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ANALYSIS OF THE POLICY FRAMEWORK AND STAKEHOLDERS INVOLVED IN OECMs MANAGEMENT IN VIET NAM

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LIST OF ABBREVIATIONS

CBD	Convention on Biodiversity
COP	Conference of the Parties
FPIC	Free, Prior and Informed Conscent
ICCA	Indigenous Peoples and Community Conserved Territories and Areas
IUCN-WCPA	International Union for Conservation of Nature-World Commision on Protected Areas
LMMA	Locally Managed Marine Areas
MONRE	Ministry of Natural Resources and Environment
OECMs	Other effective Area-based Conservation Measures
PoWPA	Programme of Work on Protected Areas
PPA	Private Protected Areas
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
UNDP	United Nations Development Programme
UNEP-WCMC	United Nations Environment Programme-World Conservation Monitoring Centre
WWF-US	World Wildlife Fun-United States

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INTRODUCTION

The Convention on Biological Diversity (CBD) was signed at the United Nations Conference on Environment and Development in *Rio de Janeiro* on 5 June 1992 and entered into force on 29 December 1993. Up to now, 196 countries have joined this Convention and Viet Nam officially joined on November 16, 1994.

For the period 2010-2020, Parties to the CBD agreed on 20 targets under the Strategic Plan for Biodiversity 2011–2020 (Aichi targets). Target 11 called on Parties to conserve *"By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes"*. Thus, in addition to specific objectives, the CBD Convention also recommends that Contracting Parties pay special attention to "other effective area-based conservation measures" (OECMs).

OECMs are increasingly interested by countries around the world when drafting the Post-2020 Global Strategic Framework on Biodiversity, which calls on the Parties to the CBD Convention to strive *"By 2030, at least 30 per cent globally of land areas and of sea areas, especially areas of particular importance for biodiversity and its contributions to people, are conserved through effectively and equitably managed, ecologically representative and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes"*. Currently, the OECMs model has been deployed, achieving very important results in many countries around the world. According to information from IUCN (*https://www.protectedplanet.net/en/resources/april-2022-update-of-the-wdpa-and-wd-oecm*), by April 2022, eight countries have identified and reported 665 sites as meeting the OECMs criteria; these sites cover 1,764,000 km2 of the Earth's surface, accounting for 1,447,000 km2 of terrestrial and freshwater areas and 317,000 km2 of coastal and marine areas. While already constituting significant spatial coverage, the OECMs framework is about to experience a marked increase in global engagement due to the content of the above-mentioned draft Target 3 of the Global Biodiversity Framework.

According to the Ministry of Natural Resources and Environment (MONRE) – the national focal point for the implementation of the CBD Convention (MONRE, 2021), in 2020 in Viet Nam, the area of terrestrial protected areas accounts for about 7.0% of the land area and inland water and the area of marine protected areas accounts for about 0.185 % of the marine area, failing to meet the national targets mentioned

above in the National Strategy on Biodiversity to 2020, with a vision to 2030, promulgated together with Decision No. 1250/QD-TTg dated July 31, 2013 of the Prime Minister (*Targets to 2020, the area of terrestrial protected areas reaches 9% coverage and area of marine protected areas reaches 0.24% of the marine area*) as recommended by Target 11 Aichi. The relevant policies analysis shows that, without new area-based conservation solutions, Viet Nam cannot achieve the national targets as well as the CBD Convention's recommendations on the coverage of biodiversity conserved areas.

Despite being a member of the CBD Convention, Viet Nam currently has no legal regulations or tested OECMs while the country has many potential areas to become OECMs. For example, the area of protection forest alone (there are many protection forests that can meet the criteria as OECMs) with an area of 4,685,504 ha (MARD, 2020) has occupied 14.15% of the area on the continent of the country. Therefore, OECMs are a very potential area-based *in-situ* biodiversity conservation model, which should soon be researched, tested and proposed solutions for development in Viet Nam.

1. CBD Convention and IUCN Guidelines on OECMs

1.1. CBD's Voluntary Guidelines on OECMs

1.1.1. General introduction

Based on reference to the draft IUCN-WCPA guidelines and guidelines from other organizations, the CBD, through SBSTTA, has developed their own guidance for OECMs that was adopted at the Conference of the Parties in November 2018 (SBSTTA, 2018) and was called as Decision 14/8.

This is the most comprehensive decision by the Parties to the CBD Convention on Area-Based Conservation since the adoption of the Program of Work on Protected Areas in 2004 (PoWPA - Program of Work on Protected Areas; CBD; CBD). , 2004a). In addition to adopting the definition of OECMs, four Annexes to Decision 14/8 provide voluntary guidance on protected areas, OECMs, and scientific and technical advice on OECMs. These are summarized in this section:

- *Annex I* provides voluntary guidance on the integration of protected areas and OECMs into wider landscapes and seascapes. It also calls for mainstreaming protected areas and OECMs into key sectors, including agriculture, fisheries, forestry, mining, energy, tourism and transportation. Parties are called upon to support sectoral actors to integrate protected areas and OECMs within planning for lands and waters under their management as well as respecting existing protected areas, OECMs and other territories, lands and waters governed by Indigenous Peoples, local communities and private actors in their operations.

- *Annex II* provides voluntary guidance on effective governance models for management of protected areas, conserved areas and OECMs and sets out a number of steps for enhancing and supporting governance diversity2. It notes the particular circumstances of territories and areas under the governance of Indigenous Peoples and local communities, and calls for these steps to be taken only on the basis of free, prior and informed consent (FPIC) and based on respect for their rights, knowledge and institutions. Annex II also states that good governance principles should be applied to protected areas and OECMs. It explains that equity is one element of good governance, and sets out the three dimensions of equity, namely: recognition, procedure and distribution.

- *Annex III*, which is the focus of the next section of this paper, sets out scientific and technical advice on OECMs, including criteria for identifying and reporting against international biodiversity targets.

- Annex IV provides a set of considerations in achieving Aichi Biodiversity Target 11 (which was still then extant) in marine and coastal areas. Among other things, it calls for adequate monitoring and evaluation frameworks to measure whether areas are achieving effective, long-term conservation outcomes.

Parties to the CBD Convention adopted the following definition on OECMs: "*A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values*" (CBD Decision 14/8, 2018: Paragraph 2)

1.1.2. Criteria for identifying OECMs

Four criteria for identifying OECMs of the CBD as follows:

A. the area is not currently recognized as a protected area;

B. the area is governed and managed;

C. the area achieves sustained and effective contribution to in situ conservation of biodiversity; and

D. associated ecosystem functions and services and cultural, spiritual, socio-economic and other locally relevant values are respected, upheld and supported (CBD, 2018: 12–13).

These four criteria are further articulated through 10 sub-criteria and 26 indicators (set out in Section B, Annex III, Decision 14/8).

CBD also notes that: Guiding principles, general characteristics and criteria for determining other effective area-based conservation measures that are applicable to all ecosystems present or potentially important to biodiversity and should be applied flexibly and on a case-by-case basis (CBD, 2018: 10).

Table 1. Criteria for identifying OECMs, provide guidance on OEMS

Criterion B: Area is governed and managed	
Geographically defined space	- Size and area are described, including in three dimensions where necessary. - Boundaries are geographically delineated.
Legitimate governance authorities	- Governance has legitimate authority and is appropriate for achieving *in situ* conservation of biodiversity within the area. - Governance by indigenous peoples and local communities is self-identified in accordance with national legislation and applicable international obligations. - Governance reflects the equity considerations adopted in the Convention. - Governance may be by a single authority and/or organization or through collaboration among relevant authorities and provides the ability to address threats collectively.
Managed	- Managed in ways that achieve positive and sustained outcomes for the conservation of biological diversity. - Relevant authorities and stakeholders are identified and involved in management. - A management system is in place that contributes to sustaining the *in situ* conservation of biodiversity. - Management is consistent with the ecosystem approach with the ability to adapt to achieve expected biodiversity conservation outcomes, including long-term outcomes, and including the ability to manage a new threat.
Criterion C: Achieves sustained and effective contribution to *in situ* conservation of biodiversity	
Effective	- The area achieves, or is expected to achieve, positive and sustained outcomes for the *in situ* conservation of biodiversity.

	- Threats, existing or reasonably anticipated ones are addressed effectively by preventing, significantly reducing or eliminating them, and by restoring degraded ecosystems. - Mechanisms, such as policy frameworks and regulations, are in place to recognize and respond to new threats. - To the extent relevant and possible, management inside and outside the other effective area-based conservation measure is integrated
Sustained over long term	-The other effective area-based conservation measures are in place for the long term or are likely to be. - 'Sustained' pertains to the continuity of governance and management and 'long term' pertains to the biodiversity outcome.
***In situ* conservation of biological diversity**	Recognition of other effective area-based conservation measures is expected to include the identification of the range of biodiversity attributes for which the site is considered important (e.g. communities of rare, threatened or endangered species, representative natural ecosystems, range restricted species, key biodiversity areas, areas providing critical ecosystem functions and services, areas for ecological connectivity)
information and monitoring	- Identification of other effective area-based conservation measures should, to the extent possible, document the known biodiversity attributes, as well as, where relevant, cultural and/or spiritual values, of the area and the governance and management in place as a baseline for assessing effectiveness. - A monitoring system informs management on the effectiveness of measures with respect to biodiversity, including the health of ecosystems. - Processes should be in place to evaluate the effectiveness of governance and management, including with respect to equity. - General data of the area such as boundaries, aim and governance are available information.
Criterion D: Associated ecosystem functions and services and cultural, spiritual, socio-economic and other **locally relevant values**	
Ecosystem functions and	- Ecosystem functions and services are supported, including those of importance to indigenous peoples and local communities, for other effective area-based conservation measures concerning their territories, taking into account interactions and trade-offs among ecosystem functions

services	and services, with a view to ensuring positive biodiversity outcomes and equity. - Management to enhance one particular ecosystem function or service does not impact negatively on the sites [sic] overall biological diversity.
Ecosystem functions and services	- Ecosystem functions and services are supported, including those of importance to indigenous peoples and local communities, for other effective area-based conservation measures concerning their territories, taking into account interactions and trade-offs among ecosystem functions and services, with a view to ensuring positive biodiversity outcomes and equity. - Management to enhance one particular ecosystem function or service does not impact negatively on the sites [sic] overall biological diversity. **Cultural,**
Cultural, spiritual, socioeconomic and **other locally relevant values**	- Governance and management measures identify, respect and uphold the cultural, spiritual, socio-economic, and other locally relevant values of the area, where such values exist. - Governance and management measures respect and uphold the knowledge, practices and institutions that are fundamental for the *in situ* conservation of biodiversity.

Source: Annex III, CBD Decision 14/8: 12

Box 1. Guiding Principle and Common Characteristics of OECMs

(a) Other effective area-based conservation measures have a significant biodiversity value, or have objectives to achieve this, which is the basis for their consideration to achieve Target 11 of Strategic Goal C of the Strategic Plan for Biodiversity 2011-2020;

b) Other effective area-based conservation measures have an important role in the conservation of biodiversity and ecosystem functions and services, complementary to protected areas and contributing to the coherence and connectivity of protected area networks, as well as in mainstreaming biodiversity into other uses in land and sea, and across sectors. Other effective area-based conservation measures should, therefore, strengthen the existing protected area networks, as appropriate;

(c) Other effective area-based conservation measures reflect an opportunity to provide in situ conservation of biodiversity over the long-term in marine, terrestrial

and freshwater ecosystems. They may allow for sustainable human activities while offering a clear benefit to biodiversity conservation. By recognizing an area, there is an incentive for sustaining existing biodiversity values and improving biodiversity conservation outcomes;

(d) Other effective area-based conservation measures deliver biodiversity outcomes of comparable importance to and complementary with those of protected areas; this includes their contribution to representativeness, the coverage of areas important for biodiversity and associated ecosystem functions and services, connectivity and integration in wider landscapes and seascapes, as well as management effectiveness and equity requirements;

(e) Other effective area-based conservation measures, with relevant scientific and technical information and knowledge, have the potential to demonstrate positive biodiversity outcomes by successfully conserving in situ species, habitat and ecosystems and associated ecosystem functions and services and by preventing, reducing or eliminating existing, or potential threats, and increasing resilience. Management of other effective area-based conservation measures is consistent with the ecosystem approach and the precautionary approach, providing the ability to adapt to achieve biodiversity outcomes, including long-term outcomes, inter alia, the ability to manage a new threat;

(f) Other effective area-based conservation measures can help deliver greater representativeness and connectivity in protected area systems and thus may help address larger and pervasive threats to the components of biodiversity and ecosystem functions and services, and enhance resilience, including with regard to climate change;

(g) Recognition of other effective area-based conservation measures should follow appropriate consultation with relevant governance authorities, land owners and rights owners, stakeholders and the public;

(h) Recognition of other effective area-based conservation measures should be supported by measures to enhance the governance capacity of their legitimate authorities and secure their positive and sustained outcomes for biodiversity, including, inter alia, policy frameworks and regulations to prevent and respond to threats;

(i) Recognition of other effective area-based conservation measures in areas within the territories of indigenous peoples and local communities should be on the basis of self-identification and with their free, prior and informed consent, as

appropriate, and consistent with national policies, regulations and circumstances, and applicable international obligations;

(j) Areas conserved for cultural and spiritual values, and governance and management that respect and are informed by cultural and spiritual values, often result in positive biodiversity outcomes;

(k) Other effective area-based conservation measures recognize, promote and make visible the roles of different governance systems and actors in biodiversity conservation; Incentives to ensure effectiveness can include a range of social and ecological benefits, including empowerment of indigenous peoples and local communities;

(l) The best available scientific information, and indigenous and local knowledge, should be used in line with international obligations and frameworks, such as the United Nations Declaration on the Rights of Indigenous Peoples, and instruments, decisions and guidelines of the Convention on Biological Diversity, for recognizing other effective area-based conservation measures, delimiting their location and size, informing management approaches and measuring performance;

(m) It is important that other effective area-based conservation measures be documented in a transparent manner to provide for a relevant evaluation of the effectiveness, functionality and relevance in the context of Target 11.

Source: Annex III, CBD Decision 14/8

1. 1.3. Analysis of some content of CBD Voluntary Guidelines and Scientific and Technical Advice on OECMs

a) The possible application of Criteria B–D on effective area-based conservation measures to both OECMs and protected areas has several implications for all forms of conservation, including areas that are conserved de facto outside of these frameworks. In this context, we explore four key issues – good governance, conservation effectiveness, assessment and reporting – and then discuss some of the implications specifically for non-state actors, namely, Indigenous Peoples and/or local communities, and private landowners.

(1-2) *Good governance and conservation effectiveness:* Annexes II and III of Decision 14/8 recognise that good governance is an essential requirement for effective conservation and that protected areas and OECMs should be characterised by diverse, effective and equitable governance models (as ends in themselves). The recent trajectory of CBD guidance has been increasingly inclusive of diverse approaches to

how areas are managed. We infer from this that Parties' emphasis on 'management systems' arises from the understanding that effective conservation can result from a diversity of approaches, including those applied by Indigenous Peoples, local communities and private entities, many of which are also imbued with cultural and spiritual values consistent with conservation (Verschuuren et al., 2021).

The CBD's guidance on what constitutes long -term, effective in situ conservation of biodiversity – set out in Criterion C of Annex III (see Table 1) – is an important new addition to existing guidance on management effectiveness (CBD, 2004a). Parties to the CBD also agree that 'effective' areas should be 'governed and managed in ways that achieve positive and sustained long term outcomes for the in situ conservation of biodiversity' (CBD, 2018: 12). Criterion C therefore underscores that the central indicator of effective area-based conservation is not area coverage, per se, but the areas' governance qualities, biodiversity values and conservation outcomes.

