity Building and International Cooperation). Examples of investment initiatives are included in the Resources section.

70 For an extended list of investment actors, please refer to Whisnant and Vandeweerd (2019), Catalyzing Private Sector Investment in the Blue Economy (PEMSEA).

5.2.1 Leveraging government resources to support economic development: New Zealand case study

New Zealand does not have a marine strategy or a blue economy strategy to help guide investments into blue economy opportunities. Instead, the country fosters investment in specific sectors that make up the marine economy through public grant and loan funding that leverages private sector investment. It is estimated that around 3 percent of GDP in the economy is related to blue economy, with a total of 7.4 billion New Zealand dollars (NZD) directly related to sectors that rely on the maritime area and generate employment of nearly 70,000 people (equivalent to 3.3 percent of total employment in New Zealand) (Market Economics 2019).



Source: Stats NZ, 2019

Figure 14. New Zealand's Marine Economy

In addition to investments in sectors and industries, the government makes targeted investment in science and research – such as the Sustainable Seas National Science Challenge[71], which includes an ongoing program of research on the blue economy. These investment programs are described below and are collectively, directly or indirectly, supporting marine industry growth and regional development in New Zealand.

71 For more details on Sustainable Seas National Science Challenge, visit: https://www.sustainableseaschallenge.co.nz.

Sustainable Food & Fibre Futures (administered by the Ministry for Primary Industries)

Sustainable Food & Fibre Futures[72] (SFFF) is a public-private investment program aimed at supporting New Zealand's economic growth while delivering environmental and social benefits through a blend of R&D and commercialization funding. Through a shared investment and risk approach between the government and private sector, the investment programs enable private entities to undertake ambitious, innovative and often high-risk programs that are expected to deliver significant long-term growth and economic benefits. Elements include:

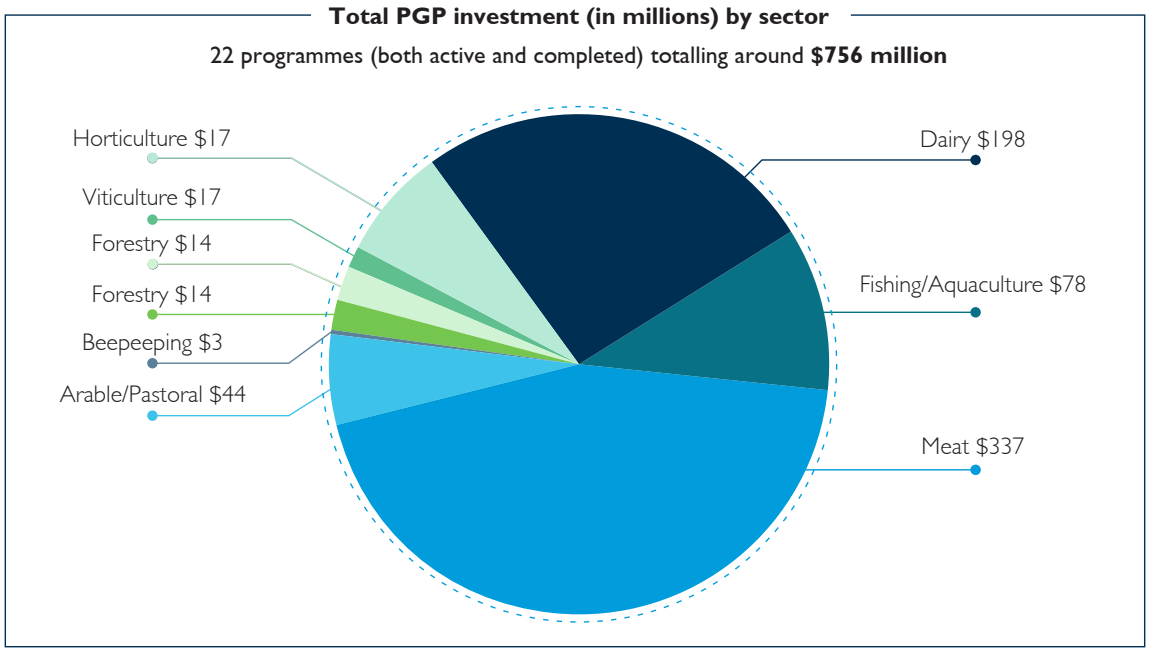
- A 'fast-fail' approach, which means that programs are screened at set stages during investment to determine failures or risks, and workstreams deemed unlikely to succeed are halted or adapted.
- A mix of public and private funding is required, with the co-funding element determined by the scale of investment sought, and type of private entity.
- Projects are expected to be a blend of research and commercialization, not research on its own.
- Because it is designed to accelerate change and support industry organizations and the private sector to go beyond business-as-usual in terms of innovation, investors have generally been large companies or industry organizations that are able to make significant investment commitments and undertake long-term investment programs (up to seven years).
- The projects are selected through a competitive process, supported by an independent expert group.
- All projects undertake independent mid-term and final evaluations.

A total of 24 programs have been funded since inception in 2011 and the total government and industry commitment is close to NZD 800 million over the life of the program (MPI 2019). The government's commitment represents slightly less than half of the program investment (under NZD 400 million) and the sector partners provided the difference.

An independent evaluation estimated that it will contribute around NZD 6.4 billion to New Zealand's GDP from 2025. This represents an estimated 32:1 return on the government's investment. Fisheries and aquaculture sectors represent over 10 percent of the investment portfolio (Source: New Zealand Ministry for Primary Industries Figure 15 below).[73]

72 For more details on Sustainable Food & Fibre Futures, visit: https://www.mpi.govt.nz/funding-and-programmes/sustainable-food-and-fibre-futures/primary-growth-partnership/.

73 For more details on Fisheries and Aquaculture investments, visit https://www.mpi.govt.nz/funding-and-programmes/sustainable-food-and-fibre-futures/primary-growth-partnership/current-pgp-programmes/.



Source: New Zealand Ministry for Primary Industries

Figure 15. Investment allocation by sector of the Primary Growth Partnership (PGP), 2019

Provincial Growth Fund

The Provincial Growth Fund (PGF)[74] is a NZD 3 billion investment program aiming to lift productivity and increase economic development opportunities of New Zealand regions through investment in skills, sectors and infrastructure, and job generation. The PGF applies a range of instruments to fund projects, including grants, loans and equity investments with a co-funding element required (the amount of co-funding depends on the investor type – public and non-profit entities require less co-funding).

Key areas of investment include:

- **Regional projects and capability**: to support regional development through investment in a range of smaller economic development projects; as well as feasibility studies for potential projects and initiatives to build skills, capability, and capacity in the regions.
- **Sector investments**: to drive regional development through investment in priority and/or high-value sectors that will make a significant contribution to a region's future growth potential in areas of comparative, or potential comparative, advantage.
- **Enabling infrastructure projects**: to invest in regional projects (identified both centrally and

74 For more details on the Provincial Growth Fund, visit: https://www.mbie.govt.nz/business-and-employment/economic-development/regional-economic-development/.

regionally) that enable regions to be well connected from an economic and social perspective, including rail, road and communications.

Whereas PGF is not focused solely on marine sectors or blue economy, a wide range of projects have been funded that involve marine sectors, especially tourism, fisheries, and infrastructure. PGF is administered by the Provincial Development Unit, part of the Ministry of Business, Innovation, and Employment (MBIE). The ministry has senior advisors located in the target regions that steer potential applicants through the process. Because the program was only established in 2018, its impact it is still to be ascertained. However, PGF is seen as a fresh approach for supporting regional development and job creation through combining capacity building, sector and infrastructure investment.

Sustainable Seas National Science Challenge

Sustainable Seas National Science Challenge[75] is a 10-year research program aimed at informing how to best develop New Zealand's marine economy, while protecting the marine environment and implementing ecosystem-based management. Sustainable Seas is one of the 11 National Science Challenges that were established in 2014 and represent a core investment in science. In total, over NZD 680 million will be invested to tackle the biggest science-based issues and opportunities facing New Zealand. NZD 80 million was committed to Sustainable Seas, allocated in two phases to universities, crown research institutes, and other research organizations. The research is focused on:

- Improving marine resource decision-making and the health of seas through ecosystem-based management; and
- Transforming New Zealand's ability to enhance marine economy into a blue economy.[76]

To qualify for investment, research requires a broad collaboration between research partners and interdisciplinary approaches that include biophysical science, economics, indigenous knowledge, social science, and policy. Stakeholder input and engagement is critical to ensure greater impact and uptake of the research outcomes. There is a specific blue economy workstream which is expected to contribute to the understanding of blue economy[77] and provide new knowledge and tools to advance restorative (blue) economies, seaweed opportunities, and coastal and marine eco-tourism. Other national science challenges also contribute directly or indirectly to research relevant to management and superior use of marine resources – for example, ***High Value Nutrition***.[78]

While science investments are not necessarily made with the purpose to mobilize capital, the expected knowledge and insights represent a critical step towards informing sustainability and ecosystem solutions, and developing viable investments for blue economy.

75 For more details on Sustainable Seas National Science Challenge, visit: https://www.sustainableseaschallenge.co.nz/ (accessed on June 16, 2020).
76 Sustainable Seas National Science Challenge defines blue economy as marine and coastal activities that "generate economic value and contribute positively to social, cultural and ecological well-being". Blue economy is therefore only a part of the marine economy.
77 For more details on the blue economy workstream, visit: https://www.sustainableseaschallenge.co.nz/our-research/blue-economy/ (accessed on June 16, 2020).
78 The High Value Nutrition National Science Challenge provides opportunities for marine-sourced inputs to replace land-based agriculture products in the food system and capture additional value-add.

Insights and observations:

- Blue economy investments can be enabled through competitive, grant-based programs that provide for co-funding and risk-sharing between the central and provincial governments, as well as the private sector.
- Regional/provincial development can be facilitated through targeted grants that are underpinned by economic development planning at the regional level (such as the SEDP in Vietnam). This can facilitate new and innovate solutions to local economic development and sustainable use of resources – as expressed in the Marine Strategy.
- For large investment projects, planning and funding over multiple years (e.g., PGP or SFFF in New Zealand) should be considered. This is especially important when uncertainty about outcomes exists and projects have elements of R&D and commercialization.
- R&D capability among implementors, especially in the private sector, needs to be considered in the design of knowledge-led government grants funding (for instance, New Zealand's PGP model was not easily accessible to smaller businesses).
- Independent, expert input and robust monitoring and evaluation are critical to public investment programs.

5.2.2 Marine science investment for industry growth and sustainability: Australia case study

According to the Marine National Science Committee, Australia's traditional marine industries (fisheries, oil and gas, shipping, tourism) are expected to contribute around AUD 100 billion per year to the country's economy by 2025. A further AUD 25 billion will be generated from ecosystem services like blue carbon, bio-products, nutrient cycling and coastal protection (MNSC 2015). Emerging sectors like ocean renewable energy present a major development and investment opportunity while also contributing to Australia's climate commitments. To realize the benefits of the blue economy, Australia is focusing on addressing the complex challenges of energy and food security, maintaining marine sovereignty, adapting to climate change, protecting biodiversity and ecosystems, and balancing resource use and allocation (MNSC 2015).

The management of the ocean and marine resources is guided by the Ocean Policy 1998 which contains principles of integrated and ecosystem-based management. Marine Bioregional Plans were created after a relatively long planning process and the government has provided significant investment to enhance monitoring systems and methods to improve understanding of ecological systems for the major marine bioregions and the benefits they generate.[79]

79 For further reading, see: Australia's Oceans Policy: Past, present and future (2015). Journal of Marine Policy.

Marine National Science Plan: investment in science underpinning the development of Australia's blue economy

Investment in research and development is considered critical for delivering the knowledge and technology that the blue economy requires. Under Australia's Marine National Science Plan (MNSP) it is estimated that the AUD 450 million annual investment in marine sciences helped deliver AUD 47.2 billion per annum of blue economy revenue (MNSP 2015). The blue economy is expected to grow at three times the average growth rate for Australia's GDP.

The MNSP made the case for greater investment in science and capability over a decade (2015–2025) with a focus on a number of priority initiatives for future investment that are key to blue economy development:

- A National Blue Economy Innovation Fund
- A National Marine Research Infrastructure
- A National Marine Baselines and Monitoring Program
- A National Integrated Marine Experimental Facility
- A National Ocean Modelling Program
- A Marine Science Capability Development Fund.

The investment required is sought through broad cooperation and commitments from federal, state, marine sectors and science.

Framework for investment prioritization at ecosystem level: Reef 2050 Long-Term Sustainability Plan

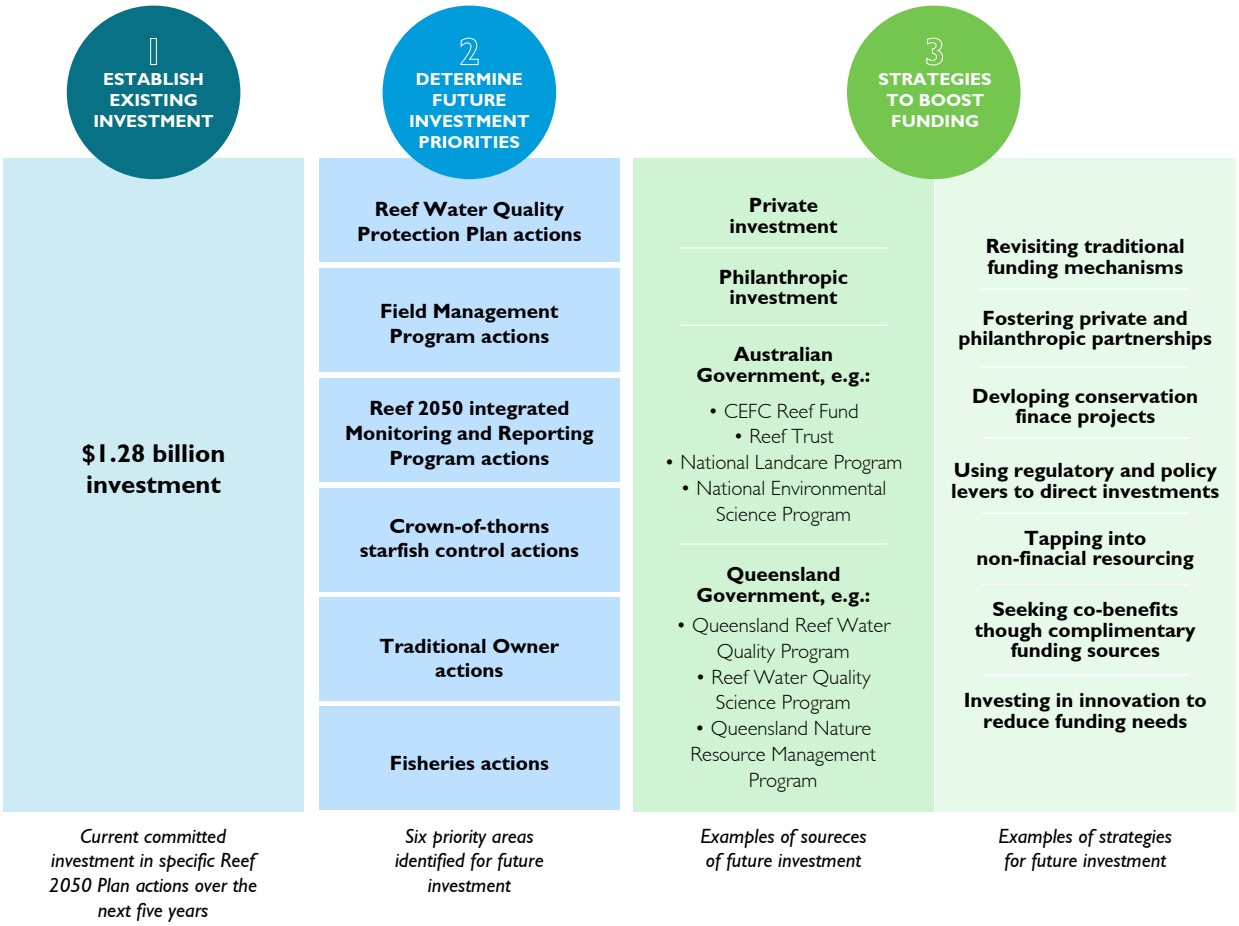
In 2015, the Australian and Queensland governments released the ***Reef 2050 Long-Term Sustainability Plan***, which was developed in partnership with stakeholders to improve the long-term health and resilience of the Great Barrier Reef.

- The implementation of the Reef 2050 Plan was developed using the International Union for Conservation of Nature (IUCN)'s adaptive management cycle and is underpinned by a public investment framework aimed at boosting investment and diversifying sources of funding.
- Prioritization processes are based on lead agency data and information from stakeholders and advisory bodies in order to identify the most crucial funding needs for investment (Figure 16).

The Reef 2050 Advisory Committee and Independent Expert Panel worked with government agencies to agree upon priorities for investment based on return on investment for reef health. A ***Reef Trust*** was established as a mechanism for direct funding towards restoration. However, other innovative investment mechanisms are considered, including conservation finance.

The eReefs Project was established as a state-of-the-art monitoring system to generate visualization, communication and reporting tools for the Great Barrier Reef, and thus meet ecosystem monitoring needs as well as impact measurement for investments.[80]

80 For more details on the eReefs Project, visit: https://ereefs.org.au/ereefs/about.



Source: Reef 2050 Plan

Figure 16. Key results of the Investment Framework for 2015–2020

Leveraging blue carbon for ecosystem restoration: South Australia strategy

At state level, the Blue Carbon Strategy of South Australia is an example of an initiative focused on ecosystem restoration that also falls into the blue economy spectrum. The goal of the strategy is to unlock finance for restoration and climate resilience activities through access to carbon markets and other financing mechanisms and to use blue carbon as a driver for improved policy and planning processes. This includes green bonds, carbon credits through offsetting and insetting, or payments for ecosystem services.

International development in support of blue economy: *InnovationXchange* and the *Aquaculture Challenge*

Australia's Department of Foreign Affairs and Trade's ***InnovationXchange*** launched the ***Blue Economy Aquaculture Challenge*** as an experiment for increasing capability and providing support for pre-investment

ideas in the field of sustainable aquaculture. The ideas selected as 'Aquacelerators' were guided through pathways to bring the concepts to commercial reality. The program offered those in the sector the opportunity to connect with potential investors and advisors to accelerate their impact and growth.

Insights and observations:

- Blue economy is knowledge intensive and investment in science and data is required as a pre-requisite for informing and attracting investment in blue economy sectors – including the use of new and innovative finance mechanisms such as conservation finance or blue carbon.
- A strong focus on the economics and valuation of market benefits of the marine and coastal environment as well as non-market benefits (e.g., natural capital, ecosystem services such as carbon sequestration) is critical to articulate investment needs and opportunities. This includes assessment of the marine economy (total economic value and benefits to society) to articulate the importance of the sector and identify appropriate investment metrics. Science can leverage this for investment and capacity-building purposes.
- To support blue economy investment, systems and frameworks that connect knowledge and tools about biophysical and social marine science to finance and investment need to be made available/created.
- Science investment can be used to generate critical knowledge for marine spatial planning and integrated coastal management – with potential for leveraging future blue economy opportunities and commercial investment.
- Science and research have a critical role in the development of policies and plans, and their implementation. Input from the science community needs to be considered early in planning processes.
- Intra-sectoral solutions (e.g., co-locations of aquaculture and offshore renewable energy) are expected to be effective models for capturing blue economy opportunities. Such solutions can help enhance collaboration between government, science and the private sector as well as between central and state-level governments.

5.2.3 Mobilizing finance for blue economy: EU approach

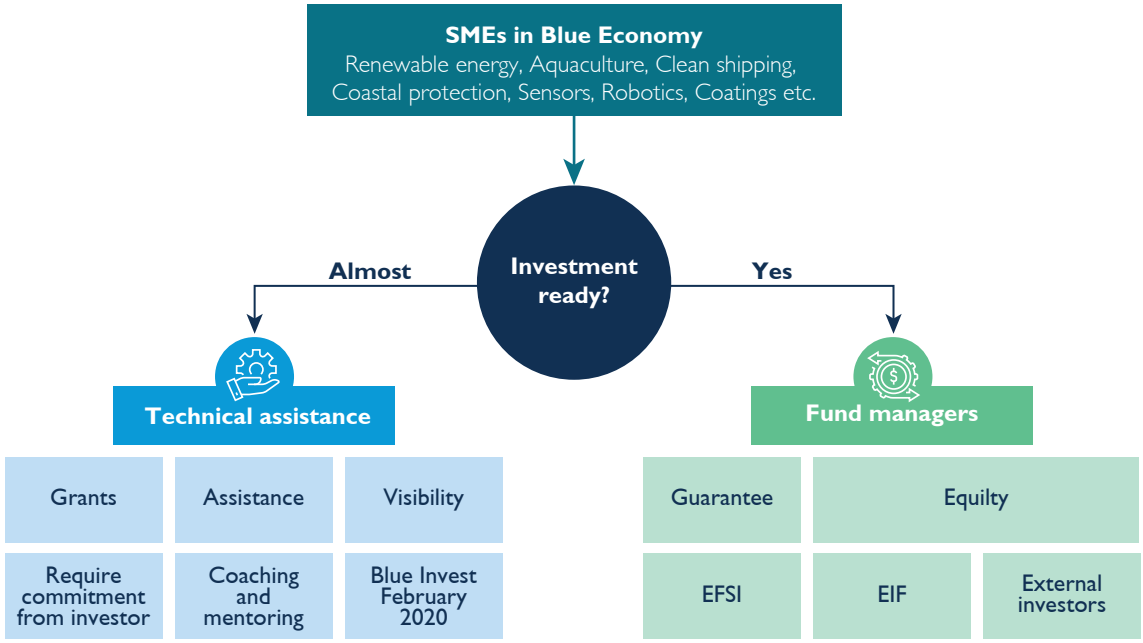
At the European Union level, new mechanisms are being applied to leverage investments by EU institutions with investment from private sources and other public organizations, including member states governments (EU 2020). The EU's Blue Economy Report for 2020 states that since projections indicate that the blue economy will play a crucial role in meeting targets for greenhouse gas emissions and biodiversity, investment support from the EU is expected to increase, with the

aim to accelerate recovery and measures under the Green Deal.[81][82]

The European Fund for Strategic Investment (EFSI) – which was established after the financial crisis in 2008 - has contributed over 1.4 billion Euros (EUR) in funding to EUR 8 billion worth of offshore wind projects as well as other blue economy initiatives like port development and (green) shipping. The InvestEU Fund which succeeds EFSI will support four policy areas and aim to trigger over EUR 650 million in investment:

- Sustainable infrastructure;
- Research, innovation and digitization;
- Small and medium businesses; and
- Social investment and skills.

In recognition of the importance of small and medium enterprises in the blue economy and in order to address the challenges of access to finance, the European Commission and the European Investment Fund (EIF) established the BlueInvest Platform for SMEs in 2019 (Figure 17). The platform offers a package of measures, from coaching for investment readiness to grants up to EUR 20 million, conditional on letters of intent from public or private investors. In addition, EUR 75 million worth of liquidity was made available from EIF, with a 95 percent guarantee from EFSI, for investing equity in funds specializing in blue economy and companies specialized in blue solutions.



81 The EU Blue Economy Report 2020 is available at: http://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/2020_06_blueeconomy-2020-ld_final.pdf

82 For more on the European Green Deal, visit https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en.

Source: European Commission. 2020

Figure 17. BlueInvest platform for SMEs

The European Investment Bank (EIB), the EU's climate bank, established the **Clean and Sustainable Ocean Programme,** a two-pronged initiative comprising the Blue Sustainable Ocean Strategy (Blue SOS) and the Clean Oceans Initiative. Blue SOS aims to improve the health of oceans, build stronger coastal environments and boost blue sustainable economic activity. EIB aims to increase lending to sustainable ocean projects to EUR 2.5 billion and mobilize at least EUR 5 billion over the period 2019-2023 (EIB n.d.).[83] Target sectors include:

- **Sustainable coastal development**: Projects that protect coasts from flooding and erosion, rehabilitate degraded coasts, restore coral reefs and improve water quality.
- **Sustainable seafood production**: Projects that help businesses produce seafood sustainably. This can include fisheries, aquaculture or the processing and preservation of seafood.
- **Green shipping and port infrastructure**: Projects that reduce emissions in the shipping industry, such as new ships that use less energy and cleaner fuels.
- **Blue biotechnology**: Projects that support new marine biotechnology products, such as medicines, enzymes, biosensors and ingredients for food.

The Clean Oceans Initiative is aimed at providing lending of up to EUR 2 billion over the period 2018-2023 to public and private sectors for projects that reduce pollution in the oceans, with a particular focus on plastics (EIB 2020).[84]

5.2.4 Monitoring and disclosure

A common feature across all of the initiatives to mobilize investment for blue economy is the use of monitoring and standards to manage the environmental and social impact of investments and to identify and guide investments towards blue economy opportunities. This interest is shared by those seeking to invest capital as well as those that need investment to support transition to blue economy and the emerging opportunities (Credit Suisse 2020). It is also enabled by the increased ability and practice of measuring and accounting for natural capital and marine ecosystem services by government and the private sector. The **System of Environmental-Economic Accounting (SEEA)** proposed by the United Nations provides methodological guidelines for setting up natural capital accounts linked to the system of national accounts. SEEA is implemented by governments and an example is the World Bank led Wealth Accounting and Valuation of Ecosystem Services (WAVES) global partnership[85]. A **technical guidance on ocean accounting** is currently under consultation and will provide governments with a framework for accounting for marine assets and their services to the economy (Global Ocean Accounts Partnership 2019).

83 For more on the EIB's work, visit: https://www.eib.org/en/about/initiatives/preserving-our-oceans/index.htm.
84 For more on the Clean Oceans Initiative, visit: https://www.eib.org/en/publications/the-clean-ocean-initiative.
85 For more on the WAVES partnership, visit: https://www.wavespartnership.org.

While investment in blue economy and ocean assets is still in early stages, there are three intertwined drivers that help increase the need for and experience with monitoring and evaluation of outcomes and impact in blue economy investments and wider sustainable development:

- The growth of **environmental, social and governance (ESG)** practice and standards in private and government sectors
- **Regulatory pressure**, including increasing mandatory requirements for financial markets to disclose non-financial risks
- **International commitments** such as those under the Paris Agreement or the 2030 Agenda for the SDGs.

The interest in ESG disclosures is driving change in the practices and risk management of financial market players and within the marine economic sectors themselves. The process of taking due account of **ESG considerations** in investment decisions in the financial sector is broadly referred to as sustainable finance. Environmental considerations include climate change mitigation and adaptation, biodiversity protection, pollution prevention and circular economy. A recent investor survey found that three-quarters of investors have not assessed the impact of their investment portfolios on ocean sustainability, and a fifth are completely unaware of ocean-related risks to the value of their investments.

Global initiatives such as the **Task Force on Climate-related Financial Disclosure**[86] and the **Portfolio Decarbonization Coalition**[87] are encouraging institutional investors to assess, mitigate and disclose their climate-related risks across a wide range of sectors. The International Platform on Sustainable Finance (IPSF) was launched in 2019 with the objective to help scale up the mobilization of private capital towards environmentally sustainable investments. It is a forum to strengthen international cooperation and coordination on approaches and initiatives for the capital markets (such as taxonomies, disclosures, standards and labels), which are fundamental for private investors to identify and seize environmentally sustainable investment opportunities globally. Furthermore, the **Natural Capital Protocol** is focused at a business decision-making level and helps organizations to understand the value of their dependence on ecosystem flows – for example, the dependency of fisheries on marine ecosystem health and the business case for investing in spawning habitat protection.[88]

Whereas the above-mentioned global initiatives are not specific to marine sectors and blue economy, they will certainly have spill-over effects on impact measurement and investment mobilization to transition to blue economy.

There are, however, specific approaches and initiatives in the marine sectors that inform business and investment decisions, as well as management practices:

- The **Poseidon Principles** are a global framework for assessing and disclosing the climate alignment of lenders, lessors and financial guarantors (including export credit agencies) to maritime

86 For more on the Task Force on Climate-related Financial Disclosure, visit: https://www.fsb-tcfd.org/.
87 For more on the Portfolio Decarbonization Coalition, visit: https://unepfi.org/pdc/.
88 For more on the Natural Capital Protocol, visit: https://naturalcapitalcoalition.org/natural-capital-protocol/.

shipping, a key blue economy sector. These principles establish a global baseline to quantitatively assess and disclose whether financial institutions' lending portfolios are in line with climate goals adopted by the International Maritime Organization to reduce the total annual GHG emissions by at least 50 percent by 2050 (compared to 2008). Signatories report annually on their carbon intensity and assess their climate alignment relative to carbon reduction targets.[89]

- The aquaculture and fisheries sector is under pressure to transition to sustainable production as new investment mechanism and models are emerging that aim to offer solutions for the recovery and sustainable management of the fisheries. **The Principles for Investment in Sustainable Wild-Caught Fisheries** were launched in 2018 and are designed to provide investors with certainty about the environmental and social sustainability of fisheries and the return on their investment. They align with IFC Performance Standards and UN Principles of Responsible Investment, and are designed to advance the goals of the SDGs.[90] **Marine Stewardship Council** and **Friends of the Sea** certifications are also available as third-party verifications to demonstrate sustainable stewardship of marine environments and resources.
- In the tourism sector, the **Global Sustainable Tourism Council** developed industry criteria and destination criteria for sustainable tourism.[91] **EarthCheck** is one of the science-based benchmarking, certification and advisory groups for travel and tourism.[92]
- The **Sustainability Standards for Infrastructure Investors** is a valuable resource for informing sustainable investment in infrastructure.