(3-4) Assessing and reporting equitable and effective area-based conservation: Assessing and reporting on area- based conservation will likely continue to be an important, yet challenging, issue in the implementation of the Post-2020 Global Biodiversity Framework (Visconti et al., 2019; Geldmann et al., 2021). It is found that report, preparing by some national actors informed on achievement of Aichi Target 11 via the World Databases on Protected Areas and OECMs, included some protected areas that are currently not effective, and/or do not meet the CBD's latest guidance on good governance and equity (Geldmann et al., 2019; Visconti et al., 2019; Zafra Calvo & Geldmann, 2020).

b) Implications for Indigenous Peoples and/or local communities:

It is extremely important that the methods and indicators for the evaluation of OECMs be applied on the basis of FPIC (free, prior and informed consent). To achieve this, they need to be developed and implemented by Indigenous Peoples and local communities or by their chosen people.

According to available data at present, 1,534 protected areas worldwide are recorded as being governed by Indigenous Peoples and/or local communities (UNEP-WCMC & IUCN, 2021). The emphasis within Decision 14/8 on rights, legitimate and equitable governance, cultural and spiritual values and knowledge, practices and institutions affirms Indigenous Peoples' and local communities' long-held demands that these are respected and upheld in the context of conservation initiatives. Thus, OECMs present an important additional means by which to recognise and support the diverse contributions of Indigenous Peoples' and local communities' territories and areas to nature conservation (IUCN-WCPA, 2019).

c) Implications for private landowners:

As considered above in relation to Indigenous Peoples and local communities, there exist similar kinds of opportunities and risks for private landowners, including that OECM-related frameworks and processes could be applied in ways that infringe upon their rights. New obligations with regards to CBD-defined monitoring requirements and assessments of equitable governance would need to be clearly and transparently outlined, agreed to and progressively addressed by private landowners.

There are currently 16,223 reported PPAs globally (UNEP-WCMC & IUCN, 2021) and many more that remain unreported (Fitzsimons, 2015; Bingham et al., 2017)

d) Implications for OECMs managed across different economic sectors:

OECMs represent a new opportunity to recognise biodiversity conservation potential from a wider range of spatial management measures than ever before, particularly those managed by actors operating across a range of economic sectors. There is now a clear opportunity for the uptake of the CBD criteria discussed here by sectoral actors, to better ensure that biodiversity conservation is an outcome of their management of lands, inland waters, coasts and marine areas. Progress in this regard is highly relevant to reconciling biodiversity conservation and sustainable development goals.

In sum, over the past twenty years the international law and policy of area-based conservation has evolved from a model largely dominated by state-governed protected areas to one that is more inclusive of non-state actors and efforts occurring beyond protected areas, more explicit about its recognition of and support for diverse, effective and equitable forms of governance, and increasingly focused on effective and long-term in situ conservation outcomes. The guidance and advice provided by the Parties to the CBD in Decision 14/8 represents a meaningful contribution to the transformative changes required to address our current interconnected planetary crises (IPBES, 2019; CBD, 2020) and creates a new model of conserved areas.

1.2. IUCN Guidelines on OECMs

1.2.1. General introduction

The latest document published by IUCN on OECMs is *"Recognizing and reporting other effective area-based conservation measures, 2019"*. We used these Guidelines for research. In addition, we also referred to the *"Draft Site-level methodology for identifying other effective area-based conservation measures (OECMs)"* is being prepared by IUCN. Here are some key takeaways from this report:

- *OECMs classification:*

In addition to the definition of OECMs, IUCN also provides three types of OECMs:

(i) Primary conservation areas, these areas have the potential to become protected areas,

(ii) The area where conservation issues are secondary (secondary conservation),

(iii) The area subject to conservation issues is ancillary (ancillary conservation).

The three types mentioned above are completely outside the protected area.

- *OECMs criteria:*

IUCN has set out criteria to identify OECMs, including:

(i) Areas that are zoned for conservation but are not protected areas;

(ii) Areas managed;

(iii) Areas that achieve long-term effects on biodiversity conservation and contribute to *in-situ* conservation,

(iv) Areas have associated ecological functions, with service, cultural, spiritual, socio-economic values for the locality.

- *OECMs screening tool:*

IUCN has introduced a screening tool to be understood as a support tool in the process of reviewing and selecting OECMs, including:

(i) Ensure that the OECMs area has not been recognized or designated as a protected area,

(ii) Ensure that the site has the characteristics of a OECMs,

(iii) Ensure long-term conservation measures,

(iv) Ensure *in-situ* conservation objectives according to Aichi 11 Target.

1.2.2. IUCN's Methodology, criteria for identifying OECMs

1. This report uses IUCN's approach and guidelines to identify potential OECMs (*Marnewick, D., Jonas H. and Stevens C. (Draft), 2020: Site-level methodology for identifying other effective area-based conservation measures (OECMs). IUCN: Gland, Switzerland*), specifically the screening of potential OECMs is done according to the instructions in Step 1 of this approach.

General information about the methodology

This methodology enables potential OECMs to be identified based on the CBD OECMs criteria and individual sites to be assessed on a case-by-case basis. This methodology is suitable for the assessment of any potential site or ecosystem on land or in coastal or marine areas.

Procedure for identifying OECMs

The methodology for identifying OECMs consists of three steps, which should be followed sequentially. It is essential not to bypass any steps. For example, a full assessment of a site (Step 3) cannot be undertaken until the governance authority has given consent to an assessment (Step 2).

Step 1 contains the screening tool that enables a determination of whether a site is a 'potential OECM' and therefore could be assessed against the criteria of an OECM, subject to consent from the legitimate governance authority (Step 2).

Step 2 provides for the legitimate governance authority to clearly state whether consent to an assessment has been given; the standard for Indigenous peoples and local communities being free, prior and informed consent. Without consent from the legitimate governance authority, the site cannot be assessed. In cases where consent is given, the area becomes a 'candidate OECMs'. Step 2 also provides for the details of the candidate OECMs and its assessee/s and assessor/s to be captured.

Step 3 contains an assessment tool that enables a rigorous application of the CBD criteria of an OECMs (CBD, 2018) to individual 'candidate OECMs'. The assessment tool allows for each 'candidate OECMs' to be assessed on its own merits in order to determine whether it qualifies as an OECMs. The assessment tool contains criteria-based questions and a grading rating scale which is intended to accommodate variability across country contexts and the uniqueness of OECMs.

The screening (step 1) of a potential area of OECMs should be conducted according to the following four criteria:

1. Has geographically delineated boundaries and is not a protected area;

2. Has a sustained governance authority and management regime;

3. Has important biodiversity values; and

4. Delivers the effective and long-term *in-situ* conservation of biodiversity.

There is a test for each criterion.

Table 2. 04 tests to screen potential OECMs sites

Test	Quetions	Answers
Test 1: The site has **geographically defined boundaries** and is **not a protected area.** Protected areas and OECMs are mutually exclusive. Sites within a protected are cannot be recognized as an OECMs.	1.1 Is the site **geographically delineated**, with agreed and demarcated boundaries?	- No (Not potential OECMs) - Yes
	1.2 Is the whole site, or the part being assessed as an OECM, **outside** of a protected area?	- No (Not potential OECMs) - Yes
Test 2: There is **sustained governance and management** of the site. 'Governed' implies that the area is under the authority of a specified entity, or an agreed upon combination of entities. 'Managed' implies the area is actively managed, but may include a decision to leave the area untouched. The governance and management should be 'sustained', i.e. expected to continue for the foreseeable future.	2.1 Is the site under the **governance authority** of a specified entity or an agreed upon combination of entities?	- No (Not potential OECMs) - Yes
	2.2 Is the site subject to a **management** regime which contributes to the *in-situ* conservation of biodiversity?	- No (Not potential OECMs) - Yes
	2.3 Is the governance and management **'sustained**', i.e. expected to continue for the foreseeable future?	- No (Not potential OECMs) - Yes

Test 3: The site has **biodiversity values** for which the area is considered important. OECMs include the identification of the range of biodiversity values for which the site is considered important, e.g. communities of threatened and/or range restricted species, representative natural ecosystems, species, Key Biodiversity Areas, areas providing critical ecosystem functions and services, areas for ecological connectivity. OECMs are expected to achieve the *in-situ* conservation of nature as a whole, rather than only selected elements of biodiversity.	3. Is there a strong likelihood that the area contains important **biodiversity values**?	- No (Not potential OECMs) - Yes
Test 4: The sustained governance and management of the site delivers the **effective and long-term *in-situ* conservation of biodiversity**. OECMs should achieve effective and long term contributions to *in-situ* conservation of biodiversity. This is achieved through several elements, i.e. achieving positive conservation outcomes, viable size of site, and ability to manage and mitigate threats.	4.1 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the **effective *in-situ* conservation** of biodiversity through legal or other effective means?	- No (Not potential OECMs) - Yes
	4.2 Is there a strong likelihood that the sustained governance and management of the site is expected to deliver the **long- term *in-situ* conservation** of biodiversity through legal or other effective means?	- No (Not potential OECMs) - Yes

Source: Marnewick, D., Jonas H. and Stevens C. (Draft), 2020

A site that meets all four of the above criteria is considered as potential OECMs; In some cases, as long as one criterion is not met, the site is not considered as potential OECMs.

1.2.3. Relationship between OECMs and protected areas

a) Conservation objectives:

Protected areas and OECMs are distinct but highly complementary within landscapes, seascapes and river basins. Protected areas have a primary conservation objective, i.e., they are areas dedicated to the conservation of biodiversity and managed accordingly. In contrast, OECMs do not need to be dedicated to the conservation of nature but must deliver the effective and long-term in situ conservation of biodiversity. The types of approaches that deliver conservation performance in the OECMs include:

(1) Ancillary conservation refers to a process whereby in situ conservation is delivered as a by-product of management activities, even though biodiversity conservation is not a management objective.

Box 2. Potential OECMs sites of auxiliary conservation type

Ancillary conservation (Type 3) may include:

Sacred natural sites with high biodiversity values that are conserved in the long-term for their associations with one or more faith groups (e.g. Matallana-Tobón et al., 2018*).

Military lands and waters, or portions of military lands and waters that are managed for the purpose of defense, do not have a secondary objective of biodiversity conservation, but achieve the effective conservation of biodiversity in the long term.

Sources: ttps://www.conservation2020canada.ca/s/IUCN-Areas-likely-or-unlikely-to-qualify-as-OECMs.docx. (Areas likely or unlikely to qualify as OECMs – IUCN 2019)

(2) "Secondary conservation" (Type 2) is achieved through the active management of an area where biodiversity outcomes are a secondary management objective.

Box 3. Potential OECMs sites of secondary conservation type

Secondary conservation (Type 2) may include:

- Territories and areas managed by indigenous peoples and/ or local communities (ICCAs, or sections of these areas) to maintain natural or near-natural ecosystems, with low levels of use of natural resources practised on a sustainable basis and in a way that does not degrade the area's biodiversity. This includes coastal and marine areas where local community-based harvesting and management practices result in de facto conservation of fish populations, habitats and other associated marine biodiversity such as some locally managed marine areas (LMMAs) (Jupiter et al., 2014).

- Traditional management systems that maintain high levels of associated biodiversity. These could include certain agricultural or forest management systems that maintain native species and their habitat (e.g. Eghenter, 2018; Mwamidi et al., 2018*).

- Urban or municipal parks managed primarily for public recreation but which are large enough and sufficiently natural to also effectively achieve the in-situ conservation of biodiversity (e.g. wild grassland, wetlands) and which are managed to maintain these biodiversity values (e.g. Gray et al., 2018).

- Military lands and waters, or portions of military lands and waters that are primarily managed for the purpose of defence, but with specific secondary objectives focused on the conservation of biodiversity. Canadian Forces Base Shilo, located in the mixed-grass prairie ecosystem of south-central Manitoba (Canada), was proposed by Canada as an OECMs in 2019.

- Watersheds or other areas managed primarily for water resource management that also result in the in-situ conservation of biodiversity. This can include, for example, water meadows, riverine forest, coastal forests, wetlands, streams, upland catchments, or other areas managed for long-term soil and slope stabilisation, flood mitigation, or other ecosystem services (e.g. Matallana-Tobón et al., 2018*).

- Hunting reserves that maintain natural habitats and other flora and fauna as well as viable populations of hunted and non-hunted native species.

- Areas successfully restored from degraded or threatened ecosystems, to provide important ecosystem services but which also contribute to effective biodiversity conservation, e.g. freshwater and coastal wetlands restored for flood protection.

- Areas that contribute to conservation because of their role in connecting protected areas and other areas of particular importance for the conservation of biodiversity, thereby contributing to the long-term viability of larger ecosystems (e.g. Waithaka & Warigia Njoroge, 2018*).

Source: ttps://www.conservation2020canada.ca/s/IUCN-Areas-likely-or-unlikely-to-qualify-as-OECMs.docx. (Areas likely or unlikely to qualify as OECMs – IUCN 2019)

(3) Areas with ***a primary conservation*** *objective* meet the definition of a protected area but may not be officially designated as such because a) the particular types of areas cannot be designated as protected areas, such as territories and areas conserved by Indigenous peoples and local communities (ICCAs/territories of life) in countries in which the protected area laws and policies do not yet recognize their governance of protected areas; or b) the governance authority does not want the area to be recognized or reported as a protected area.

Box 4. Potential OECMs sites of the primary conservation category

Primary conservation (Type 1) may include:

- Some territories or areas (marine, freshwater or terrestrial) governed by indigenous peoples, local communities or private entities that have a primary and explicit conservation objective and deliver the in-situ conservation of biodiversity, but where the governing body wishes the territories or areas to be recognised and reported as OECMs, rather than as protected areas.

- Privately conserved areas, which are managed with a specific conservation objective but which are not recognized as protected areas under national legislation (Mitchell et al., 2018), e.g. ecosystem restoration areas in Indonesia (Utomo and Walsh, 2018*).

- Areas that include Key Biodiversity Areas, managed in ways that deliver long-term in-situ conservation of biodiversity through, for example, regulation or other effective approaches.

- Some permanently set-aside areas of a managed forest, such as old-growth, primary, or other high-biodiversity value forests, which are protected from both forestry and non-forestry threats.

- Some natural areas managed by universities for biological research.

Source: ttps://www.conservation2020canada.ca/s/IUCN-Areas-likely-or-unlikely-to-qualify-as-OECMs.docx. (Areas likely or unlikely to qualify as OECMs – IUCN 2019)

Box 5. Examples of sectors and management modes that are unlikely to qualify as OECMs:

- Small, semi-natural areas within an intensively-managed landscape with limited biodiversity conservation value, such as municipal parks, formal/domestic gardens, arboreta, field margins, roadside verges, hedgerows, narrow shoreline or watercourse setbacks, firebreaks, recreational beaches, marinas and golf courses.

- Forests that are managed commercially for timber supply and are intended for logging, even though they may have some conservation values and support some species of interest. Such areas should be considered as contributing to Aichi Target 7.

- Agricultural lands which are managed in a manner that limits the in-situ conservation of biodiversity. This may include, for example, pastures that are grazed too intensively to support native grassland ecosystems or species, or grasslands replanted with monocultures or non-native species for the purposes of livestock production.

- Temporary agricultural set aides, summer fallow and grant-maintained changes to agricultural practice that may benefit biodiversity.

- Conservation measures that apply to a single species or group of species, over a wide geographical range such as hunting regulations or whale-watching rules; these are better considered as being part of wider species conservation measures (Targets 5, 6, 7 and/or 12).

b) OECMs have been reported with all IUCN governance types (with the exception of for-profit organizations and transboundary governance):

- Non-Profit organization;

- Federal or national ministry or Agency, Subnational ministry or agency; Government-delegated Management

- Collaborative governance;

- Joint governance;

- Indigenous peoples, Local communities;

- Individual Landownders.

c) Information and reports

Like protected areas, OECMs can be reported internationally, and UNEP-WCMC manages both the World Database on Protected Areas (WDPA) and on OECMs (WD-OECMs). Sites that meet the OECMs criteria can be reported to the WD-OECMs based on the free, prior and informed consent of the relevant governance authorities. They can be reported by government agencies directly, and by other actors subject to third-party verification.

(World database of OECMs: protectedplanet.net/en/thematic-areas/oecms?tab=OECMs and guidance on reporting: wcmc.io/oecm_guidance. Third-party verifiers may include NGOs such as WWF-US and national WWF offices.)