Insights and observations:

- Sustainable finance and ESG-related developments are putting the onus on those seeking investments (government and private sector) to assess and verify impact.
- There is a wide range of initiatives, standards and tools that can be used to assess, monitor and report investment impacts.
- Existing knowledge and capability for environmental monitoring and enforcement of environmental laws and regulations are critical to the ability to measure investment impacts, demonstrate progress against objectives and meet investment requirements.
- Development of investment propositions and investment readiness in blue economy is dependent on the ability to combine environmental and marine ecosystem knowledge – including on cross-cutting issues like climate – with investment due diligence (financial modeling, deal structuring) and the valuation of economic benefits from ecosystems (marine and terrestrial).

89 For more on Poseidon Principles, visit: https://www.poseidonprinciples.org/principles/transparency/.
90 For more on Principles for Investment in Sustainable Wild-Caught Fisheries, visit: http://www.fisheriesprinciples.org/.
91 For more on Global Sustainable Tourism Council, visit: https://www.gstcouncil.org/.
92 For more on Earth Check, visit: https://earthcheck.org.

5.3 Recommendations for Vietnam

The insights from international examples show broad approaches and models of investment, and a wide range of initiatives, principles and tools that are applied and can be leveraged for the purpose of mobilizing resources for blue economy.

In the Vietnamese context, significant capability and coordination between different levels of government, and between the government, private sector and international partners are required in these early stages of mobilizing resources for the blue economy. Prototyping and experimentation through partnerships and risk-sharing models to mobilize finance for blue economy at scale are needed, recognizing that experience with blue economy is limited in Vietnam but also globally.

The central and provincial governments have an important role in supporting transition to and attracting investment in the blue economy. The government (central, regional/provincial and local) has a critical role in facilitating the assessment process and prioritization for investment of agreed priorities, as well as enforcement and accountability for impact. The roles and responsibilities should be clearly specified and the coordination required should be facilitated.

- Central and provincial governments can support blue economy development with appropriate data and policy insights and ensure synergies with policy, coordination with stakeholders and meeting commitments (including international commitments).
- Potential functions that may be considered (Figure 18):

CATALYST	• Increase awareness of blue economy and mainstream in sectoral strategies • Support feasibility studies and pilots to develop investable propositions and test investment instruments	• Facilitatie partnerships development (PPPs) • Create demand for environmental markets, e.g., certified fisheries, blue carbon offsets, zoning through MSP • Incentives or subsidies
REGULATORY	• Support & market facilitation, i.e., regulation to trigger demand (carbon, water quality) • Development of MSP/ ICZM • Enforcement & compliance (of MSP zoning, rules, permits, etc.)	
KNOWLEDGE AND DATA CAPABILITY	• Data & information, i.e., ecosystems conditions and trends (GIS data, research and monitoring data, etc.) • Ecosystem valuation, natural resource economics • Measurement, monitoring & reporting	• Investment performance & accountability
INVESTMENT	• Provider of loan or funding facilities • Provider of guarantees (for example, for blue bonds) • Direct investor in a project or fund	• Issuer of debt/ debt swap • Grants

Source: Authors' compilation

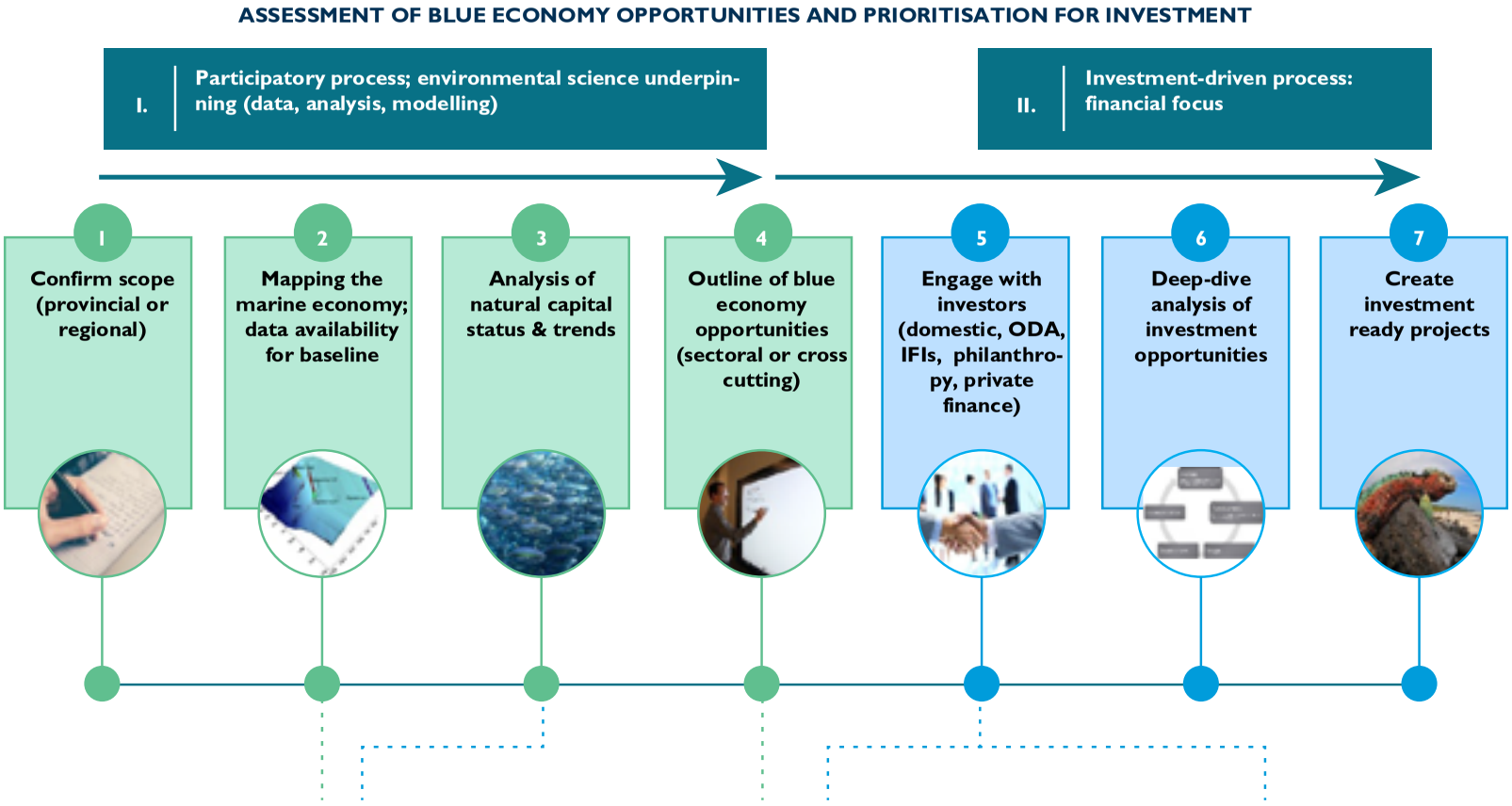
Figure 18. Core functions of the government in blue economy development and finance

Use marine spatial planning as a lever for blue economy assessment and investment development

The Marine Strategy calls for the development of marine areas on the basis of ecosystem condition and potential, ensuring that there is a balance between conservation and economic development. Vietnam is embarking on the process of developing a Master Plan (effectively a national marine spatial plan) for the management of the marine environment. For the Vietnamese marine economy to become a 'blue economy', opportunities for coastal and marine development must be informed by, and consistent with the Master Plan.

- Ongoing initiatives and experience with integrated coastal management of MONRE/VASI need to be used to inform the blue economy assessment and ensure alignment (and possible integration through joint process, if timing allows it) between ICM, MSP and blue economy. Blue economy planning leverages allocation from MSP to attract suitable investment to pursue sustainable economic development. Refer to chapter on Marine Spatial Planning for more insights into MSP and the interface with ICM and blue economy.
- An effective MSP process needs to identify and address trade-offs (across the land-sea boundary, between sectors, and between sectors and ecosystems) through spatial allocation of resources and uses. It will also identify blue economy opportunities. It is important to seek alignment with the SEDP to ensure implementation effectiveness, but also to enable investment towards priorities. A schematic representation of how the MSP process in Vietnam and its implementation could dovetail into blue economy assessment and priority investments is suggested in Figure 19 below.

Photo: huntergol hp - shutterstock.com



Source: Authors' compilation

Figure 19. A schematic two-stage process for Vietnam in the context of marine action plan and MSP development

Develop an investment framework for blue economy

- In preparation for the implementation of the Marine Strategy, the Ministry of Planning and Investment **should carry out, in the short term, an investment assessment to determine existing investment commitments and capital flows as well as gaps for specific objectives and indicators** (not just from government, but also development partners, multilateral organizations, foundations, etc.) of the Marine Strategy. This should include an understanding of the commitments towards SDG 14 and exploration of the nexus between climate finance (which is more advanced in Vietnam) and blue economy finance. The assessment should aim to identify opportunities for coordination and efficiency in public revenue as an initial step – including regarding the use of new investment models. The development of an **investment tracker** for ocean finance (for conservation and sustainable use of marine assets) may also be considered.
- Preferably, such assessment is a first step in a broader **effort to develop an investment framework for blue economy,** where existing and potential finance options are complemented by a focus on alignment between finance options and new investment models. This is a framework that could be undertaken at national, regional (multi-provincial) or provincial scale. Table 8 below reviews blue economy opportunities for Vietnam and their potential by specific investment models as a starting point; an approach that can be applied at different scales (province, regional or national). Many variables, including how common and mainstream an investment mechanism is, are not captured and will influence the applicability of a given model in a given context.
- The opportunity to establish a blue **investment facility** may also be considered (like in the EU) – with a mandate to accelerate transition to blue economy and create an enabling environment for investment pipeline development and access to finance. In the short term, it would be important to **undertake a pre-feasibility assessment** regarding the opportunity **to establish** a bespoke **blue investment facility** for Vietnam. The feasibility assessment may consider governance, sources of financial support, alignment with other programs, monitoring and evaluation. In countries in the West Africa Coastal Area (WACA) engagement supported by the World Bank, a similar facility was established to provide catalytic resources to leverage private finance. In WACA, the facility called for innovation and offered ideas and visibility on the need for private sector engagement. A catalytic orientation to a facility is needed.

Enhance investment knowledge and financial literacy

Investment in the blue economy is still in early stages across East Asia and there is insufficient experience in government and the private sector with preparing commercial investment projects and securing capital.

- In the short term, Vietnam should consider the possibility of **adopting the Sustainable Blue Economy Finance Principles** and joining the **UNDP's Sustainable Blue Economy Finance Initiative** (a platform targeted at the finance, investment and insurance sectors). Joining such frameworks helps demonstrate commitment to blue economy, build knowledge and access to data and tools, while also increasing the ability to attract investment. These efforts

could be driven as part of the VBEP platform.

- For potential **blue economy opportunities to become investable projects at scale**, there is a need for strong finance skills, business planning, market economics, understanding of growth models and investment planning, environmental markets, and project management and reporting.
- Project proponents and lead agencies (whether central government, provincial government or marine private sectors) need to have the knowledge and ability to prepare blue economy propositions in a format and with the level of detail that investors need, while also recognizing the novelty of some cross-sectoral investment projects, for example, fisheries recovery or sustainable aquaculture growth linked to ocean wind energy.
- A strong **program for building awareness about blue economy opportunities and financial & investment literacy** – including a 'learning by doing' approach through technical assistance[93] for blue economy projects – is an appropriate approach for Vietnam. This could include transfer of knowledge and skills from the renewable energy or waste sectors, where there is existing experience with investment on the ground in Vietnam. Insights and approaches from the ***Vietnam Biodiversity Finance Plan*** developed in 2019 should also be considered, including the transferability and synergy of investment solutions.[94]
- Such a program could be managed by MPI in conjunction with MONRE/VASI or lead agencies for implementation (if investment at the program level is secured). It could target specific provinces and the private sector, where blue economy projects are expected to be generated. The goal of such a program would be to increase investment readiness of blue economy opportunities and build a project pipeline. It could also aim to build capacity and experience regarding the use of new investment instruments (including design and application).

Leverage relationships with development partners in Vietnam and East Asia

- Many development partners have a strong focus on blue economy and to date have been providing support for relevant processes like ICM and MSP. They also focus on climate finance and resilience.
- MONRE's suggestion to create a VBEP is timely and resonates with development partners. In the short term, MONRE and MPI should strengthen the focus of the VBEP on investment to leverage the influence of development partners to bring together different government agencies, the private sector, donors, investors and NGOs seeking to establish an investment pipeline. A focus on blended finance opportunities is encouraged as an effective model for investment. For further insights and recommendations regarding development partners and multi-country financing mechanisms, refer to the chapter on International Cooperation.

93 Technical assistance is often available from development partners and multilateral agencies, as well as from investment funds. In the Pacific region, the World Bank and the Global Environment Facility have funded the Pacific Ocean Finance Fellowship Programme, an activity under the Pacific Islands Regional Oceanscape Programme (PROP).
94 Available at: https://biodiversityfinance.net/sites/default/files/content/knowledge_products/BFP%20Viet%20Nam.pdf

Table 8. Indicative blue economy opportunities for Vietnam and their potential by investment model[95]

	Impact		Debt					Equity		Equity/ hybrid
Blue economy opportunity (indicative, marine strategy)	**Grants**	**Corp. social resp. (CSR) investment**	**Revolving loan funds**	**Bank loans**	**Conservation impact bonds**	**Project bonds**	**Sovereign bonds**	**Impact investment**	**Seed financing**	**Debt swaps**
Natural capital										
Ecosystem services ***(e.g., coral reef, seagrass or mangrove restoration, on-land pollution harvest, i.e., Greenwave model)***	High	High	High	Medium to low	High	Medium	n.a.	Medium to high	Low	High
Natural infrastructure *(e.g., wetlands restoration, MPAs)*	High	High	Medium to high	Medium	High	High	n.a	Medium to high	Low	Medium

95 Adapted from The ocean finance handbook 2018. The rating is tentative only based on a desktop exercise by authors and not based on a detailed analysis of Vietnam's ability to implement the instruments.

	Impact		Debt					Equity		Equity/ hybrid
Commodities										
Fisheries – commercial ***(e.g., gear switch, green tech)***	Low	Low	Low	High	Low	Low	n.a.	Low	Low	Low to medium
Fisheries – small scale, artisanal ***(e.g., processing, distribution expansion)***	Medium to high	Medium to high	High	Medium to high	Low to medium	Low to medium	n.a.	Medium	Low	Low to medium
Sustainable aquaculture ***(e.g., certification, green practices, EBM-informed expansion)***	Medium	Medium	Medium	Medium to high	Medium	Low to medium	n.a.	Medium	Low to medium	Medium
Oil & gas ***(e.g., exploration)***	n.a.	n.a.	Low	Low	n.a.	Low	n.a.	Low	Low	Low
Bio-prospecting	Low	Low	Low	Low	Low	Low	n.a.	Low	Medium to high	Low

	Impact		Debt					Equity		Equity/ hybrid
Marine and coastal development										
Eco-tourism ***(e.g., services, accommodation)***	Low to medium	Low	Low to medium	Medium to high	High	Medium to high	n.a.	High	Low	Low to medium
Maritime logistics ***(e.g., sea port)***	Low	Low	Medium	High	Medium to high	Medium to high	n.a.	Low to medium	Low	Low to medium
Maritime transportation ***(e.g., vessel retrofit, expansion inland)***	Low	Low	Medium	High	Medium to high	Medium to high	n.a.	Low to medium	Low	Low to medium
Renewable energy - wave, tidal, solar installation ***(e.g., tech investment)***	Medium to high	Medium to high	High	Medium	High	Medium to high	n.a.	Medium to high	Low	Low
Waste management ***(e.g., re-use, new materials)***	Low	Low	Medium to high	Medium	Low to medium	Low	n.a.	Medium to high	Medium to high	Low

CHAPTER VI.

International cooperation for sustainable development of the marine/coastal economy

Photo: Nguyen Quang Ngoc Tonkin - shutterstock.com

Vietnam collaborates at the regional and global levels as a member of or signatory to various multilateral environmental and economic agreements. The country is a member of Asia-Pacific Economic Cooperation (APEC), Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)[96], and ASEAN. It is a signatory to the SDS-SEA and a number of environmental agreements, including the UN Convention on the Law of the Sea (UNCLOS), UN Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (CBD), Ramsar Convention[97] and others. Vietnam's entry into the World Trade Organization (WTO) in 2007 signified its intent to integrate with world trade and the country subsequently entered into several free trade agreements, including with the US, Canada, and the EU, among others (Shira, Dezan and Associates 2019; US Embassy & Consulate in Vietnam n.d., Government of Canada, n.d., EC n.d.).

At the global level, international cooperation for sustainable development of the marine/coastal economy emanated from the Rio+20 (2012 UNCSD) Outcome Document, ***The Future We Want***, which prescribed a paradigm shift to a green economy among nations (UNGA 2012).[98] This prescription was further entrenched in the 2030 Agenda for Sustainable Development through SDG 14 ("Conserve and sustainably use the oceans, seas and marine resources for sustainable development"). Additionally, SDG 17 ("Revitalize the global partnership for sustainable development") calls for strong global partnerships and cooperation, noting that the successful implementation of the 2030 Agenda requires inclusive partnerships at the global, regional, national and local levels based on common principles and values, and on a shared vision and shared goals.

SDG 14 calls specifically for cooperation in marine scientific research to implement the provisions of UNCLOS and the outcomes of the major summits on sustainable development. In particular, it calls for the transfer of technology, taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology. The UN has proclaimed a Decade of Ocean Science for Sustainable Development (2021-2030), an initiative to promote the use of ocean science to support efforts in reversing decline in ocean health (UNESCO n.d.).[99] SDG 14 urges collaboration on initiatives that address ocean acidification and the impacts of climate change on marine and coastal ecosystems and resources. It also calls for enhancing sustainable fisheries management, including restoring fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics (UNGA 2017).

Regional Commissions of the United Nations such as the Economic and Social Commission for Asia and the Pacific (ESCAP) support their member States in the implementation of the 2030 Agenda by serving as: (i) think tanks that produce knowledge products on a wide range of economic and social issues; (ii) conveners of multi-stakeholder and intergovernmental platforms; (iii) providers of policy advice and technical cooperation; and (iv) providers of capacity-building services (Pérez 2018). Other regional cooperation initiatives also support the implementation of the 2030 Agenda – for example, the SDS-SEA and APEC, which are described in the following paragraphs.

96 For more on CPTPP, visit: https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/index.aspx?lang=eng.
97 For more on Vietnam's Multilateral Environmental Agreements: https://www.informea.org/en/countries/VN/parties.
98 The Future We Want outcome document is available at: https://sustainabledevelopment.un.org/futurewewant.html.
99 For more on UN Decade of Ocean Science for Sustainable Development, visit: https://en.unesco.org/ocean-decade.

Collaboration initiatives between and among countries (involving two or more countries) to implement the 2030 Agenda are encouraged, particularly through South-South and Triangular Cooperation (in which traditional donor countries and multilateral organizations facilitate South-South initiatives by providing funding, training, management and technological systems, and other forms of support) (UNOSSC n.d.).

This section provides current international cooperation platforms that offer services and opportunities that Vietnam could use to advance its implementation of SDGs, and SDG 14 in particular. It also provides a snapshot of policy frameworks for international collaboration, as well as lessons from other countries' experience that could help Vietnam to squarely address its weaknesses in this area.

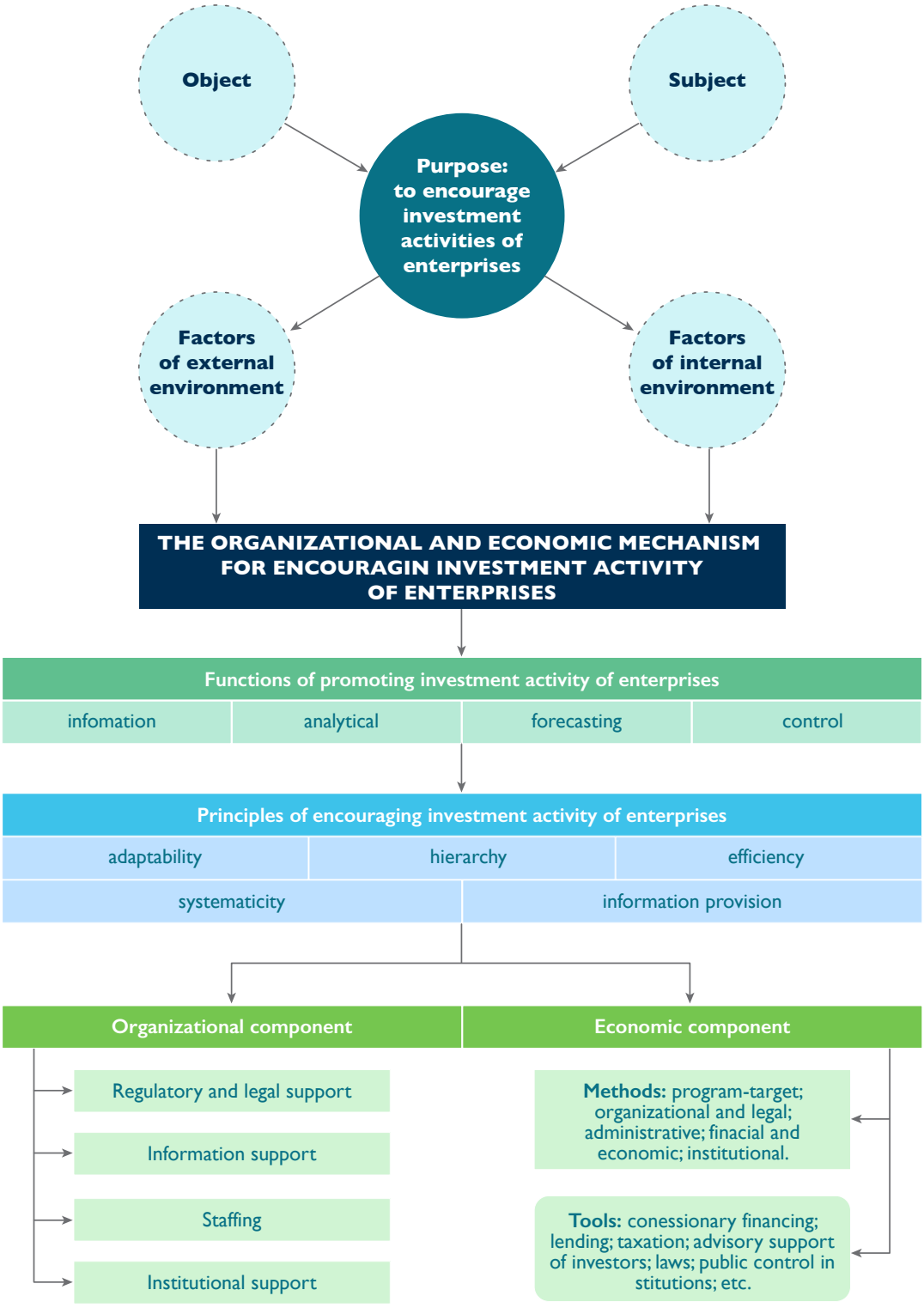
6.1 Examples and insights from international experience

To provide insights for Vietnam's operationalization of its Marine Strategy, this section draws lessons from existing frameworks, models, and approaches developed at different levels that contain features and guidance of potential relevance to Vietnam. These include examples from nascent marine economy initiatives to more mature programs in relevant sectors.

6.1.1 Policy guidance and directions

International policy frameworks that provide national and international investment guidelines are available for application to the Vietnamese context. Global and regional frameworks include the Investment Policy Framework for Sustainable Development (UNCTAD), Policy Framework for Investment (OECD), G20 Inclusive Business Framework (UNDP), Blue Growth Initiative (FAO), and the Sustainable Development Strategies for the Seas of East Asia (PEMSEA) (see Annex F for brief synopses of these frameworks).

These frameworks would require capacity building across various levels and branches of government in order to implement. Appropriate organizational structure and economic mechanisms are essential in order to encourage investment projects. Ideally, a country needs an overall organizational structure for international cooperation to facilitate such investment. A generalized organizational structure and economic mechanism for this purpose was developed by the Institute of Industrial Economics of the National Academy of Sciences of Ukraine that is a multilevel hierarchical system of interconnected elements and their typical components (subjects, objects, principles, methods and tools). The structure of the organizational and economic mechanism varies depending on the field of application. However, there are common elements that determine its composition and structure, such as goals, principles, management tasks/functions, methods, instruments, and organizational, institutional, legal, informational, financial, and other forms of support (Figure 20). The purpose of the organizational and economic mechanism is to intensify investment activities through direct and indirect methods and instruments of influence. It aims to ensure the effective performance of each enterprise on the basis of increasing investment activity (Korytko et al. 2018).



Source: Korytko et al. 2018

Figure 20. The organizational and economic mechanism for encouraging investment activities

6.1.2 Platforms for international cooperation for sustainable development

SDG 17 calls for strong global multi-stakeholder partnerships and cooperation that mobilize and share knowledge, expertise, technology and financial resources, to support the achievement of the Sustainable Development Goals in all countries, particularly developing countries. In view of decreasing levels of official development assistance and the significant socioeconomic impacts of the COVID-19 pandemic, strong international cooperation is all the more needed now to ensure that countries have the resources to implement the SDGs and to recover from the pandemic (UN n.d.).

International cooperation platforms through which Vietnam could engage in partnerships include: (i) partnerships to support implementation of all 17 SDGs (SDG Philanthropy Platform, Global Partnership for Effective Development Co-operation, and the Global Opportunities for Sustainable Development Goals); and (ii) partnerships with sectoral focus (UN Ocean Conference, Global Maritime Technology Cooperation Centres Network, Marrakech Partnership for Global Climate Action, Sustainable Ocean Initiative, Global Ocean Biodiversity Initiative, Ocean Accounts Partnership, SDGs Global Startup Competition, Asian Development Bank [ADB] Ventures). For more information on these various platforms, see Annex G.

These international platforms provide resources and partnership opportunities that Vietnam needs, including: financing; innovative/transformative solutions to sustainable development challenges; mechanisms for multi-stakeholder dialogues towards inclusive green economies; and new marine technology (e.g., for energy efficiency, development of statistical/scientific capacity, and social and business networking and entrepreneurship).

Lessons from international experience

Vietnam's 2018 profile report under the Global Partnership for Effective Development Cooperation, which collects data from governments and development partners in order to provide an indication of a country or territory's progress in achieving more effective development cooperation, indicates that the country has: (i) strong national development planning and results orientation compared to other lower middle-income countries (93 percent); (ii) strong development partners' use of country systems to deliver cooperation (93 percent); and (iii) systems in place to track information on development cooperation (100 percent). It appears that Vietnam actually has no problem coordinating with development partners in-country. The same report, however, points to the greater challenge of working with civil society, including the private sector, and getting its public financial management system in good shape in order to pursue sustainable development. The report indicates that Vietnam has not assessed: (i) the quality of its public-private dialogue; (ii) enabling environment for civil society organizations; and (iii) public financial management systems (GPEDC 2018). In addition, Vietnam's 2018 Voluntary National Review Report indicates that the country needs to: (i) strengthen administration reform; (ii) communicate information about free trade agreements and international cooperation frameworks; and (iii) enhance the government's prestige to attract investment (Government of Vietnam 2018). This situation makes it more imperative for the country to avail of the resources offered in the above-mentioned international cooperative platforms.

In contrast, Singapore's 2018 Voluntary National Review Report provides valuable insights as to how the country has overcome challenges in sustainable development through international cooperation since its independence in 1965 that Vietnam could consider for its own sustainable development initiatives. Singapore focuses on capacity building and human resource development as the key driver in achieving the 2030 Agenda. Among various initiatives under SDG 17, Singapore launched its Sustainable Development Programme (SDP) in 2015. The SDP aims to support developing countries' achievement of the SDGs by building capacity at three levels – leadership, city, and community – through partnerships with UN agencies and local NGOs. The SDP is specifically tailored for developing countries, in particular, the Small Island Developing States (SIDS) and the Least Developed Countries (LDCs), and offers a variety of courses on SDG-specific areas, such as water and sanitation, sustainable cities and climate change (Singapore Ministry of Foreign Affairs 2018).

Singapore supports a multi-faceted, multi-stakeholder approach to implementing the SDGs. Wide-ranging consultations with key stakeholders (citizens, industry, civil society and academia) are carried out throughout the policymaking cycle in order to ensure that their feedback is taken on-board during policy implementation and review. In addition, stakeholders fill the gaps in expertise needed for policy implementation (Singapore Ministry of Foreign Affairs 2018).

Engaging Singaporean youth is also considered key to the long-term effectiveness of SDG implementation with the view that inculcating a sustainable development-oriented mindset amongst their younger generation is important for future leaders in industry and government. The government is working with educational institutes in Singapore to raise awareness of the SDGs and 2030 Agenda, and to seek innovative ideas from their youth on how to achieve the SDGs. The government has launched a youth video competition on the theme "The Sustainable Development Goals – What YOUth Can Do" with the objective of drawing youth ideas or specific solutions to help achieve sustainable development in Singapore or around the world (Singapore Ministry of Foreign Affairs 2018).

Singapore has also established public-private partnerships (PPPs) on the implementation of several SDGs, and supported the work of several international organizations and businesses in spreading the message of sustainable development. Among other PPPs, Singapore supports UNLEASH, an annual event that brings together young, creative and innovative minds in creating imaginative solutions to achieve the SDGs. The Development Bank of Singapore has also released green bonds as a form of sustainable financing, in response to the Monetary Authority of Singapore's green bond grant scheme. Singapore's Temasek Foundation, a Singapore-based non-profit philanthropic organization, has been hosting annual "Ecosperity" Conferences in partnership with the Business and Sustainable Development Commission since 2014, which bring private and public sector leaders together to explore sustainable growth ideas.