Beyond protected areas and OECMs, there remain other 'conserved areas' that deliver the long-term conservation of biodiversity but a) either have not yet been designated as protected areas, b) assessed to be OECMs (according to all relevant rights, including the right to provide or withhold their free, prior and informed consent), or c) their governance authorities have actively decided against the area being designed or identified as such. In this context, OECMs are conserved areas that have been assessed against and met the CBD criteria for an OECMs, in full accordance with the rights of the governance authorities.

1.3. The role and benefits of OECMs

- Building networks connecting protected areas by conserving important ecosystems, habitats and wildlife corridors outside and between protected areas;

- Support the restoration of threatened species ;

- Maintain ecosystem functions and ensure ecosystem services;

- Increased resilience to harmful activities and threats;

- Retain and connect remnants of fragmented ecosystems;

- Contribute to a well-connected and ecologically representative conservation network, integrated in the broader terrestrial and marine landscapes (including transboundary areas);

- Provides the opportunity to engage with and support a range of existing partners in conservation efforts from local to global;

- Recognizing the efforts of sectors with existing area-based management measures to contribute to biodiversity conservation;

- Inspire OECMS designation in underserved areas;

- Recognize and encourage the establishment of areas that achieve long-term *in situ* conservation of biodiversity in landscapes and marine landscapes that are managed primarily for sustainable (or even unsustainable) uses), and

- Shifting industry practices that may not be sustainable to activities that deliver long-term conservation results.

1.4. Current status, opportunities and challenges for OECMs in the world

1.4.1. Global status and emerging trends

As of April 2022, 665 OECMs have been reported to the World Database on OECMs across eight countries and territories (UNEP-WCMC & IUCN, 2022, Appendix II). OECMs now cover 1,764,000 km^2 of the Earth's surface, accounting for 1,447,000 km2 on land and 317,000 km^2 in the ocean.

a) Coverage of OECMs on a global and national scale

While the current global figures for OECMs are dwarfed by those for protected areas (270,000 across 245 countries and territories, covering c. 28,718,000 km^2 in the ocean and 21,224,000 km^2 on land), the reported OECMs already make a notable impact on global statistics. After only four years since the CBD agreed on the definition of and criteria for an OECMs (CBD, 2018), the addition of terrestrial OECMs increased global coverage of protected areas and OECMs from 15.7% to 16.8%, a fact that enabled the Protected Planet Report 2020 (UNEP-WCMC & IUCN, 2021) to conclude that Aichi Biodiversity Target 11's 17% terrestrial and freshwater coverage target had been achieved.

b) Size and Governance Type

OECMs vary greatly in size. The largest site of any governance type is Ahaggar Cultural Park in Algeria (over 544,000 km^2), and the smallest is La Braye de Lihou Site of Special Significance in Guernsey (0.008 km^2).

OECMs have been reported with all IUCN governance types (with the exception of for-profit organizations and transboundary governance), including: Non-Profit organization; Federal or national ministry or Agency, Subnational ministry or agency; Government-delegated Management; Collaborative governance; Joint governance; Indigenous peoples, Local communities; and Individual Landownders.

c) Types of OECMs according to management objectives:

Among the OECMs reported so far, 43% have conservation as a primary management objective and 33% have conservation as a secondary objective. These findings, coupled with the fact that no OECMs have yet been reported in the 'ancillary' category (meaning that conservation is neither a primary nor a secondary objective), are surprising.

d) Contribution to Ecological Representation

OECMs are shown to enhance ecological representation in all of the countries and territories that have reported data. In these countries and territories, there are terrestrial ecoregions where OECMs provide coverage above that provided by protected areas alone. In Morocco and Eswatini, this is true of 100% of terrestrial ecoregions. Of the countries and territories with national waters, 71% have marine ecoregions or pelagic provinces where OECMs provide additional coverage.

e) Contribution to Coverage of Key Biodiversity Areas

Over a quarter (27%) of OECMs reported to date overlap with a Key Biodiversity Area (KBA), and OECMs provide additional coverage to KBAs beyond that provided by protected areas in all countries and territories except Colombia. This is most apparent in Eswatini, where 75% of OECMs overlap with a KBA.

1.4.2. Opportunities and Challenges for OECMs

According to WWF-US analysis (*Backing the Stewards of Nature: Supporting local approaches to global conservation targets through 'other effective area-based conservation measures'. Washington, DC: WWF-US, 2022)*, the world nowadays is

having many opportunities as well as facing with different challenges in terms of OECMs

Opportunity 1: The OECMs framework provides an important opportunity to engage a wide diversity of governance authorities through rights-based approaches in ways that promote the three dimensions of equity, namely recognition, procedure, and distribution (CBD, 2018)

Opportunity 2: The OECMs framework, together with protected areas, is enabling greater ecological representativity, including through recognition of areas important for biodiversity significance outside protected areas, such as Key Biodiversity Areas (KBAs) and, likely in the future, areas such as Important Plant Areas (IPAs), Important Bird Areas (IBAs), Important Marine Mammal Areas (IMMAs), and Ecologically or Biologically Significant Marine Areas (EBSAs).

Opportunity 3: Many OECMs will likely contribute to enhancing the provision of ecosystem services and other values and benefits to people at a range of scales, from local livelihoods to regional water supplies and global climate regulation.

Opportunity 4: Better recognition of and support for OECMs can bolster the larger conservation system's resilience to political or planning shifts.

In sum, OECMs contribute to local livelihoods as well as to global biodiversity and climate change targets by supporting important ecosystems, habitats, and wildlife/climate corridors, promoting the recovery of threatened species, maintaining ecosystem functions and services, enhancing resilience to internal and external threats, and retaining and connecting remnants of fragmented ecosystems in degraded landscapes. Yet these opportunities are matched by a range of significant challenges and questions.

Challenge 1: There is a worldwide gap in knowledge and expertise of and engagement with OECMs. Very few people and institutions, among the large number and great diversity of relevant rights holders and stakeholders, know about or have begun to engage with the OECMs framework.

Challenge 2: There is a risk that the OECMs framework will be misused. This might occur in at least three ways as follows:

- *First*, in a rush to report OECMs toward Target 3, Parties to the CBD may infringe the rights and interests of Indigenous peoples, local communities, and other rights holders and stakeholders.

- *Second,* there are concerns that Parties and sectoral actors may report areas as OECMs that do not meet the CBD ecological criteria, such as areas low in biodiversity and ecosystem values.

- *Third,* some countries may consider OECMs to be a cheaper option than protected areas and change the designation of protected areas to OECMs.

Challenge 3: There is a need for greater focus on the social and ecological assessment and monitoring of sites. Sites need to be carefully assessed to be identified and monitored and remain reported as OECMs, which raises practical challenges.

The above opportunities and challenges arise in different ways per type of governance authority.

1.5. Proposing potential OECMs candidates in Viet Nam

The recommendations for OECMs classification and identification of non-OECMs made by the IUCN in boxes 2, 3, 4 and 5 above are very valuable guiding information. Therefore, in the next studies, Viet Nam needs to conduct a document review, even investigation and survey at the sites to find the corresponding objects in the territory of Viet Nam. Within the scope of this report, the Expert Group conducted a quick review on the basis of current legal regulations to make preliminary judgments on potential OECMs in Viet Nam.

Base on ecosystem approach, the potential OECMs candidates can find out the following ecosystems:

- Forest ecosystem including protection forest, natural production forest, buffer zone of protected areas and some types of special use forest areas outside of protected areas.

- Wetland ecosystems: important wetland areas.

- Limestone mountain ecosystems.

- Marine ecosystems: buffer zone of marine protected areas, aquatic resource protection zones.

There are detail potential OECMs candidates as following:

1) Type 1 OECMs - primary conservation:

Potential OECMs type 1 – primary conservation may include:

- Natural protection forest areas: they can become OECMs with geographically defined areas, forest owners determined.

- Natural production forest areas having sustainable forest management plans approved by the competent authority: they are scattered in production forest but protected, managed and assigned organizations or individual groups.

- High biodiversity value areas outside protected areas according to Law on planning 2017. Then, in the Law on Environmental Protection 2020 and guiding documents regulated the high biodiversity area is a natural heritage; stipulate the basic concept and criteria to define this object.

2) Type 2 OECMs – secondary conservation:

Potential OECMs type 2 – secondary conservation may include:

- Biodiversity conservation corridors (BCC): defined by biodiversity law, BCC means an area connecting natural ecological regions in which organisms living in these regions can interact. Now, Viet Nam planed 33 BCC (the BCC list attached this report). Of these there are three BCC established including: the BCC connecting protected areas of Song Thanh – Sao La – Voi in Quang Nam province; the BCC connecting protected areas of Dackrong – Bac Huong Hoa in Quang Tri province; the BCC connecting protected areas of Sao La – Phong Dien in Thua Thien Hue province.

- Important wetlands: regulated by Decree 66/2019/NĐ-CP dated July 29, 2019; Circulars 07/2020/TT-BTNTM dated August 31, 2020 regulating detail Point c, Clause 1, Article 31 of Decree 66/2019/NĐ-CP. Now, Ministry of Natural Resources and Environment (MONRE) is drafting the list of Important wetland areas around the country base on propose of provinces (the list of important wetland areas attached this report).

- The buffer zones of protected areas: they are determined in decision on establishment of protected areas.

3) Type 3 OECMs – ancillary conservation:

Potential OECMs type - ancillary conservation may include:

- Important ecological landscapes according to Planning Law 2017, they have values of environment, ecology or other values: aesthetics, entertainment, culture…. These objects are outsides protected areas that not only supply main services for tourism activities and environmental and ecological values for human life but also biodiversity conservation.

- Private conservation facilities: Now there are some ones established for entertainment activities including: Mango Garden Ecotourism Company Limited (Dong Nai), Phu Quoc Safari (Kien Giang), Ninh Binh Bear Conservation Facility (Ninh Binh), ...

- National tourism areas: 49 have been identified with the potential to become a national tourist area across the country, of which 7 have been recognized (Sapa National Tourist Area, Lao Cai Province, Northern Midlands and Mountains, Northern Midlands and Mountainous Areas). national tourism site Hung Temple, Phu Tho Province, Northern Midlands and Mountains, Tra Co National Tourist Area, Quang

Ninh Province, Red River Delta and Northeast Coast, Tam Dao National Tourist Area, Vinh Phuc province, Red River Delta and Northeast Coast, Phan Thiet - Mui Ne National Tourist Area, Binh Thuan Province, South Central Coast region, Tuyen Lam Lake National Tourist Area, Lam Dong Province, Central Highlands, Sam Mountain National Tourist Area, An Giang Province, Mekong River Delta). Many of these 49 national tousism areas have high biodiversity because they are containing protected areas or important wetland areas.

In addition to the objects with a large area mentioned above, there is a number of other potential objects with a small area and not concentrated, spreading across all regions of the country such as:

+ *Sacred forests* according to Clause 8, Article 2 of the Law on Forestry: "8. Sacred forest is a forest associated with the beliefs, customs and practices of the community living on the forest";

+ *Geographical areas assigned to community organizations to manage* in the protection of aquatic resources according to Clauses 4 and 5, Article 3 of the Law on Fisheries: "4. Co-management is a management method in which the State shares powers and responsibilities with community organizations participating in management in the protection of aquatic resources; 5. Community organizations participating in co-management in the protection of aquatic resources (hereinafter referred to as community organizations) are organizations in which members voluntarily participate, jointly manage and share benefits, to protect aquatic resources in a defined geographical area, with or without legal person status, recognized by competent state agencies and assigned the right to participate in co-management";

+ *Areas where fishing is prohibited for a definite period* according to Clause 4, Article 13 of the Law on Fisheries: "4. The Minister of Agriculture and Rural Development shall stipulate criteria and promulgate a list of occupations and fishing gear banned from fishing; List of areas banned from fishing for a definite time.

+ LMMA (locally managed marine area) areas: In Viet Nam, there are no legal documents directly regulating LMMA, however, there are quite a few areas that are considered as LMMA, formed according to projects and due to the needs of local people, communities and local government in a "spontaneous" manner. For examples: The management model at Bai Dua under the Quy Nhon Bay LMMA is the first model of co-management under the Fisheries Law 2017 in Binh Dinh and nationwide *(https://www.mcdViet Nam.org/hoi-nghi-cong-bo-va-chia-se-kinh-nghiem-xay-dung-mo-hinh-dql-cong-nhan-giao-quyen-quan-ly-khu-vuc-bai-dua-xa-nhon-ly-va-truyen-thong-ve-dql-trong-bao-ve-nguon-loi-thuy-san-tai-lmma-vinh-quy-nhon/)*.

These small potential objects will not be identified on the map in this study, however, they need to be specifically evaluated in the next steps of research on OECMs because they are not only valuable in *in-situ* conservation of biodiversity in addition to

the protected area, but also an important livelihood for the community as well as cultural and spiritual values for indigenous people and local communities.

2. Some typical OECMs models in the world

2.1. Republic of India

Based on information providing in India UNDP office' publication in 2022 "Criteria and Guidelines for Identifying Other Effective Area Based Conservation Measures (OECMs) in India", we summarize the process of setting up the OECMs system in India as follows:

2.1.1. Status of implementation of OECMs

In India, areas included within the Protected Areas are as per six IUCN categories: National Parks, Wildlife Sanctuaries, Conservation Reserves, Community Reserves, as per Wildlife (Protection) Act, 1972; Reserve Forests, Protected Forests and Village Forests as per Indian Forest Act, 1927; Lakes and Water Bodies as per Wetland (Conservation and Management) Rules, 2017; Biodiversity Heritage Site as per Biological Diversity Act, 2002.

Recognizing the need to address the biodiversity and climate crises, India has made significant strides in bringing over 22% (terrestrial) and 5% (coastal and marine) area under the protected area network through the government's efforts of establishing National Park, Wildlife Sanctuaries, Biosphere Reserves as well as through Reserved Forests. However, India needs to extend its conservation efforts beyond the traditionally protected areas since there is limited scope of expanding the protected area network in India.

Role of OECMs in Achieving National and Global Commitments

Recognizing their conservation potential, OECMs were included in Aichi Global Biodiversity Target 11 and subsequently in India's National Biodiversity Target 6. The Aichi Biodiversity Target 11 will be superseded by Target 3 of the upcoming Post-2020 Global Biodiversity Framework.

While OECMs seem like an emerging concept, India has a time immemorial tradition of conservation which is reflected in the areas maintained by local communities as part of their sustainable lifestyle practices. Recognizing such areas as OECMs offers a significant opportunity to identify and report effective long- term conservation that is taking place outside the protected area network, under a range of management arrangements, implemented by a diverse set of actors, including local communities, the private sector, government agencies and shared governance measures.

The OECMs mechanism will provide ample opportunity to promote biodiversity conservation in India, can complement existing protected areas across landscapes and seascapes, and contribute to achieving ambitious conservation and climate targets.

OECMs gathering momentum in India

OECMs present an opportunity to expand India's network of conserved areas, operating cooperatively with protected areas. OECMs sustain both economies and ecologies, thereby ensuring that ecosystems thrive by protecting ecological components against overexploitation. Further, since OECMs are less restrictive than protected areas, the value acceptability of OECMs could be much higher with the stakeholders concerning economic interests, who oppose more exclusive conservation efforts.

A wide range of sites in India have the potential to be recognized as OECMs, which can be government managed, community managed, privately managed, and co-managed. Based on a number of ecological and social characteristics, the Government of India with support from the United Nations Development Programme (UNDP) has developed a 14-category classification organized into 3 major sub-groups- terrestrial, waterbodies, and marine. The 14 categories cover the whole spectrum of potential OECMs in India including unique agricultural systems, biodiversity parks, industrial estates, lakes & ponds, riverine water bodies, important coastal biodiversity areas, etc.

Further, there is an urgent need to raise awareness about the opportunities of OECMs as a tool for recognizing diverse management strategies that result in conservation outcomes in India. It is important to appropriately recognize and report the OECMs in meaningful categories. As India has almost exhausted the Protected Areas categories, these conservation areas may be explored for achieving global priorities and national targets on biodiversity conservation.