Implementation of sectoral financing initiatives also yielded some lessons learned that could serve international cooperation in financing Vietnam's marine strategy, for example, lessons learned by FAO with investment projects. Annex H provides more information on multi-country cooperative financing mechanisms in fisheries and aquaculture, ecotourism, waste management, and shipping.

6.1.3 Issues and constraints to international cooperation for sustainable development in Vietnam

Vietnam's successful achievement of the Millennium Development Goals, especially those on poverty reduction, has been recognized (Socialist Republic of Vietnam 2013). The country continues to contribute positively to global sustainable development efforts by striving to mainstream sustainable development principles into its 2011-2020 Social and Economic Development Strategy (SEDS) and the 2016-2020 Social and Economic Development Plan (SEDP). It aims to fully integrate the SDGs into Vietnam's 2021-2030 SEDS and 2021-2025 SEDP. Implementation of the SDGs remains a national hurdle going forward, with challenges that include:

- Improving societal awareness and stakeholder participation
- Institutional enhancement and development/mainstreaming policy
- Fostering cooperation among government and the business sector, domestic organizations, and the international community
- Establishing national SDG indicators and strengthening national statistical capacity
- Strengthening resource mobilization particularly from the private sector (UNDESA n.d.).

Regarding SDG 14 and related SDGs, the strategic issue for Vietnam is how to pursue international cooperation in marine economy in order to support the implementation of its Marine Strategy. An associated issue is leveraging existing national and regional competencies in international cooperation in order to develop and implement an international collaborative mechanism to achieve blue growth. These competencies may include financial, physical, organizational, technological, human resources, innovation, and reputational resources and capabilities.

A specific objective of collaboration is the mobilization of international funding to support Vietnam's marine economy agenda, which would require consistent policies and transparent and clear guidance on investment opportunities. Table 9 lists the key/potential national and international players that could be involved in this process. Criteria for involvement in an international coordinating platform in Vietnam among these players will need to be developed and applied in the process of its formation. Detailed information on specific marine economy players in East Asia who are active parts of an emerging "ocean investment ecosystem" are provided in a report prepared by PEMSEA on enabling blue economy investment for sustainable development in East Asia (Whisnant and Ross 2019).

Internal analyses of these organizations should be conducted in order to assess and determine core competencies, as well as strengths and weaknesses. In addition, relevant models that are applicable to the general, sectoral and competitor context for international collaboration in green and blue growth in Vietnam should be surveyed as bases for alternative options, identifying challenges and opportunities. Memberships in existing agreements are strengths that need to be considered on a comparative basis, while weaknesses cited by national experts need to be assessed and addressed. These weaknesses include:

- Lack of national experience in intergovernmental and cross-sectoral collaboration and sharing/exchange of information

- Weak enforcement and integration of existing sustainable development policies in line with global targets
- Limited thinking, awareness, knowledge and experiences of the private sector and governmental agencies/staff relevant to marine economy
- No shared short- and long-term vision among key players; limited investment propositions from coastal provinces to carry out the Marine Strategy
- Insufficient coordination of blue economy initiatives, especially among UN agencies and international financial institutions
- Lack of knowledge on how to develop 'investable' propositions (Socialist Republic of Vietnam Government Portal n.d.).[100]

Table 9. Key national and international organizations of relevance to developing international collaboration for the sustainable development of Vietnam's marine economy (tentative list)

National	Regional & International
Ministry of Foreign Affairs	World Bank, Vietnam country office
Vietnam Administration of Seas and Islands (VASI), Ministry of Natural Resources and Environment (MONRE)	ASEAN-COST; Sub-Committee on Marine Science and Technology (SCMSAT)
Ministry of Planning and Investment	PEMSEA
Department of International Cooperation, Ministry of Science and Technology (MOST)	APEC Secretariat
Other relevant agencies represented in the National Steering Committee	ADB
	UNDP Vietnam country office
	WTO Secretariat
	CPTPP Secretariat
Sub-national:	International NGOs and foundations
28 coastal provincial governments	Bilateral and other international financial institutions
145 coastal districts (including 14 island districts)	Individual countries

100 Direct communication with Vietnamese key contributors

6.2 Recommendations for Vietnam

The above insights and lessons learned – as well as key features of models and approaches from existing programs and other initiatives relevant to marine economy – are taken into consideration in the following recommendations for international cooperation for sustainable development of the marine/coastal economy in Vietnam.

International cooperation would aim to mobilize Vietnam's engagement in international collaborative platforms developed to provide assistance to developing countries in their pursuit of sustainable development. These platforms provide investment opportunities and support research and development, capacity building, stakeholder engagement and networking, and monitoring and evaluation.

In order to effectively engage in international cooperation, Vietnam needs to **prepare and organize its own organizational structure (short-term) and economic mechanisms (medium-term) for international collaboration, following guidance from international investment frameworks and general models and approaches** to effective cooperation. This would require development of policies that:

- Are consistent with existing frameworks and agreements applicable to Vietnam – including the 2030 Agenda for Sustainable Development, the UNFCCC Paris Agreement, the CBD Strategic Plan for Biodiversity 2011-2020, and the Aichi Biodiversity Targets, among others – and in line with its 2021-2030 SEDS and 2021-2025 SEDP.
- Strike a balance between Vietnam's protection commitments and regulatory space for development.
- Are integrated across sectors and complemented by regulations covering policy areas besides investment policies (e.g., trade, taxation, intellectual property, competition, labor, market regulation, environmental policies and access to land.)

International cooperation of this nature could focus on **governance structure and mechanisms**, to include:

- An array of priority areas for investment following the priority areas of focus of Vietnam's Marine Strategy (as part of national and regional/provincial master plans) as well as a wide range of investment mechanisms. (See chapter on Resource Mobilization.)
- Collaboration and coordination mechanisms at different levels that would ensure complementarity of efforts. MONRE's initiative to establish the Vietnam Blue Economy Platform is an effective first step.
- A strategic plan of implementation that takes into consideration the logical flow of activities (following completion of national and regional/provincial master plans and identification of blue economy opportunities;[101] capacity development at national and local levels;[102] and organizational set-up). The plan may take a phased approach to implementation (by initially focusing on a number of pilot provinces).

101 See section on Marine Spatial Planning.
102 See section on Capacity Building.

Vietnam could organize/lead **a South-South cooperation initiative in which it could offer its experience in the implementation of the Millennium Development Goals**, especially in its use of poverty reduction strategies as well as its successful coordination with development partners in-country. In return, the country can learn from other countries' experience with the private sector and other stakeholders, as well as engagement, capacity building, and public administrative reform.

In order to succeed, activities under this international cooperation would need to **undergo monitoring and evaluation** in order to:

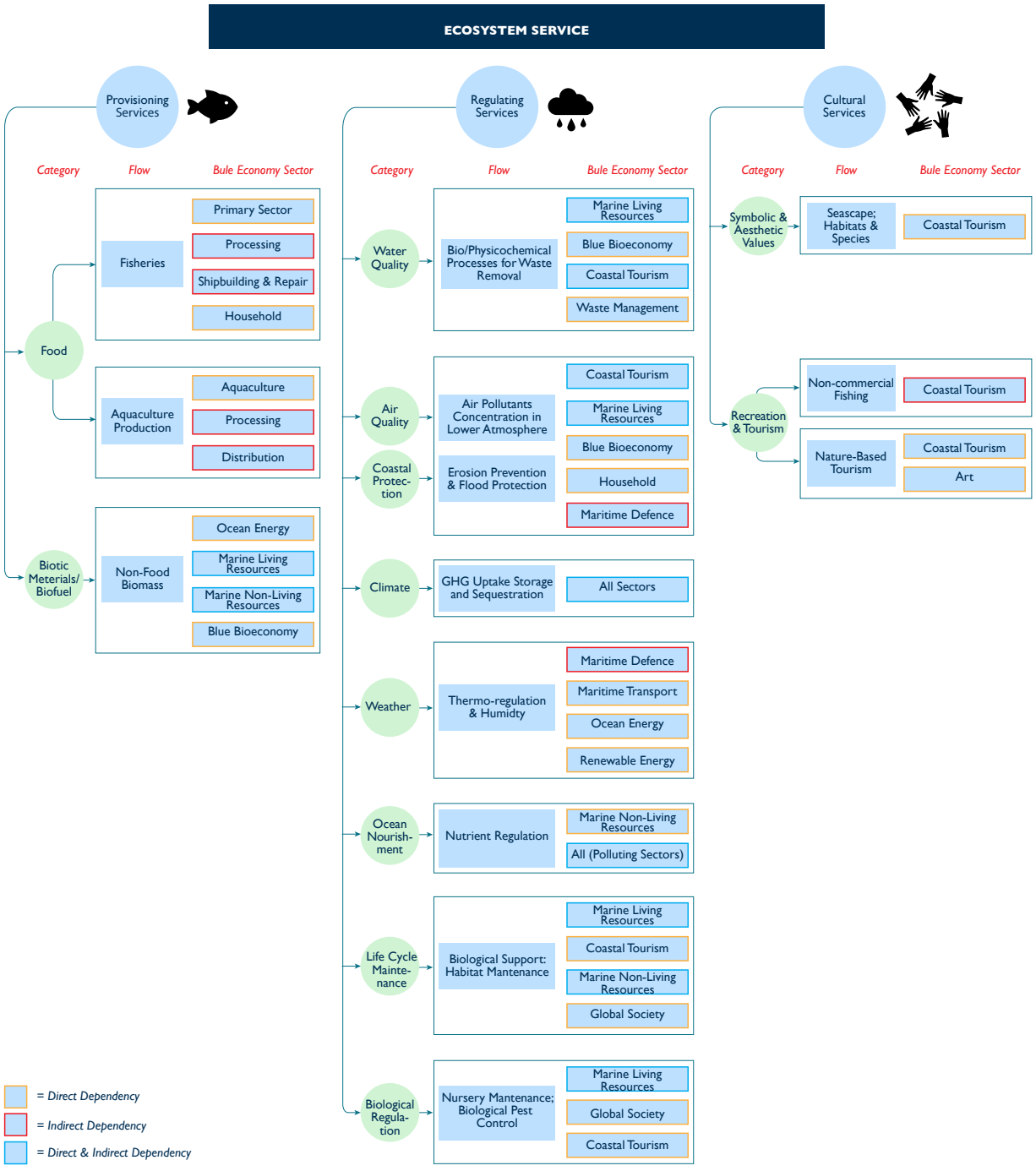
- Ascertain compliance with set standards of procedure and indicators of success
- Ascertain compliance with sustainability practices, rules and regulations
- Ensure financial transparency, ensuring that funds are genuinely applied to generate the desired outputs and impacts.

Identify success stories on which to build future investment projects and serve as a basis for strengthening national and international investment partnerships.

Photo: Phuong D. Nguyen - shutterstock.com

ANNEXES

Annex A.
Overview of the interaction between ecosystem services and the blue economy[103]



103 Adapted from the European Commission Blue Economy Report 2020.

Annex B.
Blue economy opportunities in Vietnam context: example of multi-criteria outcomes

Annex C.
Elements of the Vietnam Marine Strategy relevant to MSP

Vietnam's Law of Planning includes a requirement for national marine spatial planning (MSP), and has defined the National Maritime Spatial Plan as a National Master Plan. The planning scope for coastal MSP includes coastal waters with an outer boundary of six nautical miles from the coast as well as all communes, wards and towns adjacent to the sea in Vietnam, covering 28 provinces and cities directly under the central government. A planning period of five years applies, commencing in 2021.

The Marine Strategy includes the following objectives, among others, that are of particular relevance to the ecological dimensions of MSP in Vietnam (Figure 21).

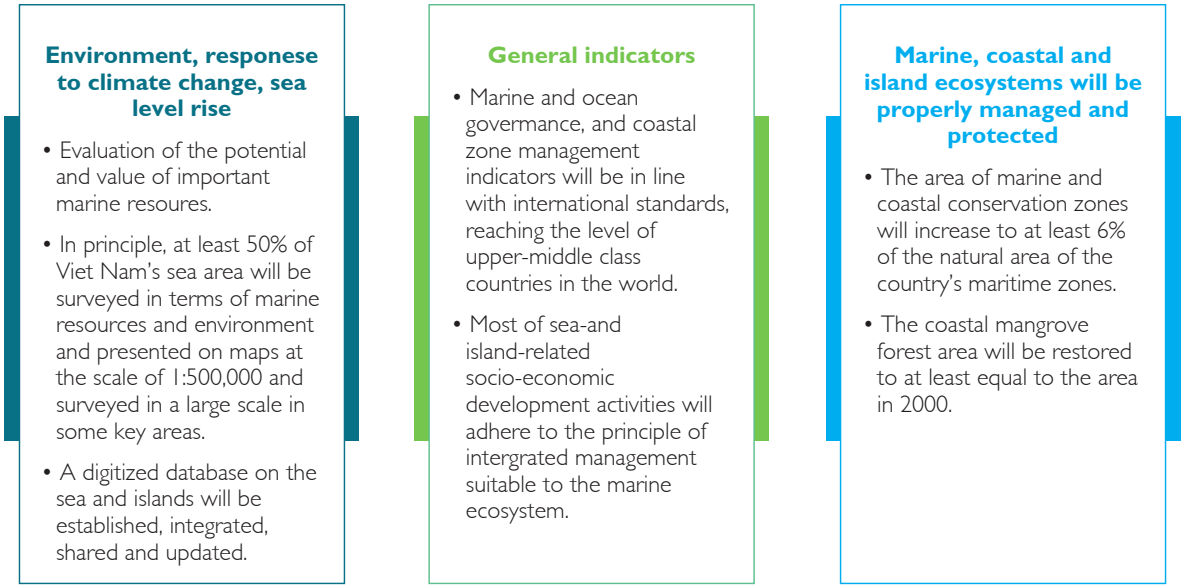


Figure 21. Vietnam Marine Strategy objectives relevant to ecological elements of the MSP

The Marine Strategy also includes two major guidelines of relevance to MSP that call for specific actions to ensure ecosystem protection and sustainable growth:

- Develop marine areas based on the advantages of natural conditions, ensuring harmony between conservation and development (Guideline 2)
- Environmental protection and conservation and sustainable development of marine biodiversity; proactively respond to climate change, sea level rise and disaster prevention (Guideline 3).

The national marine plan for the sustainable exploitation and use of coastal resources (being developed by MONRE but not yet approved) will be streamlined with MSP and in accordance with the relevant provisions of the Planning Law (and any subsequent decrees). MSP has become integrated into functional zoning for marine protected areas and ICM, such as in Quang Ninh province (Ehler 2013). MSP is underway in eight coastal provinces and territorial seas under the "Coastal Resources for Sustainable Development" Project with the Ministry of Agriculture and Rural Development and World Bank; and MSP has been completed in the Camau Province territorial sea (UNESCO n.d.).

The development of the National ICZM Strategy to 2020 and Vision to 2030 (approved in 2014) has benefited from local experiences in ICZM implementation as well as ensuing implementation decrees and strategies associated with the law, including the National Action Plan for Vietnam's ICZM Strategy, approved in 2016.