OECMs Route in India

The Ministry of Environment, Forest and Climate Change (MoEFCC), National Biodiversity Authority of India (NBA) and UNDP along with other partners are engaged in the process of identifying, mapping and documenting OECMs in India. As the Government of India looks forward to expanding the country's conservation estate through the OECMs route, this is an opportune time to tap this conservation mechanism by identifying and mapping large numbers of OECMs sites in the country.

In January 2019, the MoEFCC, with the support of UNDP, organized a sensitization workshop inviting a range of reputed organizations and experts. After that, a Small Group of nine members was created in June 2020 by MoEFCC to develop Criteria and Guidelines for identifying OECMs in India.

The Small Group met several times and evolved a country specific methodology for identification of OECMs based on the guidance provided by IUCN. Initially the group started screening all OECMs categories and found 51 such potential categories.

Subsequently, after reviewing these 51 categories of OECMs, the Small Group finalized 12 broad categories of OECMs to be reported in the country, and submitted a report to the MoEFCC in September 2020.

Mandatory general criteria and guidelines: using CBD Criteria and Voluntary Guidelines

Categories and Specific Criteria

In addition to the four mandatory general criteria and guidelines described earlier, following are the specific criteria and guidelines for the 14 OECMs categories:

For example: **5. Urban Trees and Forests (UTF)/ Urban Greens/ City Forest, Urban/ City Gardens**

Networks or systems comprising all woodlands, groups of trees and individual trees located in urban and peri-urban areas outside forest areas. These include trees outside the forest, forests, street trees, trees in parks and gardens, and trees in derelict corners. They provide economic, environmental and sociocultural benefits (*Source*: FAO).

Specific guidelines:

1. Urban Trees and Forests (UTF)/ Urban Greens/ City Forest, Urban/ City Gardens located outside forest areas mapped by FSI can only qualify as OECMs.

2. Area should be substantial to support habitat conservation of native species, as per approved management plan.

3. Remarks: The urban green areas should be managed by the urban local body and be integrated in the city master plan.

2.1.2. Some specific OECMs models

Model 1. The Jabarkhet Nature Reserve (India)

(video: https://www.youtube.com/watch?v=r33AWjDnj0M)

Location: Nature Reserve, Jabarkhet, Landour, Mussoorie city, Uttarakhand State 248179, India (in North of India)

The Jabarkhet Nature Reserve (JNR) is a private forest owned by an entrepreneur. A conservationist and programme director with World Wildlife Fund (WWF), along with the owner, created the Reserve to protect the forest from illegal activities and to develop local livelihoods through eco-tourism and promoting conservation awareness. It is one of the first privately managed forest estates in the region that had its working plans approved by the Forest Department.

Geographical defined space: 44 ha.

Not recognized as a protected area: Not a PA.

Governed: Private; a Board of Directors comprising three people, including the legal owner of the land and the Managing Director.

Managed: The Managing Director (the conservationist who founded the Reserve).

Biodiversity: Over 300 species of flowering herbaceous plants, over 40 species of ferns and grasses, and over 100 species of fungi recorded. More than 150 bird species and almost all mammals found in the middle Himalayas, with breeding populations. Significant mammal species recorded include the common leopard, Himalayan black bear, golden jackal, and the leopard cat. Tigers have also been spotted.

Permanence: Long term; the land has been with the owner's family for over 90 years.

Model 2. Aravalli Biodiversity Park (India)

Location: near Guru Dronacharya Metro Station in Gurgaon City, Haryana State, India (Northwest)

This was previously an abandoned mining site that was transformed into a lush green forest in 10 years. Recently, Aravalli Biodiversity Park was declared India's first OECM site on World Wetlands Day 2022.

Geographical defined space: 158.6 ha.

Not recognized as a protected area: Not a PA.

Governed: State; the Municipal Corporation of Gurgaon (MCG).

Managed: The MCG and the corporation Hero MotoCorp Limited.

Biodiversity: Harbors endangered and rare plants of the Northern Aravalli hills (over 300 native species have been recorded). It is also a habitat for over 201 species of birds and various mammal and reptile species.

Permanence: Long term; it is an established OECM with government support

(*Source*: Case Studies on Existing and Potential OECMs Categorized by Type of Resource Use (Terrestrial and Marine), IUCN's Website (https://www.iucn.org/resources/file/case-studies-existing-and-potential-oecms-categorised-type-resource-use-terrestrial)

2.2. Canada

Information gathered on the internet about the development of OECMs in Canada shows the following:

2.2.1. Status of implementation of OECMs

a) Awareness of benefits and significance of OECMs accreditation:

- The Government of Canada sees great value in recognizing good land stewardship that contributes to biodiversity conservation. As such, it is seeking to recognize all areas that conserve *in-situ* biodiversity for the long term and meet the definition of an OECM.

- The Canadian Department of National Defence and Government of Manitoba are recognized for good land stewardship.

- The species and natural ecosystems allowed to thrive and the surrounding communities that benefit from locally intact ecosystems

- The recognition of Canadian Forces Base Shilo as an OECMs has served as an example to assess, recognize the value of and potentially report areas with innovative or atypical conservation mechanisms.

- This recognition is highlighting the Department of National Defence's conservation efforts and successes. It has also strengthened the conservation dialogue between the federal Department of National Defence, the federal department of Environment and Climate Change, and the provincial (sub-national) Government of Manitoba.

b) Challenges:

- Media challenge: The concept of an OECMs is not yet widely understood. There is often the misconception that these areas have lower value for conservation or may be mistakenly perceived as a 'protected area light';

- Communication challenge: Partners may want to know why they should support recognizing an area as an OECMs. They may ask 'what's in it for me?'; Similarly, partners may mistakenly worry that they will lose certain land-use rights through this recognition

c) Enabling factors

- In 2015, Canada released a suite of biodiversity targets. Target 1 set out the need to conserve 17% land and freshwater area and 10% of marine area – this led to the creation of a federal, provincial, territorial, Indigenous and municipal collaborative initiative, where topics such as OECMs received much attention.

- In 2019, Canadian governments embraced the international OECMs definition. This helped create a common understanding of the OECMs concept between governments and generated discussion on the topic.

- Department of National Defence and Canadian Armed Forces put a high priority on environmental stewardship. These measures help achieve the Department's environmental and energy goals.

d) Lessons learned

- Many conservation tools are available beyond legislation and policy that specifically target biodiversity conservation.

- Positive impacts on biodiversity from indirect conservation strategies are not always apparent. It is important to look at a site from a broad lens; considering the biodiversity outcomes at the site and whether management practices are such that conservation will be maintained over the long term.

2.2.2. The first OECMs Model of Canada

Canadian Forces Base Shilo, Manitoba

Location: Shilo, Municipality of North Cypress – Langford, Manitoba, Canada

This is a military training area that has certain parts with primarily natural habitats that are relatively undisturbed. It is located in sensitive mixed-grass prairie in Central Canada. It has been recognized as an OECMs and is the first Canadian military base recognized as a part of the Canadian protected and conserved areas network.

Geographical defined space: 23,061 ha.

Not recognized as a protected area: Not a PA.

Governed: State; governed and managed by the Department of National Defense, Canada.

Managed: Same as above.

Biodiversity: The site maintains abundant and diverse wildlife populations and 17 at-risk species.

Permanence: Long term.

Shilo Landscape of Canadian Forces Base Shilo, Manitoba (Foto: Ministry of Military Defense, Canada)

(*Source*: Case Studies on Existing and Potential OECMs Categorized by Type of Resource Use (Terrestrial and Marine), IUCN's Website (https://www.iucn.org/resources/file/case-studies-existing-and-potential-oecms-categorised-type-resource-use-terrestrial)

2.3. Lessons learned for Viet Nam

Through studying the process of setting up the OECMs system and some specific models in Canada and India mentioned above as well as in many other countries around the world, we can draw some lessons learned for Viet Nam as follows:

1. The countries that have successfully established the system of OECMs are all the places where the initial essentials are converged such as:

- There is a general awareness of the whole society about the importance of nature and biodiversity conservation;

- There are diverse and effective nature and biodiversity conservation practices;

- There is a strong legal system for conservation of nature and biodiversity: the country is a party to international treaties on sustainable development, conservation of nature and biodiversity, including the Convention on biodiversity; have a national strategy/action plan on biodiversity with the same objectives as Aichi 11; have a legal system on nature and biodiversity conservation that supports a variety of biodiversity conservation types, a variety of actors involved in the management of biodiversity conservation areas, in which paying particular attention to the role of the private sector, indigenous peoples/local communities.

- The Government is well aware of the role and benefits of OECMs, therefore, the Government has high determination in establishing a system of OECMs.

2. The important role of International Organizations in providing financial and technical assistance to developing countries in the initial steps of building national OECMs system.

3. The Government organizes the establishment of the OECMs system in a methodical manner:

The National Body for Biodiversity has launched a Roadmap to establish the OECMs system in a scientific and methodical manner with technical and part financial support from International Organizations (in the case of India: UNDP India):

- Disseminate relevant parties, the community and the whole society about OECMs;

- Involving all relevant stakeholders from the very beginning of the roadmap for setting up the OECMs system;

- Reviewing the existing system of policies and laws to correct some inadequacies and supplement new regulations for the purpose of supporting OECMs;

- Establishing expert groups to conduct research and propose a roadmap for setting up the national OECMs system;

- On the basis of technical guidance of CBD Convention, IUCN, developing technical guidance documents for selection and assessment of potential OECMs;

- Organize the implementation of the contents of the approved National Roadmap for establishing the OECMs system and organize the monitoring and evaluation of the implementation of this Roadmap.

4. In the world, there are more and more diverse types of biodiversity conservation based on areas and diverse actors managing conserved areas, among them, the role of indigenous people/ local communities and private actors are gradually confirmed.

3. Reviewing the current status of legal regulations related to OECMs in Viet Nam

3.1. Legal regulations related to OECMs in Viet Nam

3.1.1. Protection forests, natural production forests

Table 3. Legal regulations on Protection forests related to OECMs

No.	Zones	Type of Protection forests					
		Total (ha)	watershed forests	protecting water resources	Border protection forests	Windbreak forest, sand barrier	breakwater forest, encroachment on the sea
	Nationwide	**5.511,8**	**5.226,0**	**108,7**	**4,0**	**37,0**	**136,1**
1	Northern Midlands and Mountains	2.390,9	2.377,1	13,8	-	-	-
2	Red river delta	170,3	112,2	27,2	-	2,7	28,2
3	North Central and Central Coast	2.058,0	1.976,7	38,1	-	23,0	20,1
4	Highlands	641,1	620,4	16,5	3,9	0,3	0,0
5	South East	152,7	109,4	0,1	-	1,4	41,7
6	Mekong Delta	98,8	30,1	12,9	0,0	9,7	46,1

Sources: Report on national forest planning, 2021

Production forests are natural forests (4,127,200 ha): Large timber production forests (3,145,400 ha), small timber production forests (487,100 ha), Bamboo production forests (234,100 ha), Remaining production forests back to the current status of mainly mangroves, coastal forests, and mixed timber forests.

Table 4. Legal regulations on biodiversity conservation facilities related to OECMs

Regulations	**Protection forests**	***Natural production forests***
Law on forest	- The State ensures resources for the management, protection, and development of special-use forests (***Clause 2 Article 4***). - Protection forests are mainly used to protect water resources, protect soils, prevent erosion, landslides, flash floods, and pipe floods, combat desertification, limit natural disasters, Article harmonizes climate, and contribute to environmental protection. school, national defense, and security, combining eco-tourism, convalescence, and entertainment; provision of forest environmental services; classified by criticality include: Watershed Protection forests; forests to protect water sources of	- The State leases natural production forests to economic organizations, households and individuals, or planted production forests with one-time or annual rental payment for forestry production; combined forestry, agriculture, and fishery production; business ecotourism , resort, entertainment (***Article 7***) - The State provides funds for the protection and development of natural production forests during the closure of natural forests (***Clause 1 Article 32***) - Maintaining the existing natural production forest area; restore natural forests in previously exploited areas

Regulations	**Protection forests**	***Natural production forests***
	residential communities; Protection forests borders; Protection forests to block wind and sand; Protection forests break waves, encroach on the sea (***Clause 3 Article 5***)	that have not yet met the criteria for becoming forests; Only natural forests can be rehabilitated in areas that are not capable of self-regeneration (***Clause 1 Article 48***) - Conditions for exploitation of forest products in natural production forests are regulated as follows: Forest owners being organizations must have a sustainable forest management plan approved by a competent state agency; Forest owners being households, individuals or communities that harvest timber at their request and approved by the district-level People's Committee (***Clause 1 Article 58***) - The exploitation of forest products in natural production forests must comply with the provisions of this Law and the Regulation on forest management (***Clause 2 Article 58***).
Decree No. 156/2019/NĐ-CP	- Specific criteria for protection forests include: Watershed protection forests are forests in the basins of rivers and lakes; Forests protect water sources of residential communities; Protection forests borders; Protection forests to block wind and sand; Protection forests break waves, encroach on the sea (***Article 7***) - Protection of Protection forests includes: Protection of forest ecosystems; Protection of forest plants and animals; Comply with regulations on forest fire prevention and fighting; Comply with regulations on prevention and control of harmful organisms Protection forests (***Article 19***) - Exploiting forest products in Protection forests: Logging from natural forests; Exploiting non-timber forest products in natural forests;	- The exploitation of forest products in natural production forests: Main exploitation of natural forest timber; Exploiting and taking advantage of natural forest wood; Fully exploiting natural forest wood; Exploiting common forest plants other than timber, derived from common forest plants; Exploiting common forest animals; Exploitation of endangered, precious and rare species must comply with the Government's regulations on management of endangered, precious and rare forest plants and animals and the implementation of the Convention on International Trade in Fauna and Flora endangered wildlife; Benefit from forest product (***Article 28***) - The State ensures the investment budget for the following activities: Protection and development of natural

Regulations	**Protection forests**	***Natural production forests***
	Timber harvesting from planted forests; Exploiting and taking advantage of timber from natural forests and planted forests (***Article 20***) - Scientific research, teaching and internship activities in Protection forests (***Article 22***) - Implement ecotourism, resort and entertainment projects in Protection forests (***Article 23***) - Construction management of works for eco-tourism, resort and entertainment in Protection forests (***Article 24***) - Combined forestry, agriculture and fishery production in Protection forests (***Article 25***) - The State ensures an investment budget for the following activities: Protection and development of Protection forests; To protect and rescue of endangered, precious, and rare forest plants and animals; To study and applying results of scientific research, developing technology and training human resources to serve the state management of forestry; To build research and development zones and high-tech zones; Procurement of means, equipment, and equipment: forest protection; monitoring and warning of forest fire risks; preventing and eliminating organisms harmful to forests; Building, maintaining, maintaining, upgrading and renovating infrastructure for protection and development of Protection forests (***Article 87***)	production forests during forest closure (***Clause 9 Article 87***)

Regulations	Protection forests	*Natural production forests*
National forestry Strategy 2021 - 2030, vision to 2050	- Planting Protection forests with native, precious, and rare species: an average of 4,000 - 6,000 ha/year - Restore protection forests on average 15,000 ha/year	
	For protection forests and natural production forests, focus on forest protection, development of forest environmental services and development models of non-timber forest products and agro-forestry products; implement activities to reduce greenhouse gas emissions through limiting forest loss and degradation; conservation, enhancement of carbon stocks and sustainable management of forest resources (REDD+).	
	- building models of local community engagement and equitable benefit sharing in the management of special-use forests, Protection forests through an adaptive collaborative management approach to increase the level of community participation. local communities, reducing conflicts and improving management efficiency; promote certification of sustainable forest management; continue to improve mechanisms, policies, and technical guidelines on sustainable forest management and forest certification; there are separate guidelines for different target groups such as individuals, households, groups of households, communities,...; strengthen capacity building for stakeholders on sustainable forest management and forest certification.	
	The State invests in the development of Protection forests and promotes the construction and completion of forestry infrastructure to protect and develop forests; protecting and conserving biodiversity and the environment, at the same time creating a premise to attract and support all economic sectors to participate in forest development; Prioritize development of watershed and coastal protection forests in order to prevent, combat and mitigate negative impacts	

Regulations	Protection forests	*Natural production forests*
	of natural disasters, and respond to climate change.	

Sources: Law on forest 2017; Decree 156/2019/ND-CP dated November 16, 2018 of the Government detailing a number of Articles of the Law on Forestry; Decision No. 523/QD-TTg dated April 1, 2021 of the Prime Minister approving the Forestry Strategy for the period of 2021 - 2030, with a vision to 2050.

For the forest ecosystem, the protection forest has a rather large area (about 5.5 million ha). According to the provisions of the forestry law 2017, protection forests have boundaries, locations and areas determined on the field and on a map. With many values of forest biodiversity and many important functions of watershed protection, water source protection, border protection, windbreak, sand barrier, wave break, sea encroachment etc., natural protection forests are potential OECMs and can be classified as OECMs with the primary conservation.

3.1.2. Buffer zones of protected areas:

Table 5. Regulations on buffer zones related to OECMs

Regulations	Buffer zone
Law on forest	- The buffer zone is an area of forest, land, and water surface adjacent to the boundary of a special-use forest that has the effect of preventing and mitigating negative impacts on the special-use forest (***Clause 25 Article 2***) - The special-use forest management board is responsible for formulating investment programs and projects for the development of buffer zones; organizing the implementation of investment programs and projects in the buffer zone with the participation of local communities; coordinating with local authorities in reviewing and formulating management plans for residential land and production land interspersed in special-use forests and submit them to competent state agencies for (***Clause 5 Article 54***) - Organizations, households, individuals, local communities or organizations operating in the buffer zone have the right to supervise, participate in the implementation, and coordinate in the management of investment programs and projects in the buffer zones according to regulations. provisions of law (***Clause 6 Article 54***) - The implementation of stabilizing people's life living in special-use forests and buffer zones of special-use forests according to the Forest Management Regulations (***Clause 7 Article 54***).

	- Supporting communities in the buffer zone to stabilize their lives and develop socio-economically (***Point c Clause 2 Article 75***)
Decree No. 156/2019/NĐ-CP	- Determine the boundary range, area of special-use forest, subdivisions, and buffer zones on the map (***Point đ Clause 2 Article 9***) - Operational programs plan to stabilize people's lives in the buffer zone, implement solutions, and manage the organization (***Point e Clause 2 Article 9***) - Stabilizing people's lives living in special-use forests and buffer zones of special-use forests (Determining buffer zones, Contents of investment programs and projects on the development of buffer zones, special-use forest management boards shall assume the prime responsibility for, and coordinate with the government and the population community to develop investment programs and projects for the development of the buffer zone (***Article 16***) - Supporting livelihood development, improving the lives of people in the buffer zones of special-use forests, and Protection forests.
Decree No. 26/2019/NĐ-CP	The buffer zone of a marine conservation area is the sea, island, archipelago, or coastal area surrounding or adjacent to the inner boundary of the protected area in order to prevent and mitigate harmful external impacts on the conservation area. (***Clause 11 Article 3***) Activities to be carried out in the buffer zone include: b) Aquaculture and fishing; Organizing service activities, eco-tourism; Construction of infrastructure works to serve the operation of the Marine Protected Area Management Board; works in service of eco-tourism and aquaculture; Restoration and regeneration of aquatic animals and plants and marine ecosystems; Ecotourism activities that do not cause damage to aquatic resources and marine ecosystems; Release buoys to mark the boundary of the sea; Article conducting scientific research and investigation after being approved by a competent state agency and subject to the supervision of the Marine Protected Area Management Board; Environmental propaganda, education, biodiversity conservation, and aquatic resource protection (***Article 10***)

Sources: Law on Forestry 2017; Decree 156/2019/ND-CP dated November 16, 2018 of the Government detailing a number of Articles of the Law on Forestry; Decree No. 26/2019/ND-CP dated March 8, 2019 of the Government detailing a number of Articles and measures to implement the Law on Fisheries.

The buffer zone is defined on the map, however, in practice, the boundary of the buffer zone is not clear, usually determined according to the administrative boundaries of the areas surrounding the protected area. Buffer zones play a very important role in creating protection belts for protected areas, expanding habitats with species, reducing

pressure on exploitation of biodiversity resources to nature reserves, contributing to creating cultural and spiritual values for the local community. However, the long-term effectiveness of biodiversity conservation is unclear. Therefore, on a case-by-case basis when assessing, only certain areas of the reserve's buffer zone can meet the criteria of the OECMs.

3.1.3. Protected zones of aquatic resource

Table 6. Legal regulations on protected zones of aquatic resource related to OECMs

Regulation	Protected zones of aquatic resource
Law on fisheries	Encroaching, occupying, and damaging aquatic resource protection zones (***Clause 3 Article 7***)
	The main contents of the master plan on the protection and exploitation of aquatic resources include: Geographical location, area, boundaries and map of the area to be established in marine conservation zones and aquatic resource protection zones (***Point c Clause 2 Article 11***)
	An aquatic resource protection area is a place of residence, and breeding, where young aquatic species live regularly or seasonally of at least one aquatic species on the List of endangered, precious, and rare aquatic species. either native aquatic species or transboundary migratory (***Clause 1 Article 17***)
Strategy for Development of Viet Nam's Fisheries by 2030 with vision towards 2045	Concentrating resources on consolidating, expanding, developing, and establishing new marine protected areas and aquatic resource protection zones in accordance with the natural and socio-economic conditions of each region, especially the marine resource protection zones. coastal fisheries, in mangroves, lagoons, upstream and basins of rivers

Sources: Law on Fisheries 2017; Decision No. 339/QD-TTg dated 11/3/2021 of the Prime Minister approving the Strategy for development of Viet Nam's fisheries to 2030, with a vision to 2045.

Aquatic resource protection zone was included in the Fisheries Law for the first time in 2017, but activities on the protection of aquatic resources have been carried out over the past time. According to the Law on fisheries, the Ministry of Agriculture and Rural Development has to issue a list of zones for aquatic resources protection across the country, but this list has not been issued yet. That means there is no officially recognized aquatic resource protection zones. However, in the past time, due to actual needs, Thua Thien Hue province has reviewed and recognized aquatic resource protection zones in the province. These zones specify the boundaries, locations and areas on the field and on the map, and are recognized by the competent authorities; has a linking function in inland and coastal wetland ecosystems; provision of ecological services, especially provisioning services; contribute to community livelihoods and

create cultural and spiritual values for the local community. Aquatic resource protection zone can be classified as OECMs with the primary conservation.

3.1.4. Biodiversity corridors

Table 7. Legal regulations on biodiversity corridors related to OECM

Regulations	**Biodiversity corridor**
Law on biodiversity	Biodiversity corridor is an area connecting natural ecological zones that allow species living in those ecological zones to interact with each other (***Clause 8 Article 3***)
Law on planning	The national biodiversity conservation planning includes the following main contents: Areas of high biodiversity; important ecological landscapes; nature reserves; biodiversity corridors; Biodiversity Conservation Facility (***Point c Clause 6 Article 24***)
Decree No. 37/2019/NĐ-CP	Identification of names, geographical locations, area sizes, types, objectives, regimes, and management hierarchies for areas of high biodiversity, important wetlands, and landscape areas important ecosystems, biodiversity corridors, nature reserves, biodiversity conservation facilities (***Clause 3 Article 26***)
Decision 3370/QD-UBND 08/11/2018 of the People's Committee of Quang Nam province to establish a biodiversity corridor	Name of biodiversity corridor: Biodiversity conservation corridor connects Sao La Species and Habitat Conservation Area, Song Thanh Nature Reserve, Elephant Species and Habitat Conservation Area The Decision stipulates the geographical location, area size, type, objectives, regime and management hierarchy for this biodiversity corridor.
Decision 3154/QD-UBND 28/12/2018 of the People's Committee of Quang Tri Province on the establishment of a biodiversity corridor	Name of biodiversity corridor: biodiversity conservation corridor connecting Dakrong nature reserve and Bac Huong Hoa The Decision stipulates the geographical location, area size, type, objectives, regime and management hierarchy for this biodiversity corridor.
Decision 1880/QD-UBND 24/8/2018 of the People's Committee of Thua Thien Hue province to establish a biodiversity corridor	Name of biodiversity corridor: biodiversity conservation corridor connecting Sao La nature reserve and Phong Dien nature reserve The Decision stipulates the geographical location, area size, type, objectives, regime and management hierarchy for this biodiversity corridor.

Sources: Law on Biodiversity 2008; Law on Planning 2017; Decree No. 37/2019/ND-CP dated May 7, 2019 of the Government detailing a number of Articles of the Law on Planning.

The biodiversity corridor is defined with specific boundaries, locations and areas on the field and on the map, recognized by competent authorities. The biodiversity corridor is characterized by a variety of actors – owners of lands with different uses and the presence of people living in the area, so the management is very complicated. However, the goal of conserving biodiversity corridors still ensures long-term effectiveness. In addition, the biodiversity corridor also ensures the function of linking habitats and ecosystems in a large area; provide ecosystem services, mainly forest environment services; contributing to enhancing community livelihoods, creating cultural and spiritual values for local communities. The Biodiversity Corridor can be classified as a Secondary Conservation Purpose.

3.1.5. Area of high biodiversity

Table 8. Legislation on areas of high biodiversity related to OECMs

Regulations	**Area of high biodiversity**
Law on planning	The national biodiversity conservation planning includes the following main contents: Areas of high biodiversity; important ecological landscape; nature reserve; biodiversity corridor; Biodiversity Conservation Facility (***Point c Clause 6 Article 24***)
Decree No. 37/2019/NĐ-CP	Identification of names, geographical locations, area sizes, types, objectives, regimes, and management hierarchies for areas of high biodiversity, important wetlands, and landscape areas important ecosystems, biodiversity corridors, nature reserves, biodiversity conservation facilities (***Clause 3 Article 26***)
Circular 02/2022/TT-BTNMT	A high biodiversity area is a natural area with outstanding biological value or important to the province, region, country, or international community, which needs to be managed appropriately to maintain, develop sustainably, and preserve biodiversity. exists in order to enhance the existing values, meeting the criteria specified in Point b Clause 2 Article 20 of the Law on Environmental Protection (***Clause* 6 *Article* 3**)
Law on Environment Protection 2020	The establishment and recognition of natural heritage under Point c Clause 1 of this Article is based on one of the following criteria: Having typical values of ecological, biological evolution or natural habitat of endangered, precious, rare, endemic species or containing specific ecosystems, representing a natural ecological area or having other special biodiversity value to be conserved (***Clause 1, 2 Article 20***)

Sources: Law on Environmental Protection 2020; Planning Law 2017; Decree No. 37/2019/ND-CP dated May 7, 2019 of the Government detailing a number of Articles of the Law on Planning; Circular No. 02/2022/TT-BTNMT dated January 10, 2022 of the Ministry of Natural Resources and Environment guiding a number of Articles of the Law on Environmental Protection.

The area of high biodiversity has not yet been established in practice, it has only been demarcated for planning on the map. Current status of planned high biodiversity areas have been contributing to biodiversity conservation for a given area. However, it is not certain in the long-term because it is possible that these areas will be converted to economic development goals. Areas of high biodiversity are recognized for their associated ecological functions as well as the values that biodiversity areas can provide.

3.1.6. Important wetlands

Table 9. Legislation on important wetlands related to OECMs

Regulation	**Important wetlands**
Decree No. 37/2019/NĐ-CP	Identification of names, geographical locations, area sizes, types, objectives, regimes, and management hierarchies for areas of high biodiversity, important wetlands, and landscape areas important ecosystems, biodiversity corridors, nature reserves, biodiversity conservation facilities (***Clause 3 Article 26***)
Decree No. 66/2019/NĐ-CP	Prepare, Review, Issue, and Revise the National List of Important Wetlands (***Clause 3 Article 4***)
	Guidelines for the management of important wetlands outside protected areas (***Clause 4 Article 4***)
	Inspect, examine and handle violations of the law on the conservation and sustainable use of important wetlands (***Clause 6 Article 4***)
	Restoration of important wetlands, degraded or overexploited natural wetland ecosystems; maintenance and prevention of changes in wetland ecological characteristics (***Clause 2 Article 5***)
	Monitor activities on critical wetlands; detect and promptly notify authorities of violations of the law on conservation and sustainable use of important wetlands (***Clause 3 Article 5***)
	Criteria for determining important wetlands (***Article 8***)
	Regulations on conservation and sustainable use of important wetlands belonging to special-use forests and marine protected areas (***Article 22***)
	Regulations on conservation and sustainable use of important wetlands outside protected areas (***Article 25***)

	Benefit sharing from the ecosystem services of important wetlands (***Article 26***)
	Investment policy for conservation and sustainable use of important wetlands (***Article 28***)
	Developing human resources and mobilizing community participation in conservation and sustainable use of wetlands (***Article 29***)

Sources: Decree No. 37/2019/ND-CP dated May 7, 2019 of the Government detailing a number of Articles of the Law on Planning; Decree No. 66/2019/ND-CP dated July 29, 2019 of the Government on the conservation and sustainable use of wetlands

Despite the provisions of the Decree No. 66/2019/NĐ-CP are in force, important wetlands have not been established in practice. Nationally important wetlands are newly included in the draft National Master Plan on Biodiversity, and provincial wetlands are being included in provincial master plans by provinces. Therefore, important wetlands need to be assessed specifically how well they meet the criteria of OECMs for important wetlands to be established in the future.

3.1.7. Important ecological landscape

Table 10. Legislation on important ecological landscapes related to OECMs

Regulation	**Important ecological landscape**
Law on planning	The national biodiversity conservation planning includes the following main contents: Areas of high biodiversity; important ecological landscape; nature reserve; biodiversity corridor; Biodiversity Conservation Facility (***Point c Clause 6 Article 24***)
Decree No. 37/2019/NĐ-CP	Identification of names, geographical locations, area sizes, types, objectives, regimes and management hierarchies for areas of high biodiversity, important wetlands, and landscape areas important ecosystems, biodiversity corridors, nature reserves, biodiversity conservation facilities (***Clause 3 Article 26***)
Circular No. 02/2022/TT-BTNMT	An important ecological landscape is an area formed by the interaction of natural and man-made factors, having a specific or representative natural ecosystem for the local, national or international, meeting the requirements of the environment. criteria specified in Point a and Point d Clause 2 Article 20 of the Law on Environmental Protection (***Clause 7 Article 3***)
Law on Environmental Protection 2020	The establishment and recognition of natural heritage under Point c Clause 1 of this Article is based on one of the following criteria: Having outstanding, unique or rare beauty of nature; It is of particular importance in climate regulation, water protection, ecological balance, and provision of natural ecosystem services (***Point a, d Clause 2 Article 20***)

Sources: Law on Environmental Protection 2020; Planning Law 2017; Decree No. 37/2019/ND-CP dated May 7, 2019 of the Government detailing a number of Articles of the Law on Planning; Circular No. 02/2022/TT-BTNMT dated January 10, 2022 of the Ministry of Natural Resources and Environment guiding a number of Articles of the Law on Environmental Protection

The important ecological landscape has not been established in practice, it has only been demarcated for planning on the map. The important ecological landscape was identified with a large area, contributing to the effectiveness of the conservation of biodiversity in the wetland ecosystem, on-site conservation of aquatic species of conservation value; have ecological functions associated with wetlands; specific and representative values (such as water regulation, ecological balance), values of landscape, human ecology, history and culture. However, there are no detailed reviews in practice.