Photo: PHUOC THANH - shutterstock.com

Annex D.
Tools for implementing MSP in Australia and Scotland

Tools for implementing MSP in Australia

Mapping Tool	Contents
http://www.nationalmap.gov.au	A spatial database of Australian data, including marine spatial layers in support of MSP at Commonwealth level.
http://www.nationalmap.gov.au/renewables	Spatial information specific to Australias energy resources and infrastructure.
http://aodn.org.au	Australia's Ocean Data Network, providing Australian marine and climate science data, including spatial layers.
http://www.nespmarine.edu.au/maps	Maps from Australian National Environmental Science Program Marine Biodiversity hub, including maps of pressures on the marine environment and species maps amongst others
http://marine.ga.gov.au/	Geoscience Australia AusSeabed Marine Data Discovery, providing bathymetry and backscatter data access.
http://www.operations.amsa.gov.au/Spatial/	Includes a spatial database for use in GIS associated with Australia's shipping and maritime safety.
http://maps.ga.gov.au/interactive-maps/#/theme/amsis	The Australian Marine Spatial Information System is a web-based interactive mapping and decision support system that improves access to integrated government and non-government information in Australian marine Jurisdictions.
http://data.marinemammals.gov.au/	National Marine mammal database.
http://seamapaustralia.org	Includes, for example, national marine habitat maps/
http://research.crico.au/atlantis/home/about-atlantis/	The Atlantis model, used internationally as a decision support tool for MSP.

Source: OES Environmental 2020 State of the Science Report[104]

104 Available at: https://tethys.pnnl.gov/sites/default/files/publications/2020-State-of-the-Science-Report-Chapter-11-LR.pdf

Tools for implementing MSP in Scotland

Tool	Contents
Marine Scotland MAPS NMPI *http:/marinescotland.atkinsgeospatial.com/nmpi/*	National Marine Plan interactive
Scotland's Marine Atlas: Information for The National Marine Plan *http://www2.gov.scot/Publications/2011/03/16182005/0*	Spatial information specific to Australias energy resources and infrastructure.
Marine Scotland's Regional Locational Guidance *http://marine.gov.scot.information/regional-locational-guidance*	Australia's Ocean Data Network, providing Australian marine and climate science data, including spatial layers.
Regional Marine Plans *http://www2.gov.scot/Topics/marine/seamanagement/regional/Boundaries*	Maps from Australian National Environmental Science Program Marine Biodiversity hub, including maps of pressures on the marine environment and species maps amongst others
Sectoral Planning http://www2.gov.scot.Topics/marine/marineenergy/Planning	Specifically for offshore wind, wave, and tidal energy
Environmental Impact Assessment Regulations *http://www2.gov.scot.Topics/marine/Licensing/marine/guidance/EIARegulations*	Different regulations are used depending on the location of the marine development and the installed capacity of the development. These determine which marine developments are required to undertake production of an Environmental Impact Assessment Report prior to obtaining planning permission and the necessary consents

Source: OES Environmental 2020 State of the Science Report

Annex E.
Examples of capacity building initiatives

The examples below include initiatives on marine and ocean governance/management, implementing marine economy initiatives, and marine scientific research and transfer of marine technology from international experience.

Marine and ocean governance/management

United States: The US Coastal Zone Management Program encourages states to participate in comprehensive coastal management by providing funding for, among other activities, local and state capacity building, education and outreach, and public involvement. Each coastal state program leverages federal and state funds, and the expertise of each stakeholder involved, to address a wide range of issues, including coastal development, water quality, public access, habitat protection, energy facility siting, ocean governance and planning, coastal hazards, and weather and climate resilience. Among the key features in the success of US coastal zone management is the implementation of the consistency provision of the US Coastal Zone Management Act, which requires the ability to ensure that federal activities that affect state coastal uses or resources (both within and outside a state's coastal zone) are consistent with the state or territory's approved program. Within NOAA's National Ocean Service, the Office for Coastal Management provides training, technical tools and advice for state and local managers in the protection and wise use of coastal resources, as well as coastal and marine spatial planning and the development and delivery of tools to help coastal communities address challenges such as sea level rise (National Ocean Service n.d.).

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA): PEMSEA initiatives in capacity-building in ocean and coastal management provide proven examples of approaches and methodology that could be adapted and expanded/scaled up to meet the capacity needs of Vietnam. PEMSEA has been building the skills of a critical mass of Integrated Coastal Management (ICM) leaders and practitioners in the East Asian Seas region since in 1993 through the following approaches:

1. Learning by doing through ICM program development and implementation
2. Using working models for ICM training, replication and scaling up in pilot sites – for example, in Xiamen, China and Batangas, Philippines, which have served as training laboratories and venues for regional ICM trainings and study tours
3. Mobilizing regional and national task forces as well as knowledge and skills transfer to provide technical support to national and local governments, NGOs, and community members, and to facilitate access to scientific and technical expertise
4. Hands-on training for young professionals through internship and fellowship programs (Cicin-Sain et al. 2019).

PEMSEA has established the PEMSEA Network of Learning Centers (16 ICM learning centers in 8 countries and two regional centers of excellence – the Centre for Marine Environmental Research and Innovative Technology (MERIT) in Hong Kong, and the Marine Science Institute at

the University of the Philippines). The learning centers provide technical advice and assistance to national and local governments, ICM project sites, NGOs, local communities and the private sector through studies and projects on coastal and ocean management, monitoring and reporting on trends, and mentoring and training of ICM practitioners.

Through its Network of Local Governments for Sustainable Development, a self-sustaining network of local governments implementing ICM, PEMSEA has been enhancing the capacity of local governments to plan, develop, and manage their coastal and marine resources for sustainable use; promote the application of ICM approaches, processes and tools; facilitate the linkage between scientific technical institutions and local government; and implement innovative financing mechanisms and partnership arrangements for environmental investments with international and national financial institutions, private sectors and operating companies (Cicin-Sain et al. 2019).

EU and Intergovernmental Oceanographic Commission (IOC) of UNESCO: Within the framework of the 2014 EU Maritime Spatial Planning Directive, the EU and IOC adopted a roadmap to accelerate the development of marine spatial plans based on a shared understanding that MSP has a role to play in achieving the UN 2030 Agenda for Sustainable Development, in particular Sustainable Development Goal 14 (SDG 14). Among the priorities of the roadmap is capacity building in all dimensions with the aim of achieving internationally recognized guidelines for transboundary maritime spatial planning by 2021. The MSP Directive provides three core support tools for capacity-building in MSP: the MSP Platform, which provides technical support, studies, and workshops; the MSP cross-border projects, which produce data, tools, and methodologies; and the MSP Expert Group, which exchanges best practices in the EU. The European MSP Platform[105] is funded by the European Commission and maintained by a platform team.

Implementation of marine economy initiatives

Seychelles: Capacity-building to support marine economy in the Seychelles is largely carried out through public-private partnerships. The Government of Seychelles, through the Department of Blue Economy, which is mandated to oversee the completion and implementation of the Seychelles Blue Economy Strategic Framework and Roadmap, has embraced private sector and civil society partnerships, especially with the non-profit WiseOceans Seychelles and the private sector Four Seasons Resorts Seychelles and MAIA Luxury Resort. WiseOceans Seychelles has provided marine education and marine conservation activities to both tourists and residents since 2012. These partnerships allow the country to contribute to increasing ocean literacy and connection to the marine environment through engagement with conservation, delivering guided snorkeling excursions, marine life surveys, a reef restoration project, and school outreach programs (Seychelles Economic Planning Department 2020).

The Blue Economy Youth Programme, implemented by WiseOceans, in partnership with the Department of Blue Economy and the Ministry of Education and Human Resource Development, is a five-day education program designed to equip young Seychellois students with theoretical marine

105 The European MSP Platform can be accessed at: https://www.msp-platform.eu/.

knowledge and practical skills. It consists of marine biology, environmental science, blue economy, and career development classes, as well as practical training, including conducting scientific and social surveys, marine identification, presentation skills and field trips (WiseOceans. n.d.).

The Blue Economy Internship Programme, launched by SIDS Youth AIMS Hub, a youth-led NGO promoting sustainable development through youth-led projects in 2016, serves to promote sustainable development opportunities for young people in the marine economy by exposing them to opportunities within the existing framework. This program, which addresses SDG 5 (***Achieve gender equality and empower women and girls***), SDG 8 (***Decent work and economic growth***) and SDG 14 (***Life Below Water***), enables Seychellois youth aged between 15-30 years old to undertake a two-week internship in different local organizations representing various marine sectors. In addition to providing on-the-job experience for the interns, it also raises awareness about the marine economy among youth and the wider public through the interns' social media reports of their day-to-day experiences and newly acquired knowledge. Since 2016, 85 youth have participated in the program, which also incorporates an entrepreneurial stream whereby participants are encouraged to identify gaps within various sectors and conceptualize business opportunities they provide. Many of the program participants have obtained further internship or job opportunities within their host organizations or have taken further marine economy-related studies (SeyCCAT n.d.).

The Marine Scholarship Programme of WiseOceans Seychelles worked with a host of local partners (including the Seychelles Conservation and Climate Adaptation Trust and Global Vision International) to implement this initiative, which offers Seychellois youth training and skills development to pursue a career in the blue economy (SeyCCAT n.d.).

US: NOAA has introduced and illustrated concepts of environmental valuation, among them travel cost models and contingent valuation, through a handbook on economic valuation of natural resources for coastal resource policymakers. These concepts, in combination with advances in natural sciences, provide better understanding of the interactions between the natural environment and human behavior. The handbook, which focuses on the application of economic analysis to natural resource and environmental management and policy analysis, is intended for non-economists, addressing basic concepts of economic value such as willingness-to-pay and other tools often used in decision-making such as cost-effectiveness analysis, economic impact analysis, and sustainable development (Lipton et al. 1995).

PEMSEA: PEMSEA has produced information and guidance materials on blue economy as well as conducted workshops and other capacity development activities during the East Asian Seas Congresses. Through a Global Environment Facility (GEF)-funded project, PEMSEA conducted seven case studies on public-private partnerships (PPP) and prepared a Guide to Environmental Investments, a Training Manual and Policy Brief on PPP, as well as an ICM Code of Good Practice for Local Governments. Key lessons from the project include, among others: (i) in order to be accepted and appreciated by local stakeholders, private sector partners or investors should show their sincere commitment to helping protect the environment as well as building local capacity; and (ii) though projects are mostly locally-based, it is important to highlight the roles of national governments in enforcing environmental laws, promoting policies that encourage private sector participation in the provision of public infrastructure, and providing the needed technical and financial assistance to local governments (PEMSEA 2011).

EU: To further blue economy education and skills, the project "MENTOR — Blue Career Centre of Eastern Mediterranean and the Black Sea" analyzed the growth, professions, skills and qualifications of the labor force needed for a blue economy and established a Blue Career Centre in Cyprus, along with three branches in Bulgaria, Greece and Romania. The Centre undertook a series of actions to make blue careers more attractive to students and young professionals in the wider Eastern Mediterranean and Black Sea region. The project conducted an extensive market analysis and a survey in order to identify current and future (10-years' time) market needs as well as the desired blue professional profiles. It catalogued the maritime education/training offer in the region in maritime transport, the cruise industry and aquaculture sectors, and successfully organized a series of activities (Blue Career Days, school visits, career guidance, etc.), thereby contributing to increased general public awareness in the four countries involved. In the aquaculture sector, for example, the project identified the immediate essential technical skills needed as well as those expected in the next ten years (EC 2020).

Pacific Islands: The Pacific Islands Forum Fisheries Agency (FFA) and the Office of the Pacific Ocean Commissioner (OPOC), in partnership with Conservation Strategy Fund, the Conservation Finance Alliance and the Wildlife Conservation Society, implemented the Pacific Ocean Finance Fellowship Program in 2019-2020. This fellowship was part of the Pacific Ocean Finance Program, which is Component 3 of the Pacific Regional Oceanscape Program (PROP), funded by the World Bank and the Global Environment Facility, and implemented through FFA and OPOC. The aim of the Pacific Ocean Finance Program is to improve the amount and efficacy of finance for Pacific Ocean governance. The Finance Fellowship aimed to: (i) increase the individual capacity of Pacific Islanders by providing professional development training in ocean finance and governance; and (ii) advance finance initiatives promoting ocean governance and health both within institutions and across sectors in the region through a program of mentored projects in their home countries. During the nine-month fellowship program, Pacific Ocean Finance Fellows received training, financial support and project mentorship between June 2019 and March 2020, which expanded the pool of people in the region knowledgeable and skilled in conservation finance and able to increase positive investment decisions, business models and policies for ocean health at local and national scales (CSF n.d.).

Australia: Significant progress has been achieved by Australian universities in improving the capacity of postgraduate training to meet the needs of marine sector employers since the publication of the National Marine Science Plan 2015–2025. Most of these improvements, however, are not targeted to the blue economy and have been driven by the needs identified by the Australian government. A study involving employers, graduates, students and universities provided information on the training needs of the blue economy, including in the areas of: developing industry-focused skills; meeting the future needs of industry employers; developing quantitative skills; cross-disciplinary training; skills needed for employment; job-readiness; strengthening industry–university links; and understanding what drives commercial research and development (MacKeracher and Marsh 2019).

The Government of Australia, in its 2018 Report on the Implementation of the Sustainable Development Goals, indicated the importance of Indigenous Rangers throughout Australia in protecting and conserving the country's environment and heritage assets, including in the marine

environment. In addition to the 17 Indigenous Rangers reported to have already been engaged, the current program is expected to train an additional 40 Indigenous Rangers and employ up to seven Indigenous Compliance Officers to strengthen marine conservation efforts along the Far North Queensland coast. The Indigenous Rangers have been authorized to take on marine inspector duties as part of an initiative delivered by the Great Barrier Reef Marine Park Authority, working with local communities to protect the Reef and support marine conservation efforts (Australian Government 2018).

India: India has made strides in research and development on wave and tidal energy that could be of interest to Vietnam. Vietnam could benefit from technology already developed by India, including on wave energy conversion systems and economic tidal power potential. In India, ocean energy, which is mostly exploited through wave, tidal, current energy and ocean thermal energy technologies, has been declared as a renewable energy by the Ministry of New and Renewable Energy (MNRE). The MNRE supports demonstration projects of proven technologies while the Ministry of Earth Sciences oversees basic R&D. The technology program is open to public and private sectors to carry out projects in India (Press Information Bureau 2019).

Indonesia: The global significance of carbon storage in Indonesia's coastal wetlands was assessed based on published and unpublished measurements of the organic carbon content of living seagrass and mangrove biomass and soil pools. The results of the analysis emphasize the urgent need for blue carbon and REDD+ projects as a means to stop the decline in wetland area and to mitigate the release of a significant fraction of the world's coastal carbon stores. The methodology used in this study could be adopted by other countries in need of evidence on which to base the development of appropriate policy for blue carbon management and conservation (Alongi et al. 2016). A manual for measuring, assessing and analyzing carbon in the field and in the laboratory has been developed by the Blue Carbon Initiative drawing from experience in blue carbon assessments in Indonesia and elsewhere (Blue Carbon Initiative 2019).