3.1.8. Biodiversity Conservation Facility

Table 8. Legal regulations on biodiversity conservation facilities related to OECMs

Regulation	**Biodiversity Conservation Facility**
Law on biodiversity	Biodiversity conservation facility means an establishment that cares for, nurtures, rescues and propagates valuable and endemic wild species, plants, domestic animals, microorganisms and fungi; store and preserve genetic resources and genetic specimens for the purpose of biodiversity conservation and development (***Clause 4 Article 3***)
	The State establishes or assigns organizations and individuals to establish biodiversity conservation facilities to conserve species on the list of endangered precious and rare species prioritized for protection. (***Clause* 2 *Article* 41**)
	Establishment of a biodiversity conservation facility (***Article 42***)
	Invest in building, upgrading and renovating the State's biodiversity conservation facilities (***Point d Clause 2 Article 73***)
	Recurrent expenditures from the state budget for biodiversity conservation and sustainable development are used for the following purposes: Management of protected areas, the State's biodiversity conservation facilities (***Point d Clause 3 Article 73***)
	Organizations and individuals that invade conservation zones, biodiversity conservation facilities, endemic and valuable plant varieties, livestock, microorganisms and fungi, species on the list of endangered precious and

	rare species prioritized protection and biodiversity corridors, they must compensate for damage in accordance with law (***Clause 1 Article 75***)
Law on planning	The national biodiversity conservation planning includes the following main contents: Areas of high biodiversity; important ecological landscape; nature reserve; biodiversity corridor; Biodiversity Conservation Facility (***Point c Clause 6 Article 24***)
Decree No. 37/2019/NĐ-CP	Identification of names, geographical locations, area sizes, types, objectives, regimes and management hierarchies for areas of high biodiversity, important wetlands, and landscape areas important ecosystems, biodiversity corridors, nature reserves, biodiversity conservation facilities (***Clause 3 Article 26***)

Sources: Law on Biodiversity 2017; Law on Planning 2017; Decree No. 37/2019/ND-CP dated May 7, 2019 of the Government detailing a number of Articles of the Law on Planning

Biodiversity conservation facilities are usually small in size and have been identified in detail in terms of area and location on both the field and the map. However, they are very diverse, mainly have economic and tourism purposes and only a few specific areas contribute to biodiversity conservation. Therefore, only a few biodiversity conservation facilities can meet the criteria of the OECMs.

3.1.9. National tourist areas

Table 9. Regulations on national tourist areas related to OECMs

Regulation	**National tourist areas**
Law on tourism	A tourist area is an area with advantages in tourist resources, which is planned, invested in, and developed to meet the diverse needs of tourists. The tourist area includes the provincial tourist area and the national tourist area (***Clause 6 Article 3***)
	A national tourist area must satisfy the following criteria: Having diverse and particularly attractive tourist resources with advantages in natural landscapes or cultural values, with definite boundaries. (***Clause 2 Article 26***)
	Management of tourist areas (***Article 29***)
Decree No. 168/2017/NĐ-CP	Conditions for recognition of a national tourist area: - Having at least 02 tourism resources, including national-level tourism resources; have defined boundaries on topographic maps certified by competent authorities. The scale of the map depends on the management requirements and the topography of the area.

	- Satisfy the conditions of security, order, social safety and environmental protection (***Article 13***)

Sources: Law on Tourism 2017; Decree No. 168/2017/ND-CP dated December 31, 2017 of the Government detailing a number of Articles of the Law on Tourism.

National tourism areas have regulations on zoning of area (usually large area), function of ecological linkage as well as service, cultural, spiritual and economic values - local society. However, it is difficult to define the extent of boundaries in the field and only national tourism areas where biodiversity is high (coinciding with important wetlands or nature reserves, scenic) is able to meet the criteria of the OECMs.

3.2. Responsibilities of the parties for potential objects to become OECMs

3.2.1. The parties involved in the management of protection forests and natural production forests

Forest owner means an organization, household, individual, or community that is allocated or leased out by the State; land allocation, land lease for afforestation; forest self-recovery and development; receive, transfer, donate or inherit forests in accordance with the law (***Clause 9 Article 2 Law on forest***)

Current owners of Protection forests include the Protection forests Management Board; Armed Forces; Economic organizations; Households and individuals lawfully residing in commune-level areas; Community legally residing in the commune-level area.

Owners of production forests being natural forests include: Households and individuals lawfully residing in commune-level areas; The residential community lawfully residing in the commune-level area; armed units; Special-use forest management board, Protection forests management board (for the area of production forest interspersed within the area of special-use forest, Protection forests are assigned to such forest management board).

Table 10. Legal regulations on parties to Protection forests and natural production forests

Forest owner	Protection forests management board, armed forces	Economic organizations	Household, individual	Residential community
Law on forest				
Protection forests	Protection forests management unit, arming unit for watershed Protection forests, frontier Protection forests; Protection forests to block wind and sand; Protection forests break waves and encroach on the sean ***(Point a Clause 2 Article 16)***	- Protection forests can only be assigned when they are interspersed with production forests ***(Point b Clause 2 Article 16)***	Households and individuals lawfully residing in the commune-level area where the Protection forests are located, for the watershed Protection forests; Protection forests to block wind and sand; Protection forests break waves, encroach on the sea ***(Point c Clause 2 Article 16)***	Community legally residing in the commune area where the Protection forests are located for the watershed Protection forests; Protection forests to block wind and sand; Protection forests break waves, encroach on the sea; The forest protects the water source of that community ***(Point c Clause 2 Article 16)***
				For watershed protection forests, border protection forests, and forests that protect water sources of communities, perform the following activities: Protect, combine zoning, and promote natural regeneration with forest enrichment; Planting forests in bare land where there is no possibility of natural regeneration into forests; mixed planting of many native tree species, multi-use trees, and

Forest owner	Protection forests management board, armed forces	Economic organizations	Household, individual	Residential community
				non-timber ***(Clause 2 Article 47)***
			To protection forests to blocking wind and fly sand; Protection forests break waves, and encroach on the sea, carry out the following activities: Establish forest belts in accordance with Article natural conditions in each region; Apply the method of afforestation with trees with deep roots firmly rooted, with priority given to native trees, which can grow in harsh conditions and have good tolerance; additionally planted in areas that do not meet the criteria for ***(Clause 3 Article 47)***	
	- General rights of forest owners ***(Article 73)*** - General obligations of forest owners ***(Article 74)***			
	Rights and obligations of the management board of Protection forests (***Article 76***) Rights and obligations of armed units assigned by the State special-use forests as landscape protection zones, protection forests, production forests (***Article 87***)	Rights and obligations of economic organizations assigned by the State Protection forests, special-use forests as landscape protection zones (***Article 78***) Rights and obligations of economic organizations that are allocated or leased land by the State for afforestation (***Article 80***)	Rights and obligations of households and individuals assigned by the State to protection forests (***Article 81***)	Rights and obligations of communities assigned by the State to belief forests, protection forests and production forests (***Article 86***)

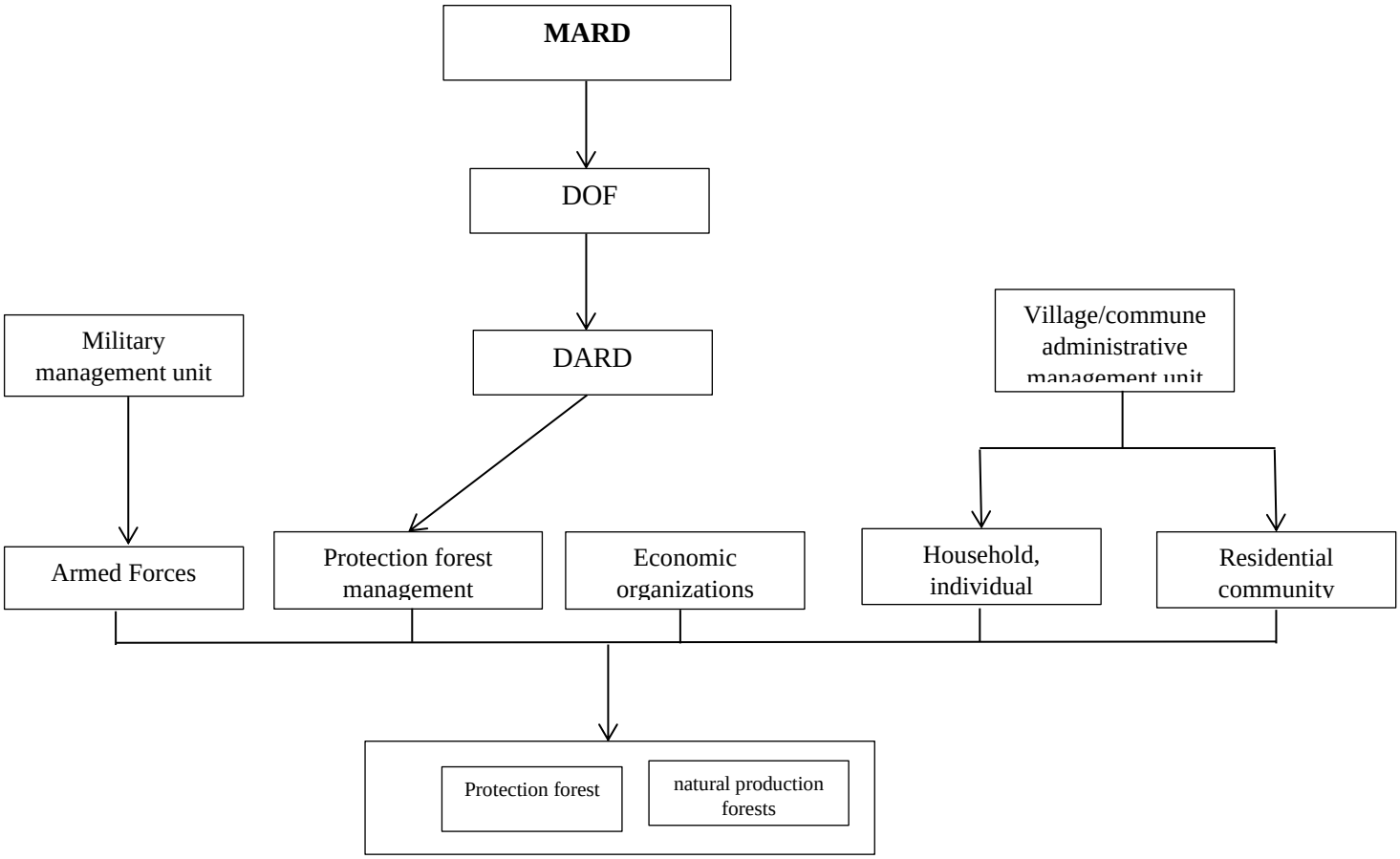
Forest owner	Protection forests management board, armed forces	Economic organizations	Household, individual	Residential community
Natural production forest	Exploiting forest products in production forests which are natural forests according to the provisions of Article 58 (***Point d Clause 1 Article 76***)	The State leases natural production forests to economic organizations, households and individuals, or planted production forests with one-time or annual rental payment for forestry production; combined forestry, agriculture and fishery production; business ecotourism, resort, entertainment (***Article 17***)		
		Conditions for exploitation of forest products in natural production forests are regulated as follows: Forest owners being organizations must have a sustainable forest management plan approved by a competent state agency (***Point a Clause 1 Article 58***)	*Conditions for exploitation of forest products in natural production forests are prescribed as follows: The forest owner being a household, individual or community, has requested and approved by the district-level People's Committee.* (***Point b Clause 1 Article 58***)	
		Exploiting forest products in production forests which are natural forests according to the provisions of Article 58 ***(Point* d *Clause* 1 *Article* 79*)***	For production forests which are natural forests, they may exploit forest products according to Article 58 of this Law and benefit from forests according to the State's policies. (***Point b Clause 1 Article 82***)	The exploitation of forest products in special-use forests which are belief forests as prescribed in Article 52, Protection forests in accordance with Article 55, production forests as natural forests as prescribed in Article 58, production forests as planted forests according to regulations provided for in Article 59 of this Law; to share benefits from forests

Forest owner	Protection forests management board, armed forces	Economic organizations	Household, individual	Residential community
				according to the State's policies; to own plants, livestock and other assets on afforestation land invested by (***Point d Clause 1 Article 86***)
Decree No. 156/2019/NĐ-CP				
Protection forests	Owners of Protection forests are entitled to all forest products exploited from Protection forests which are natural forests after fulfilling financial obligations as prescribed by the State. (***Point a Clause 1 Article 21***)			
	Protection forests owners are entitled to all exploited forest products Protection forests are planted forests with the state budget, support from programs and projects with state budget origin after fulfilling financial obligations according to regulations of the Government. Government (***Point b Clause 1 Article 21***)			
	Protection forests management board; the person assigned or contracted with Protection forests is entitled to all agricultural, fishery and non-timber forest products after fulfilling financial obligations as prescribed by the State. (***Clause* 3 *Article 21***)			
	Forest owners develop ecotourism, resort and entertainment projects in accordance with the approved sustainable forest management plan (***Article 23***) Forest owners are allowed to rent the environment of Protection forests to organizations and individuals to trade in ecotourism, resort and entertainment services. The leasing of Protection forests environment for ecotourism, resort and entertainment services business (***Article 23***)			
	Combined forestry, agriculture and fishery production in Protection forests (***Article 25***)			
	Protection forests management board enjoys the value derived from non-forest product services; make payments to contract recipients; sharing benefits with households, individuals and		- Prepare a plan for forest fire prevention and fighting according to Form No. 01, Appendix III attached to this Decree (***point a Clause 1 Article 45***) - Determining the forest area for which forest environmental services are paid for by forest owners who are households, individuals and communities; Commune-level People's Committees and other	

Forest owner	Protection forests management board, armed forces	Economic organizations	Household, individual	Residential community
	communities participating in forest protection according to the State's regulations (***Clause 2 Article 21***)		organizations assigned by the State to manage forests (***Article 62***) Forest owners being households, individuals and communities are entitled to use the entire amount of forest environmental services to manage, protect, develop forests and improve living standards. (***point a Clause 3 Article 70***) Organizations, households, individuals and communities implementing programs, projects and non-project activities according to decisions approved by competent agencies (***Clause 1 Article 85***)	
Natural production forest			Investment support policy: Forest protection and regeneration with additional planting of natural production forests for farmers in mountainous, border, island and regional areas. especially difficult socio-economic situation (***Point d Clause 3 Article 88***)	

Sources: Law on Forestry 2017; Decree 156/2019/ND-CP dated November 16, 2018 of the Government detailing a number of Articles of the Law on Forestry.

The subjects involved in the management of protection forests as well as natural production forests are quite clear. The objects assigned to be managed or assigned to protect are in writing from the competent authority and must be held responsible before the law. However, at present, the assignment of many types of management objects will face certain difficulties in managing in a certain geographical area.



Notes: MARD (Ministry of Agriculture and Rural Development), DOF (Department of forestry), DARD (Department of Agriculture and Rural Development)

Figure 1. Diagram of stakeholders in the management of Protection forests and natural production forests

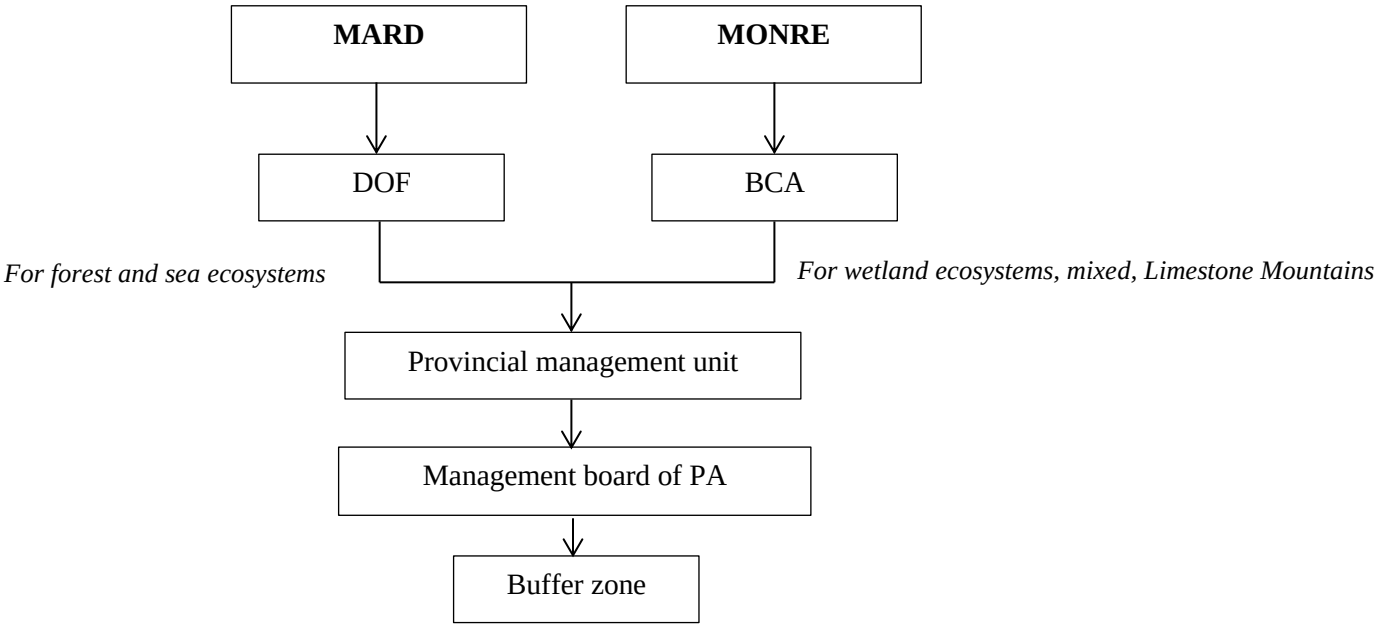
3.2.2. The parties involved in the management buffer zone of protected area

Table 11. Legal regulations on parties to the buffer zone of protected areas

Related parties	Management Board of Special-use Forests/Management Board of Marine Protected Areas	Organizations, households, individuals, residential communities
Buffer zone	The special-use forest management board is responsible for formulating investment programs and projects for the development of buffer zones; organize the implementation of investment programs and projects in the buffer zone with the participation of local communities; coordinate with local authorities in reviewing and formulating management plans for residential land and production land interspersed in special-	Organizations, households, individuals, local communities or organizations operating in the buffer zone have the right to supervise, participate in the implementation, and coordinate in the management of investment programs and projects in the buffer zones

	use forests and submit them to competent state agencies for approval. (***Clause 5 Article 54 Law on forest***)	according to regulations. provisions of law (***Clause 6 Article 54 Law on forest***)
	The special-use forest management board shall assume the prime responsibility for, and coordinate with the authorities and residential communities in, formulating investment programs and projects for the development of the buffer zone. Dossier submitted for appraisal and approval of investment programs and projects in the buffer zone according to the provisions of the Law on Public Investment (***Clause 3 Article 16 Decree No. 156/2019/NĐ-CP***)	
	Research and propose Article to adjust the area of marine protected areas; area and location of functional subdivisions of marine protected areas and buffer zones (***Point k Clause 2 Article 11 Decree No. 26/2019/NĐ-CP***)	

Sources: Law on Forestry 2017; Decree 156/2019/ND-CP dated November 16, 2018 of the Government detailing a number of Articles of the Law on Forestry.



Notes: MARD (Ministry of Agriculture and Rural Development), DOF (Department of forestry), MONRE (Ministry of Natural Resources and Environment), PA (protected area), BCA (Biodiversity Conservation Agency)

Figure 2. Diagram of the parties involved in the management of the protected area buffer zone

Since the definition of the buffer zone of the protected area is not clear, the management entity has not been identified. Currently, the management of the buffer zone is a coordination between the management board of the protected area and the local authorities, so the management and administration have not been highly unified.

3.2.3. Parties involved in the management of protected zones of aquatic resource

Table 12. Legal regulations on parties to protected zones of aquatic resource

Regulation	**Protected zones of aquatic resource**
Law on fisheries	The Ministry of Agriculture and Rural Development organizes Article to investigate, determine and issue a list of aquatic resource protection zones nationwide (***Point a Clause 2 Article 17***)
	Provincial-level People's Committees organize Articles to investigate and determine additional aquatic resource protection zones in the area, and report to the Ministry of Agriculture and Rural Development for consideration and addition to the list of aquatic resource protection zones (***Point b Clause 2 Article 17***)
	Provincial-level People's Committees organize the management of aquatic resource protection zones in the locality (***Point c Clause 2 Article 17***)
	Ministry of Agriculture and Rural Development State management over marine conservation zones and aquatic resource protection zones nationwide (***Point h Clause 2 Article 101***)
	People's Committees at all levels State management over marine conservation zones and aquatic resource protection zones in their respective localities (***Point h Clause 1 Article 102***)

Sources: Law on fisheries 2017

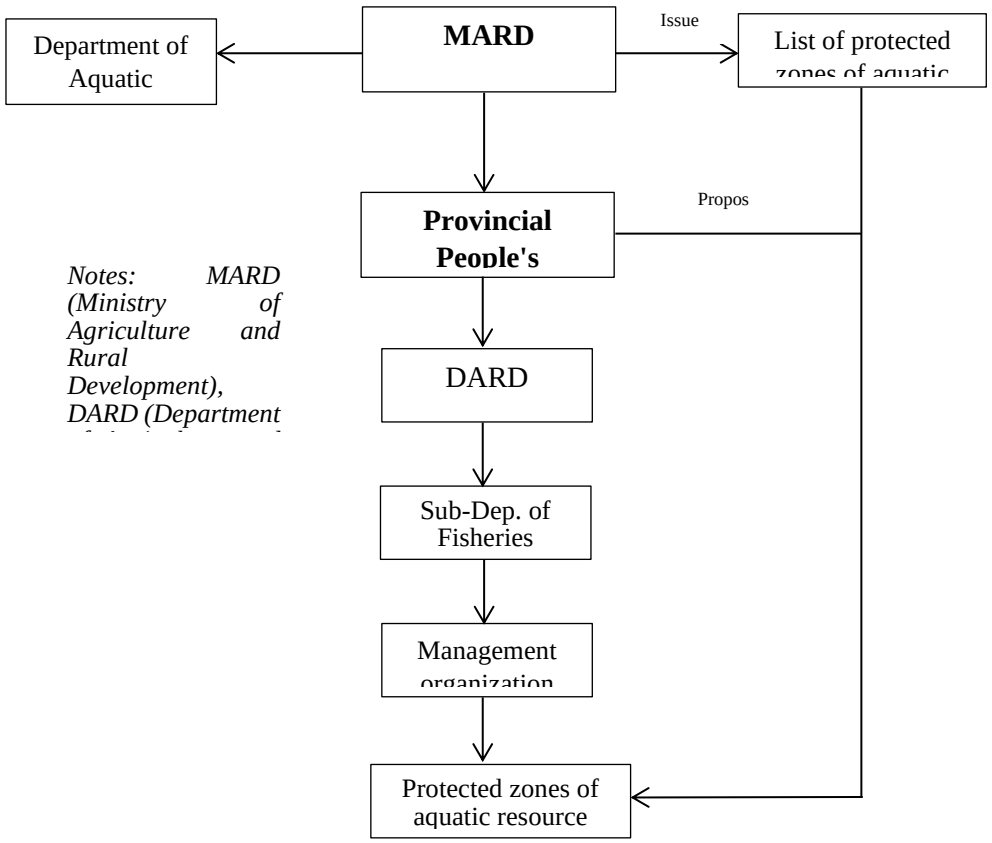


Figure 3. Diagram of parties involved in the management of aquatic resource protection zones

Co-management is a popular model in the exploitation and protection of aquatic resources across the country. Aquatic resource protection zones are assigned to organizations, communities and individuals for management and administration, and are answerable to management agencies. However, the management of these zones has not been demonstrated in practice, except in the case of Thua Thien Hue province.

3.2.4. The parties involved in the management of the biodiversity borridor

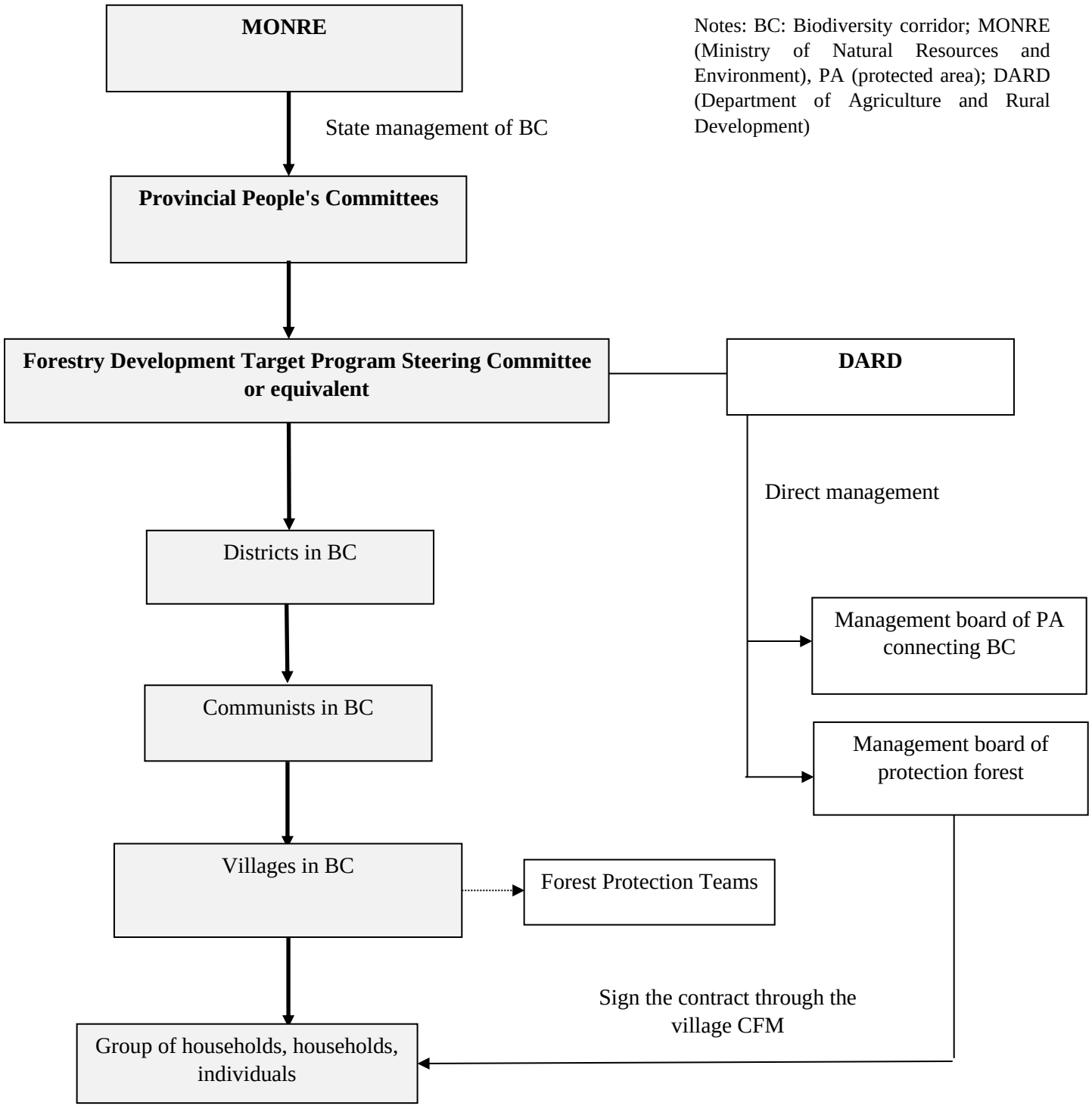


Figure 4. Diagram of stakeholders in biodiversity corridor management

Note: The above diagram is based on the 03 Decisions on the establishment of biodiversity corridors of Quang Nam, Quang Tri and Thua Thien Hue.

Responsibilities of the Provincial People's Committee:

- Directing activities of sustainable management and development of biodiversity corridors in their provinces.

- Direct the addition and integration of biodiversity corridor management tasks into the Provincial Steering Committee of the Targeted Forestry Development Program (or another appropriate Provincial Steering Committee); functions and tasks of the Departments of Agriculture and Rural Development, Natural Resources and Environment and related agencies of the province.

Responsibilities of District People's Committee:

- Be responsible before the Provincial People's Committee for the management of the area of biodiversity corridor in the district.

- Supplementing and integrating the task of managing the biodiversity corridor into the task of implementing the district-level forest protection and development plan;

- Directing the addition of biodiversity corridor management tasks to the functions and tasks of the Departments of Agriculture, Natural Resources and Environment, forest rangers, People's Committees of affiliated communes, and other agencies. related.

- Closely coordinate with relevant departments and agencies of the province to perform the tasks, contents, and activities of biodiversity corridor management.

Responsibilities of Commune People's Committee:

- Supplement and integrate the task of biodiversity corridor management into the task of implementing the commune-level forest protection and development plan.

- Guiding and organizing activities of forest management, protection and development in the area assigned to manage.

- Implement inspection and supervision of forest management, protection, and development according to specific assignments and decentralization for forest owners who are communities, households, and individuals, especially CMBs. The article coordinates other relevant organizations, such as the commune farmer's association, the veteran's association, the women's union, the youth union, etc. to coordinate and support the CMBs when necessary.

- Timely receive and handle violations beyond the handling competence of the village-level CFM.

Responsibilities of Conservation Area Management Boards; the Management Boards of Protection forests; Forest companies: supplement and integrate the tasks of biodiversity corridor management into documents specifying functions, tasks, and organizational structure of units and organizations, and submit them to competent authorities for approval for implementation. declare; Actively coordinate and support

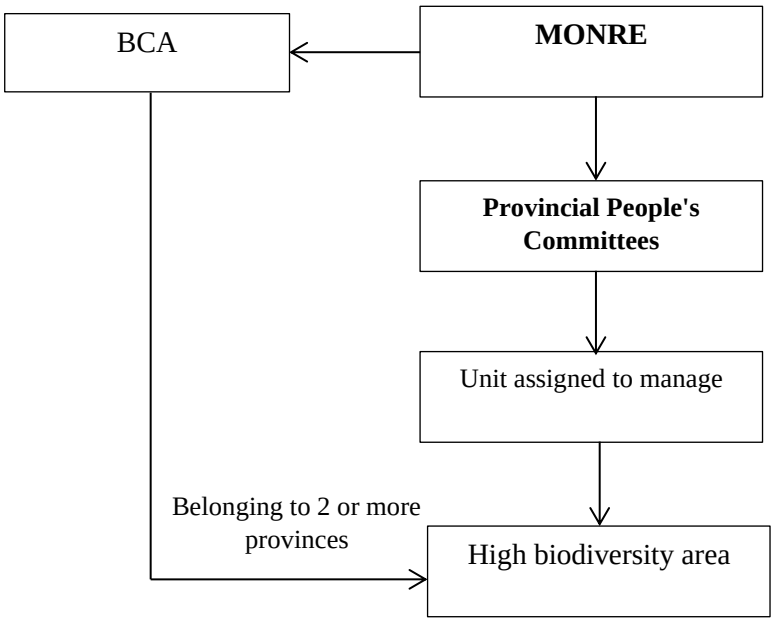
Community Forest Management Boards in order to well protect the allocated forest areas and adjacent community forest areas within the biodiversity corridor.

Responsibilities of villages belonging to communes located in the BD corridor: organizing the implementation of activities to manage and protect the biodiversity corridor, managing the village's community forest according to the provisions of law and guidelines, direction of the People's Committee of the commune.

The responsibility of forest owners is a group of households, households, and individuals managed by the village community forest management board, operating in accordance with the approved Regulation on village community

3.2.5. The parties involved in the management of areas of high biodiversity

Currently, there are no recognized areas of high biodiversity in Viet Nam. The management of areas of high biodiversity has not been mentioned in the regulations. In case the high biodiversity area is a natural heritage (according to Point c Clause 1 Article 20 of the Law on Environmental Protection), if the area of high biodiversity is located in the province, it will be managed by the province, if it is located in the province. in the area of 2 or more, provinces will be managed by the Ministry of Natural Resources and Environment.