Japan: The ***satoumi*** is an ecosystem-based approach adopted by coastal communities in Japan to reconcile sustainable ecosystem use and conservation of biodiversity. A great variety of conservation measures are applied, including centuries-old methods (e.g., river basin forestry) as well as more recent ones (e.g., seagrass transplants and constructed tidal fiats). The involvement of local communities and the voluntary contribution of significant labor by ecosystem users, mostly fishers, are essential to their success. Various capacity-building programs on the application of the ***satoumi*** approach have been carried out by the Kanazawa University and partners, including a program involving twinning of sites between Japan and the Philippines, focusing on building capacity of younger generations (Nakamura 2017).

Malaysia: Malaysia's vision "towards zero single-use plastics for a cleaner and healthier environment in Malaysia by 2030" is the basis for its Roadmap Towards Zero Single-Use Plastics, which takes a phased, evidence-based and holistic approach by involving all stakeholders in the planning and implementation of the initiative, led by the Ministry of Energy, Science, Technology, Environment and Climate Change. The Roadmap includes, among other activities, experiential learning at schools as well as communication, education, and public awareness (Tan 2019). The Roadmap serves as a guide towards zero single-use plastics and is largely voluntary in funding.

US Mid-Atlantic Ocean Data Portal: The Mid-Atlantic Ocean Data Portal is an online toolkit and resource center that consolidates available data and enables state, federal and local users to visualize and analyze ocean resources and human use information such as fishing grounds, recreational areas, shipping lanes, habitat areas, and energy sites, among others. The Portal serves as a platform to support all stakeholders in ocean planning from the five-state Mid-Atlantic region—providing key decision-makers with essential data and state-of-the-art mapping and visualization technology. Portal data comes from a variety of sources, including key federal providers such as MarineCadastre.gov (a collaboration of NOAA and the Bureau of Ocean Energy Management), the Coast Guard, the US Fish and Wildlife Service, the Department of Defense, and the Environmental Protection Agency. Data has also been produced through partnerships with non-profit organizations and the private sector, as well as through research projects led by Portal Team members. The Portal Team also is coordinating with the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS), which provides real-time oceanography data via its OceansMap, to create maps at a time and scale appropriate for regional planning (MARCO n.d.).

US National Estuarine Research Reserve System (NERRS): NERRS is a network of 29 coastal areas designated to protect and study estuarine systems. Created by the Coastal Zone Management Act, the reserves are a partnership between NOAA and coastal states. NOAA provides funding, guidance and technical assistance while each reserve is managed by a lead state agency or university, with input from local partners. The designation of a NERRS site does not prohibit existing uses/activities, and does not result in the total preservation of the area. As part of the NERRS designation process, NERRS sites require development of a management plan that respects human as well as natural resource needs. In addition to stewardship and research activities, the reserves focus on training of local and state officials so they become capable of introducing local data into the decision-making process as a result of reserve training efforts as well as on educating children and adults through hands-on laboratory and field-based experiences and online school curricula (NOAA n.d.). Volunteer citizen scientists are a major human resource of the NERRS that provide important information about estuary conditions including levels of pollutants and sea level rise (Morton 2019).

ASEAN: The ASEAN Committee on Science and Technology was established in 1978 to initiate and promote ASEAN's cooperative programs in science and technology. The Sub-Committee on Marine Science and Technology, one of its major program areas, seeks to increase the number of qualified personnel in marine science and technology (ASTNET n.d.). As part of the ASEAN Plans of Action on Science, Technology and Innovation (see APASTI 2016-2025 for the latest plan), the Sub-Committee has been implementing capacity-building activities. Its specific objectives for the period of 2016-2025 are to:

1. Undertake inter-ASEAN collaborative R&D on new and innovative materials for high technology applications
2. Develop environment-friendly materials
3. Establish network for the exchange of information

4. Enhance human resources development program through training, seminar and workshop
5. Promote optimum utilization of facilities through scientist and student exchange.

The ASEAN Plan of Action on Science, Technology and Innovation (APASTI 2016-2025) involves a paradigm shift that aims to bring about the benefits of science, technology and innovation from academic domains to the citizens of ASEAN countries, including through:

1. Mainstreaming Science, Technology and Innovation (STI) into ASEAN citizens' ways of lives
2. Focus on improvement of quality of life of ASEAN population
3. Youth-focused innovation
4. Green STI integration in its transformation towards low-carbon society
5. Mobilizing the private sector to the forefront of the novel STI era (ASTIF n.d.).

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Annex F.
Investment policy frameworks and directions for sustainable development

United Nations Conference on Trade and Development (UNCTAD)

To help policymakers address the challenges posed by an emerging new generation of investment policies that aim to operationalize sustainable development, UNCTAD launched a comprehensive Investment Policy Framework for Sustainable Development (IPFSD) in 2012. The Framework was based on a report that examined: (i) investment policymaking using a systemic approach; and (ii) the universe of national and international policies in view of today's key investment policy challenges. IPFSD, which explicitly focuses on the development dimension, consists of a set of core principles for investment policymaking, guidelines for national investment policies, and guidance for policymakers on how to engage in the international investment policy regime, in the form of options for the design and use of international investment agreements (IIAs). After field-testing in beneficiary countries, and being peer-reviewed at intergovernmental meetings, the IPFSC was updated in 2015 (UNCTAD 2012, 2015).

National investment policy guidelines

At the national level, the UNCTAD Framework advice on policy action includes the following:

- At the **strategic level**: (i) ground investment policy in a broad road map for economic growth and sustainable development; (ii) define the roles of public, private, domestic, and especially foreign direct investment, in development strategy; (iii) develop policies to enhance international competitiveness through capacity building, including human resources and skills development, technology and know-how, infrastructure development, and enterprise development.
- At the **normative level**: (i) promote and regulate investment that is geared towards sustainable development goals through the setting of rules and regulations; (ii) develop regulations covering policy areas beyond investment policies per se, such as trade, taxation, intellectual property, competition, labor, market regulation, environmental policies and access to land, in anticipation of negative side-effects as well as benefits.
- At the **administrative level**: (i) establish appropriate implementation and institutional mechanisms to ensure the continued relevance and effectiveness of investment policymaking; (ii) develop investment policy based on a set of explicitly formulated policy objectives with clear priorities and timeframes; and (iii) assess progress in policy implementation and verify the application of rules and regulations at all administrative levels.

International investment policy guidelines

UNCTAD's Investment Policy Framework provides options for the design of provisions in investor agreements in four areas, with an analysis of sustainable development implications:

1. Incorporating concrete commitments to promote and facilitate investment for sustainable development – for example, through facilitation mechanisms (information sharing, investment promotion forums); outward investment promotion schemes (insurance and guarantees); joint

investment promotion initiatives; and technical assistance and capacity-building initiatives targeted at sustainable investment.

2. Balancing government commitments with investor obligations and promoting responsible investor obligations to deter investor non-compliance with domestic laws. In addition, international investment agreements could refer to commonly recognized international standards and support the adoption of corporate social responsibility standards.
3. Ensuring an appropriate balance between protection commitments and regulatory space for development. Countries can safeguard the right to regulate by clarifying the scope and meaning of treaty provisions such as the fair and equitable treatment standard and expropriation, and by using specific flexibility mechanisms such as exceptions and reservations.
4. Shielding host countries from unjustified liabilities and high procedural costs through treaty design involves looking at options both in the way investment dispute settlements are conducted and in the scope and application of substantive clauses.

In addition, there are three basic concepts that could help governments clarify the position of their country in the world economy, set priorities, and implement the country's long-term vision in developing investment policies in a logical framework:

- Investment policy is about connecting foreign and domestic investment through local, regional and global value chains.
- An investment policy strategy needs to go beyond attracting initial investments; it should successfully retain investment and build strong linkages with domestic businesses.
- Not all types of investment are the same. Different types of investment have different effects on socioeconomic development, and thus require different policies (Echandi and Scronce 2016.).

Organisation for Economic Co-operation and Development (OECD)

Additional broad guidance on investments was provided by the OECD in the form of a Policy Framework for Investment (PFI) in 2006, which aimed to mobilize private investment that supports steady economic growth and sustainable development, contributing to the economic and social well-being of people around the world. Drawing on international best practices, the PFI proposes guidance in policy fields critically important for improving the quality of a country's enabling environment for investment. It encourages policymakers to ask appropriate questions about their economy, their institutions and their policy settings to identify priorities, develop an effective set of policies and evaluate progress. The framework serves as a tool, offering a checklist of key policy issues for consideration by any government, in the form of core questions and principles covering: (i) investment policy; (ii) investment promotion and facilitation; (iii) trade policy; (iv) competition policy; (v) tax policy; (vi) corporate governance; (vii) policies for enabling responsible business conduct; (viii) developing human resources for investment; (ix) investment in infrastructure; (x) public governance; and (xi) an investment framework for green growth. The PFI was updated in 2015 to take into account feedback from numerous users at country and regional levels, as well as changes in the global economic landscape (OECD 2015).

United Nations Development Programme (UNDP)

Through the Istanbul International Centre on Private Sector in Development, UNDP formulated the "G20 Inclusive Business Framework." The framework sets out recommendations on how to create and scale up an enabling environment for inclusive business approaches. A key feature of this approach is the inclusion of low-income people across companies' value chains as suppliers, distributors, retailers or customers. A complementary initiative is the "Business Call to Action", a UNDP-led partnership that includes almost 200 companies committed to implementing concrete inclusive business initiatives worldwide.

Food and Agriculture Organization of the United Nations (FAO)

The FAO Blue Growth Initiative (BGI) is an inclusive and participatory approach to foster sustainable fisheries management. BGI aims to safeguard food security and decent work benefits derived from wild fish stocks as well as exploring alternative sources of food security and decent work, such as aquaculture. As a program and an overarching policy, BGI supports sustainable fisheries and aquaculture development and SDG 14.

Partnerships in Environmental Management for the Seas of East Asia (PEMSEA)

Recognizing the numerous ocean-related challenges in the region, the 14 Partner Countries of PEMSEA adopted the Sustainable Development Strategies for the Seas of East Asia (SDS-SEA) in 2003. The SDS-SEA consists of relevant principles, strategies, objectives and implementation approaches for achieving sustainable development of oceans and coasts of the Seas of East Asia region. In 2015, the SDS-SEA was updated to ensure that it remained relevant to the needs and circumstances of the region, taking account of global agreements and targets that were adopted after 2003, including the UN Sustainable Development Goals, the UNFCCC Paris Climate Agreement, the Convention on Biological Diversity – Strategic Plan for Biodiversity 2011-2020, the Aichi Biodiversity Targets, and the Sendai Framework for Action on Disaster Risk Reduction and Management. The SDS-SEA, along with ASEAN and APEC investment frameworks,[106] could be seen as the broad policy guidance for investments in marine economy in the region as part of the plethora of relevant national and international policies. The SDS-SEA Implementation Plan 2018-2022 lays out, among other priorities, actions on marine economy investment and sustainable financing of the SDS-SEA for policymakers of member countries (PEMSEA 2018).

The PEMSEA report on ***Enabling Blue Economy Investment for Sustainable Development in the Seas of East Asia*** provides a model approach in establishing an "ocean investment facility." The facility would have the following key features: (i) self-financed after an initial round of projects are funded and implemented by public and private partners, with the help of institutional and other investors; (ii) assist governments that may lack the capacity and know-how to identify, develop and transform strategic priorities and objectives into bankable investments, including by providing pre-investment services; and (iii) establish standard processes for project development and investment, including those on pre-investment services (e.g., project sourcing, pre-feasibility, feasibility, and project development) (Whisnant and Ross 2019).

106 See, for example, the ASEAN Comprehensive Investment Agreement and the APEC High Level Policy Dialogue on Food Security and Blue Economy.

Annex G.
International cooperation platforms for sustainable development

Lead organization	Program	Mission / objectives	Target beneficiaries	Platform / approach
UNDP, Foundation Center and Rockefeller Philanthropy Advisors	SDG Philanthropy Platform	Support philanthropic institutions and their grantees at the country level in SDG planning and implementation processes Aim to incubate and deepen collective, innovative and transformative solutions to achieving SDGs	Philanthropic institutions and their grantees	Website: www.SDGfunders.org
	Global Partnership for Effective Development Co-operation	Supports practical implementation of effective development cooperation principles, promote mutual accountability, and work to sustain political momentum for more effective cooperation and partnerships	Governments, bilateral and multilateral organizations, civil society, the private sector, representatives from parliaments, and trade unions, among others	Website: https://www.effectivecooperation.org/landing-page/about-partnership Partnership convenes at high/Ministerial-level annually
UN Environmental Programme (UNEP) and Germany's Federal Ministry of Environment, Nature Conservation and Nuclear Safety	Global Opportunities for Sustainable Development Goals (GO4SDGs)	Highlight exemplary approaches from countries and strengthen capacity for replication across regions Serve as a platform to facilitate dialogue and knowledge sharing for inclusive green economies Interweave with existing UNEP initiatives and One Planet Network programs Foster exchange on innovative and successful practices through newly designed regional sustainability hubs	Policymakers, small and medium enterprises, and youth	Website: https://www.unenvironment.org/explore-topics/sustainable-development-goals/what-we-do/global-opportunities-sustainable

Lead organization	Program	Mission / objectives	Target beneficiaries	Platform / approach
UN Department of Economic and Social Affairs	UN Ocean Conference	Strengthen efforts to mobilize, create and drive solutions to realize the 17 Sustainable Development Goals by 2030	Governments, civil society, businesses, and individuals	Website: https://www.un.org/en/conferences/ocean2020/about Conference (2017; 2020-2021) Registry of voluntary commitments Webinars for key stakeholder groups to connect, mobilize and bring forward new ideas for keeping the momentum for ocean action
International Maritime Organization (IMO) and the European Union	The Global MTCC Network (GMN)	Unites Maritime Technology Cooperation Centres (MTCCs) – in targeted regions into a global network for promoting technologies and operations to improve energy efficiency in the maritime sector and helping navigate shipping into a low-carbon future	Developing countries and, in particular, Least Developed Countries (LDCs) and Small Islands Developing States (SIDS)	Website: https://gmn.imo.org/about-gmn/ Maritime Technology Cooperation Centres (MTCCs)

Lead organization	Program	Mission / objectives	Target beneficiaries	Platform / approach
UNFCCC	Marrakech Partnership for Global Climate Action	Support implementation of the Paris Agreement by enabling collaboration between governments and the cities, regions, businesses and investors that must act on climate change	Governments and the cities, regions, businesses and investors	Website: https://unfccc.int/climate-action/marrakech-partnership-for-global-climate-action Regional Climate Weeks Meetings at Conferences of the Parties (COPs) Global Climate Action Summit Technical examination process on mitigation, etc.
Convention on Biological Diversity	Sustainable Ocean Initiative	Provide a global platform to build partnerships and enhance capacity to conserve and sustainably use marine and coastal biodiversity in a holistic manner	Governments, intergovernmental organizations, civil society	Website: https://www.cbd.int/soi/ Web-based information-sharing and coordination Global partnership meetings Regional workshops and learning exchange Training and exchange at the national level Exchange among local leaders through local leaders forum Training of trainers

Lead organization	Program	Mission / objectives	Target beneficiaries	Platform / approach
	Global Ocean Biodiversity Initiative	Advance the scientific basis for conserving biological diversity in the marine environment, i.e., in the identification of ecologically and biologically significant marine areas (EBSAs) by assisting a range of intergovernmental, regional and national organizations to use and develop data, tools and methodologies	Intergovernmental, regional and national organizations	Website: http://gobi.org/
UN Economic and Social Commission for Asia and the Pacific (UNESCAP) and UNEP	Ocean Accounts Partnership	Strengthen statistical capacity to harmonize data, and pilot initiatives to collect evidence for action toward a healthy ocean	Governments	Ocean Accounts Platform
World Tourism Organization, together with various corporate and other collaborators	Sustainable Development Goals Global Startup Competition	Encourage the global innovation and entrepreneurship ecosystem to embrace sustainability and to deliver impact during the United Nations Decade of Action starting in 2020, especially in the context of the COVID-19 pandemic	Startups from all walks of life, from all over the world and all economic sectors	Website: https://www.unwto.org/sdgs-global-startup-competition
Asian Development Bank	ADB Ventures	Feed investment and support to Asian startups that are developing solutions aimed at achieving the UN Sustainable Development Goals (SDGs)	Startups	Website: https://ventures.adb.org/

Annex H.
Sectoral multi-country financing mechanisms

Fisheries and aquaculture

The Global Partnerships for Responsible Fisheries (FishCode) is an inter-regional assistance program established at FAO to support the implementation of the Code of Conduct for Responsible Fisheries (CCRF). The CCRF, which contains a broad set of voluntary principles and methods for developing and managing fisheries and aquaculture worldwide, was adopted by FAO member countries in 1995 in response to serious and growing threats affecting aquatic ecosystem diversity and productivity, resource sustainability, occupational welfare, and food security. FishCode serves as a principal means through which FAO combines its regular budget with trust fund resources in support of activities to facilitate CCRF implementation. Donor partner contributions to the multilateral FishCode Trust, and to individual project trust funds under the FishCode umbrella, support an array of component activities, all of which address issues and problem areas related to the transition to responsible fisheries and aquaculture at global, regional, national and local levels (FAO. n.d.).

The FAO Investment Centre collaborates, through its staff and consultants, with international financial institutions (IFIs) in the identification, design, supervision, and final review of their investment projects in agriculture, forestry, fisheries, and natural resources management. Additional activities of the Centre include technical support to investment projects and sector reviews. Lessons learned with investment projects point to the need for: (i) very thorough financial, economic and market feasibility studies; (ii) strengthening capacity through regional networking in technical cooperation among participating countries; (iii) appropriate interlocutors or champions who can articulate what CCRF is and its importance; and (iv) financial transparency, ensuring that funds are genuinely applied to generate the desired outputs (FAO 2012).

Ecotourism

Ecotourism is quickly growing in popularity among different responsible tourism markets. Examples of ecotourism include education and community projects, wildlife research, and energy-efficiency activities, which are supported by destinations with varying levels and methods. Financing for ecotourism mainly comes from wealthy individuals, philanthropic foundations, and multilateral development banks, with minor support coming from other players such as non-profits. Lessons learned in investing in ecotourism revealed that: (i) due to the many parts of sustainability of ecotourism businesses, investments need more in-depth monitoring and analysis in order to ensure proper sustainable development practices are being used; (ii) working closely with operators to expand energy and water efficiency is essential for growing and ensuring sustainability, as they pay for themselves through the energy-cost savings of greening operations; (iii) ecotourism is not a solution for funding conservation; since ecotourism is dependent on weather, politics, and other issues that impact appeal, it needs a wider net of investment and financial flows outside of operating revenue (Tazawa 2017).

Pollution management: Plastics

In view of the serious problems posed by plastic accumulation and pollution worldwide, public and private sector interests in plastic waste management have grown rapidly in the last decade and continue to do so. Governments and other constituencies are embracing the SDGs, which call for waste prevention, reduction, reuse and recycling. In the US, companies are recognizing both the risk and opportunity associated with plastic pollution, as the number of earnings calls that included mentions of "plastic waste" increased 340 percent over the previous year in 2018 (Morgan Stanley 2019, Lee and Moscardi 2019).

In Southeast Asia, regional and national efforts have been launched to reduce plastic pollution. For example, UNESCAP, in partnership with the Government of Japan, has recently launched a new project, "Closing the Loop," which aims to reduce the environmental impact of cities in Southeast Asia by addressing plastic waste pollution in rivers and oceans. The project supports governments in addressing plastic waste pollution and leakages into the marine environment by leveraging innovative technologies such as remote sensing, satellite and crowdsourced data applications to detect and monitor the sources and pathways of plastic waste entering rivers in urban catchment areas.

The four ASEAN cities that will pilot the project are Kuala Lumpur, Malaysia; Surabaya, Indonesia; Nakhon Si Thammarat, Thailand; and Da Nang, Vietnam (UNESCAP 2020). In Malaysia, the government is implementing its Roadmap Towards Zero Single-Use Plastics (2018-2030), taking a phased, evidence-based and holistic approach by involving all stakeholders in working together towards a cleaner and healthier environment. Led by the federal government, the project is being implemented with the participation of state governments; manufacturers, suppliers and business operators; NGOs; and the general public. In addition to the Roadmap's vision, set of principles, action plan and corresponding implementation framework, it also recognizes the following challenges: lack of awareness; low recycling rate; biodegradability and cost of current alternative to plastics; enforcement; and integrated waste management.

The Federal Government, through the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC), facilitates resource mobilization, guided by a Joint Steering Committee which ensures that resources needed for the Roadmap are mobilized in a timely manner. R&D funding is allocated for alternative eco-friendly products. The Roadmap also envisions the development of a regional marine debris project for external funding (such as the GEF) to be implemented in Phase II of the initiative (MESTECC 2018).

Shipping

The Pacific Blue Shipping Partnership (PBSP) is a country-driven initiative among Pacific Island countries for a large-scale blended finance investment to catalyze a multi-country transition to sustainable, resilient, and low-carbon shipping. The PBSP targets domestic shipping to zero carbon by 2050 with a 40 percent reduction by 2030. Transportation and mobility, which are cross-cutting issues that are critical to the sustainable development of Pacific Island Countries (PIC), are beset by problems that include: (I) domestic ferries and inter-PIC transport vessels that serve as critical links between remote destinations are commonly old, fuel inefficient and unsafe; and (ii) shipping

within and between PICs is the most expensive per unit distance and per capita in the world, as it is dependent on imported fossil fuels which are subject to fuel price vulnerability and security of supply. In order to transition to more appropriate, clean and affordable domestic and international shipping, a substantive investment is needed immediately.

Large-scale financial investment in sustainable sea transport will require input from diverse sources, following a blended finance approach, catalyzed in the short and medium term by both bilateral donor assistance, and the issuance of a guaranteed blue bond. A key subsequent step will be the development of proposals for a large regional investment (in the order of USD 100 million) from the Green Climate Fund. This would allow for an integrated program portfolio of both grant and revolving loan modalities targeting public and private sectors and all scales of shipping, from village to inter-country. The cost of this financing could be significantly reduced by guarantees, grants, or highly concessional instruments supported by development partners.

Such an international cooperation benefits from the experience provided by the investment of USD 2 billion into the electricity sector under the Pacific Energy Summits since 2012. A blended finance approach for shipping aligns with the 2030 Agenda for Sustainable Development, Paris Agreement on Climate Change regional NDCs, the SAMOA Pathway, and Framework for Resilient Development in the Pacific. The Partnership is also supported by UNCTAD, WFP, UNESCO, UNESCAP, and regional agencies, including University of the South Pacific (USP), Secretariat for the Pacific Community (SPC) and Pacific Islands Forum (PIFS) Smaller Island States Secretariat. Major activities going forward include the establishment of Technical and Finance Working Groups as well as the organization of a workshop of decision-makers of relevant PICs' finance and transport ministries and major partners to draft an Initiative Roadmap, discuss Working Papers drafted by the Technical and Finance Working Groups and, most importantly, work towards finalizing country commitments to the PBSP (MCST-RMI/USP. n.d.).

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RESOURCES

Online MSP resources

Below is a selection of online resources for MSP practitioners and researchers interested in multi-objective planning approaches and tools (Lombard et al. 2019)[107]:

- Intergovernmental Oceanographic Commission states https://classroom.oceanteacher.org/
- Caribbean Regional Oceanscape Project, Organisation of Eastern Caribbean States https://www.oecs.org/ogu-resources/summary-of-regional-strategicenvironment-social-assessment-for-crop
- Center for Ocean Solutions, Stanford University (United States) https://oceansolutions.stanford.edu/
- Coastal and Marine Spatial Planning tools, National Oceanic and Atmospheric Administration (United States) https://cmsp.noaa.gov/data-tools/tools.html
- Coastal Resilience (Australia, Caribbean, Indonesia, North America, Mexico and Central America) http://coastalresilience.org
- Collaborative Planning for our Oceans (Atlantic, Indian and Pacific Oceans) https://www.seasketch.org/
- Community hub for Sustainable Ocean Management and Conservation (United States) https://www.openchannels.org/tools/field-tested-tools
- Ecosystem-Based Management Tools, Global network of conservation and management practitioners (institutions from Australia, France, Italy, United States, among others) http://www.natureserve.org/conservation-tools/ecosystem-basedmanagement-tools-network
- Mapping Ocean Wealth (Australia, Atlantic Coast, United States, Caribbean, Gulf of California, Indonesia, Micronesia) https://oceanwealth.org/
- Marine Geospatial Ecology Tools (Global) http://mgel.env.duke.edu/mget
- Marine Integrated Planning (Baltic, Adriatic and Black Sea regions) http://www.plancoast.eu/
- Marine Plan Partnership (British Columbia, Canada) http://mappocean.org/
- Marine Planning Concierge organizes existing technical approaches, information, and tools in a generalized spatial planning framework (Vancouver Island, Belize, Barbados, New England, The Bahamas, Mozambique, California, British Columbia, Canada) http://msp.naturalcapitalproject.org/msp_concierge_master/
- Marine Spatial Planning Programme (Africa, Arctic, Asia, Oceania, Europe, Middle East, The Americas) http://msp.ioc-unesco.org/about/msp-at-unesco/

107 This is sourced from the paper by Lombard et al. (2019) on Practical Approaches and Advances in Spatial Tools to Achieve Multi-Objective Marine Spatial Planning in Frontiers in Marine Science.

- Marine Spatial Planning (Seychelles, Indonesia, Caribbean, Pacific Islands) http://marineplanning.org/
- Marine Spatial Platform (Baltic, Black and North Seas, North East Atlantic and Mediterranean Oceans) https://www.msp-platform.eu/
- Open Communications for the Ocean (United States) https://www.octogroup.org/
- Platform for knowledge exchange and generation and capacity building for sustainable management (Caribbean Sea, Pacific Islands, Atlantic and Indian Ocean) https://bluesolutions.info/
- Seychelles Marine Spatial Plan Initiative https://seymsp.com/
- The Global Oceans Regime, Council on Foreign Relations (United States) https://www.cfr.org/report/global-oceans-regime
- Tools for understanding marine biodiversity and assessing good environmental status (Gulf of Finland, Kattegat, Southern North Sea, Bay of Biscay, Adriatic Sea, Eastern Aegean Sea, Sea of Marmara, and Western open Black Sea) http://www.devotes-project.eu/
- United Nations Environment Programme (Global) https://www.unenvironment.org (search for "Marine Spatial Planning"); http://wedocs.unep.org/handle/20.500.11822/22186; https://www.unenvironment.org/nairobiconvention/nairobi-convention

Selected examples and insights from environmental and ocean investment

The World Bank launched PROBLUE in 2018, a USD 100 million multi-donor trust fund aimed at providing assistance and investments across four themes[108]:

- Improving sustainable management of fisheries and aquaculture
- Addressing the threats posed to ocean health by marine pollution, including litter and plastics
- Enhancing the sustainability of key oceanic sectors such as tourism, maritime transport, and off-shore renewable energy
- Building capacity of governments to manage their marine resources, including nature-based solutions, and to mobilize private sector finance.

The Asian Development Bank (ADB) is aiming to channel USD 5 billion towards technical assistance and finance to projects focused on ocean health and marine economy. ADB established the Oceans Financing Initiative to create opportunities for private sector investment in bankable blue economy projects through instruments such as credit risk guarantees and blue bonds.

A platform for Sustainable Blue Economy Finance was launched by the UNEP Finance Initiative with the goal of bringing together financial institutions with scientists and civil society to help shape the future of the industry and accelerate the transition towards sustainable use of the world's ocean, seas and marine resources by developing practical actions and outputs for insurers, lenders and investors.[109]

108 For further reading: https://www.worldbank.org/en/programs/problue
109 For further reading: https://www.unepfi.org/ecosystems/sustainable-blue-economy-finance/

Specific ocean and blue economy focused funds are being established and making investments available in East Asia. Experience with integrated coastal management and the implementation plan for the SDS-SEA create an enabling environment for innovative financial instruments to be applied. IUCN's Blue Natural Capital Financing Facility[110] and the Coalition for Private Investment in Conservation[111] are also examples of initiatives that provide guidance and technical assistance focused on building capacity and attracting investment for conservation.

East Asia's public-private partnerships

There are numerous insights and lessons learned in the region regarding the development and implementation of PPPs in environmental investments. The PEMSEA project on ***Development and Implementation of Public-Private Partnerships in Environmental Investments*** (PEMSEA 2011) showed that:

- Despite the declining levels of official development assistance (ODA), particularly for middle-income countries such as Vietnam, ODA remains an attractive option in securing private investment and supporting environmental infrastructure projects.
- Credible and sustainable cost-recovery mechanisms are important for gaining investor confidence. Sources of revenue to cover capital expenditures and operating costs need to be carefully analyzed and assessed to avoid shortfalls in revenues and difficulties in attracting investors.
- Clearly defined institutional arrangements among local governments and national government agencies lower risks and transaction costs for private sector partners.
- Capacity building for local government officials and local stakeholders enables better understanding and commitment to the proposed environmental projects.
- Political leadership and political will have critical impacts on project development and implementation. Commitment or buy-in from local leaders is critical for the continuity of efforts.
- Securing the commitment of local governments and communities to undertake environmental infrastructure projects in partnership with the private sector through awareness-raising and capacity-building activities takes time and requires investment of substantial human and financial resources.
- The role of the private sector and need for transparency and competition in the procurement process are not clearly defined in law, in policy or in practice in some countries.

These insights and lessons are directly relevant and can be applied in the context of investment in the transition towards a blue economy.

110 For further reading: https://bluenaturalcapital.org/
111 For further reading: http://cpicfinance.com/

Supporting resilient coastal economies in Vietnam:
Informing the operationalization of Vietnam's Marine
Strategy with international experiences

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