Notes: MONRE (Ministry of Natural Resources and Environment), BCA (Biodiversity Conservation Agency)

Figure 5. Diagram of stakeholders in the management of a high biodiversity area

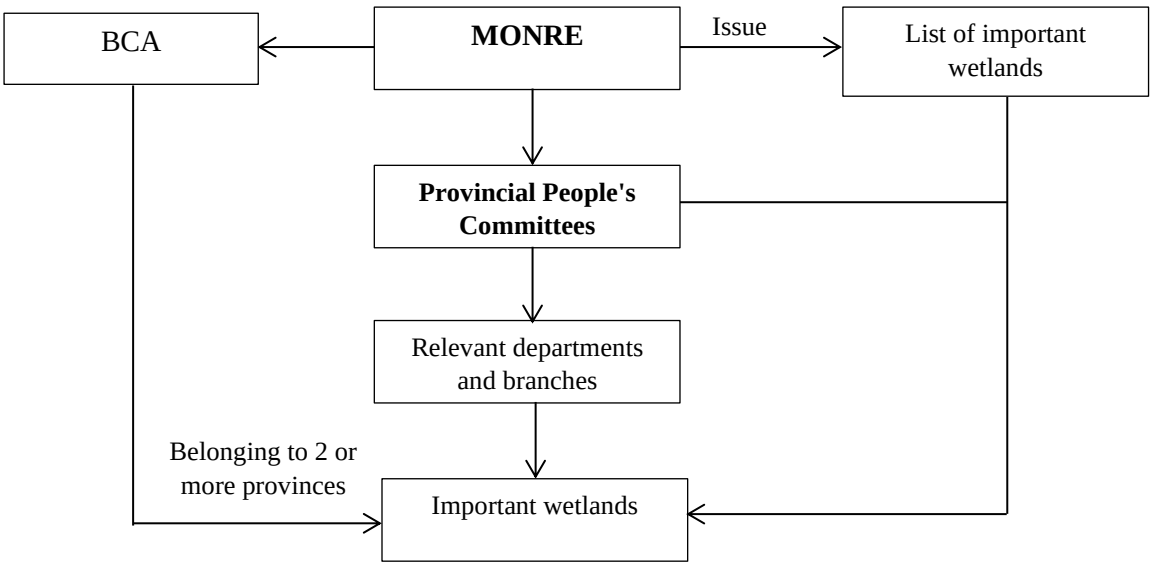
3.2.6. Stakeholders involved in the management of important wetlands

Table 13. Legislation on important wetland stakeholders

Regulation	Important wetland
Decree No. 66/2019/NĐ-CP	Ministry of Natural Resources and Environment: Guidelines: statistics, inventory and classification of wetlands on a national scale; monitoring important wetlands; prepare reports on wetlands; organize a council to appraise project dossiers on establishment of conservation zones; organization that manages a wetland reserve or significant wetlands located outside the protected area (***Point c Clause 1 Article 31***)
	Ministry of Agriculture and Rural Development: Coordinating with the Ministry of Natural Resources and Environment to manage conservation and use activities of important wetlands (***Point a Clause 2 Article 31***)
	The Ministry of Finance shall guide the management, use and settlement of expenses for the management, conservation and sustainable use of important wetlands. (***Clause 3 Article 31***)
	The Ministry of Planning and Investment shall allocate investment capital for tasks and projects using public investment capital to manage and develop important wetlands in accordance with current law. (***Clause 4 Article 31***)
	People's Committee: - Organize the management of important wetlands under local management responsibility; take measures to prevent changes in ecological characteristics of wetlands and restore natural wetland ecosystems and degraded important wetlands. - Propaganda, education, and awareness raising on environmental protection and biodiversity conservation for communities living in and around wetlands and organizations and individuals that have activities related to the land important flooding - Coordinate with the Ministry of Natural Resources and Environment and relevant ministries in guiding and inspecting activities of conservation and sustainable use of important wetlands; manage inter-provincial protected areas within the area and provide the results of Article survey and inventory of wetlands to the Ministry of Natural Resources and Environment (***Article* 32**)
Circular No. 07/2020/TT-BTNMT	The specialized environmental protection agency of the province shall assist the People's Committee of the province in performing the following tasks: - State management of conservation and sustainable use of important wetlands in the area as prescribed in Article 24 of Decree No. 66/2019/ND-CP dated July 29,

	2019 of the Government on conservation and sustainable use of wetlands (***Point a Clause 1 Article 12***). - Organizations and individuals operating on important wetlands located outside the protected area are responsible for implementing the Regulation on coordination of management as provided for in Clause 2 Article 13 of this Circular (***Clause 2 Article 12***). - Develop regulations on coordinated management of important wetlands located outside the protected area and submit it to the Chairman of the Provincial People's Committee for approval (***Clause 1 Article 13***)

Sources: Decree No. 66/2019/ND-CP dated July 29, 2019 of the Government on Conservation and sustainable use of wetlands; Circular No. 07/2020/TT-BTNMT dated August 31, 2020 of the Ministry of Natural Resources and Environment guiding Decree 66/2019/ND-CP.



Notes: MONRE (Ministry of Natural Resources and Environment), BCA (Biodiversity Conservation Agency)

Figure 6. Diagram of important wetland management stakeholders

It is not clear which stakeholders are involved in the management of important wetlands as they have not been established in practice. According to current regulations, this subject will be assigned to the Provincial Department of Natural Resources and Environment as the focal point, the mechanism of coordination with local authorities and communities where important wetlands is unknown.

3.2.7. Parties involved in the management of important ecological landscapes

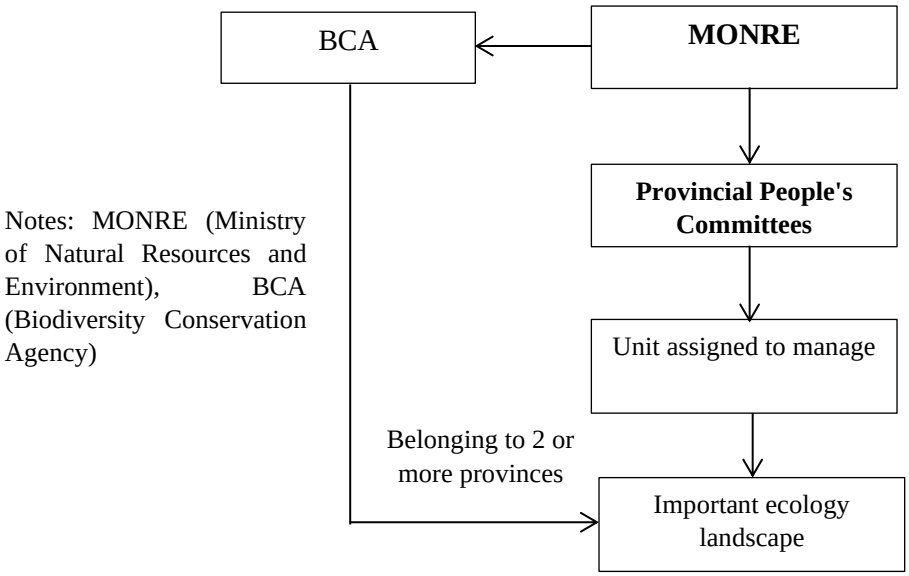


Figure 7. Diagram of important ecological landscape management stakeholders

Currently, there is no recognized important ecological landscape in Viet Nam. The important ecological landscape management has not been mentioned in the regulations. In case the important ecological landscape is a natural heritage (according to Point c Clause 1 Article 20 of the Law on Environmental Protection), if the important ecological landscape is located in the province, it will be managed by the province. Tables of 2 or more provinces will be managed by the Ministry of Natural Resources and Environment.

3.2.8. Parties involved in the management of biodiversity conservation facilities

Table 14. Legal regulations on parties to biodiversity conservation facilities

Regulations	**Biodiversity conservation facilities**
Law on biodiversity	Rights and obligations of organizations and individuals managing biodiversity conservation facilities (***Article 43***)
Decree No. 65/2020/NĐ-CP	Organizations and individuals wishing to establish a biodiversity conservation facility must submit a written request for establishment to the People's Committee of the province where the establishment is intended. (***Clause 1 Article 17***)
	Provincial-level People's Committees are responsible for considering and granting and revoking certificates of biodiversity conservation facilities (***Clause 3, 4 Article 17***)

	Provincial-level People's Committees approve the bringing of species prioritized for protection from the natural environment to rearing, planting at biodiversity conservation facilities and releasing them from rescue facilities to their natural habitats. (***Clause 1 Article 15***)

Sources: Law on Biodiversity 2008; Decree 65/2010/ND-CP dated June 11, 2010 of the Government detailing a number of Articles of the Law on Biodiversity

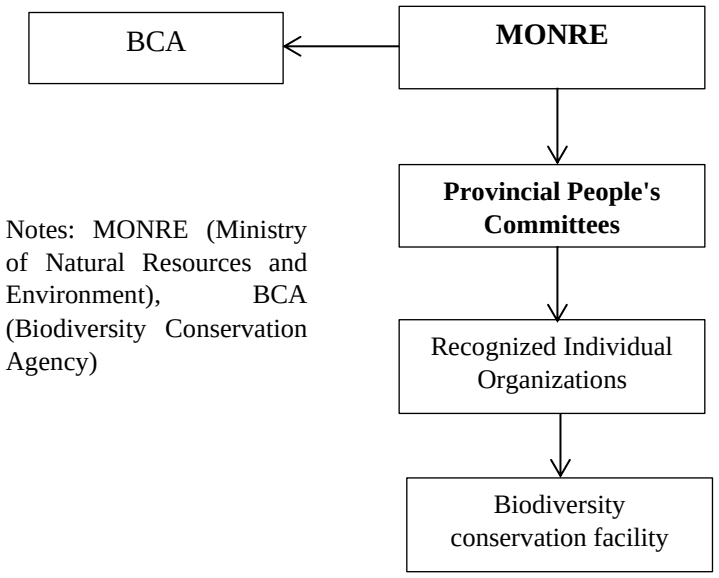


Figure 8. Diagram of the parties involved in the management of biodiversity conservation facilities

Biodiversity conservation facilities are currently managed by organizations and businesses in the decision approving biodiversity conservation facilities of the Provincial People's Committee. They must take responsibility before the Provincial People's Committee for the management of their assigned biodiversity conservation facilities.

3.2.9. Parties involved in national tourist area management

Table 15. Regulations on the parties to the national tourist area

Regulation	The national tourist area
Law on Tourism	The Government shall prescribe the management model of the national tourist area; Provincial-level People's Committees stipulate the management model of provincial-level tourist resorts (***Clause 2 Article 29***)
Decree No. 30/2022/NĐ-CP	Types of organizations to manage national tourist resorts include: National tourist resort management units under the management of ministries and ministerial-level agencies; The National Tourist Area Management Board is under the management of the People's Committee of the province or centrally run city (hereinafter referred to as the People's Committee of the province); Enterprises invest in the formation of a national tourist area (***Article 4***)

Sources: Law on Tourism 2017; Decree No. 30/2022/ND-CP dated May 19, 2022 of the Government stipulating the national tourist area management model

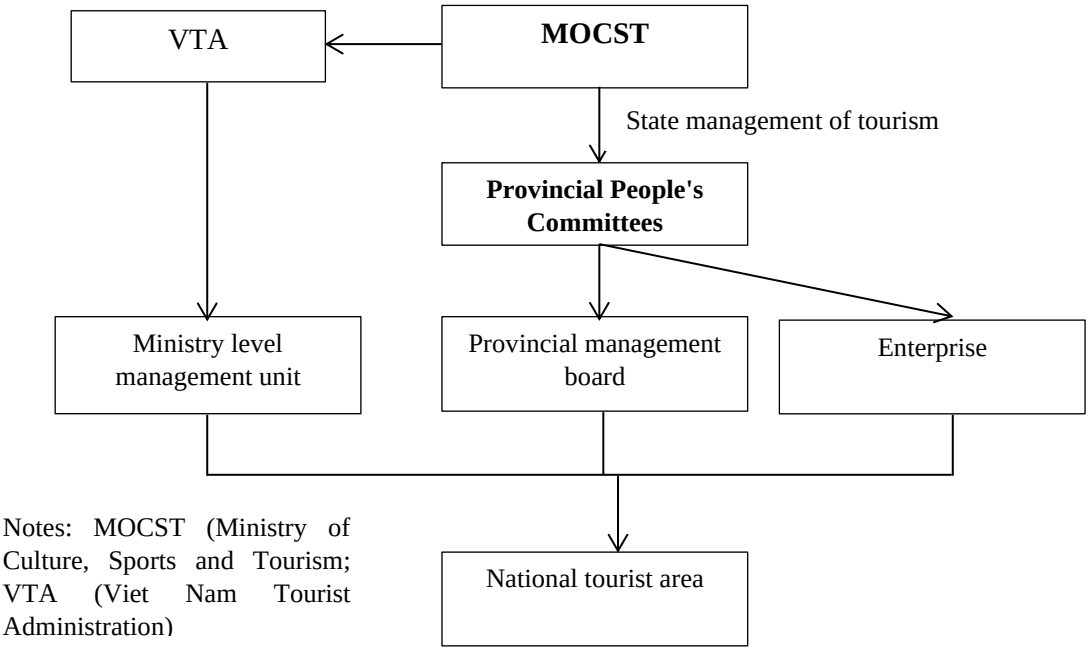


Figure 9. Diagram of the parties involved in the management of the national tourist area

The parties involved in the management of the national tourist area are quite clear and have been specified in detail. However, the effectiveness of management needs to be assessed when considering potential OECMs.

3.3. Legal gaps to promote OECMs implementation in Viet Nam

3.3.1. Assessment of suitability of potential subjects to become OECMs

Table 16. Results of assessing the suitability of potential subjects to become OECMs with the main criteria of CBD and IUCN

No.	POTENTIAL OECM	CRITERIA OF CBD/IUCN			
		protected area but not protected area	**Governed and managed area**	**Sustainably and effectively contribute to biodiversity conservation and contribute to *in-situ* conservation**	**Areas with linked ecological functions and service, cultural, spiritual, socio-economic values for the locality**
1.	Protection forests	***Satisfaction***: defined boundaries, locations, areas on the field and on the map, recognized by the competent authority	***Satisfaction:*** assigned to forest owners to manage and operate, responsible to management agencies	***Satisfaction:*** ensure long-term effectiveness of forest biodiversity conservation in a given area	***Satisfaction***: ensure the functions of watershed protection, water source protection, border protection, windbreak, flying sand barrier, wave break, sea encroachment; contribute to ensuring livelihoods and socio-economic stability for localities in areas with Protection forests.
2.	Natural production forests	***Patial satisfaction:*** the area and boundary can be determined on the map, but in reality, there is still unclear about the boundary with the area of production forest being planted forest	***Patial satisfaction:*** are assigned to forest owners for management but limited in control because the area is usually small, closely	***Patial satisfaction:*** mainly forest protection; affected by the exploitation of production forests which are planted forests	***Not satisfaction***: generate livelihoods (through payment for forest environmental services) only for a small group of local communities.

No.	POTENTIAL OECM	CRITERIA OF CBD/IUCN			
		protected area but not protected area	**Governed and managed area**	**Sustainably and effectively contribute to biodiversity conservation and contribute to *in-situ* conservation**	**Areas with linked ecological functions and service, cultural, spiritual, socio-economic values for the locality**
			interspersed with other forest types.		
3.	Buffer zone	***Patial satisfaction:*** The buffer zone area is defined on the map but in reality the boundary is not clear	***Patial satisfaction***: Buffer zone management is a coordination between the management board of the protected area and local authorities in the buffer zone, so the management and administration have not been highly unified	***Patial satisfaction:*** The effect of effective, long-term biodiversity conservation is unclear	***Satisfaction:*** contribute to creating a protection belt for the conservation area, enhancing the habitats for animals, creating community livelihoods as well as reducing exploitation pressure on the conservation area; contribute to creating cultural and spiritual values for the local community
4.	Protected zones of aquatic resource	***Satisfaction:*** have specific boundaries, locations and areas on the field and on the map, recognized by competent authorities	***Satisfaction:*** are assigned to organizations and individuals to manage, operate, and be responsible before the management agency	***Satisfaction***: ensure the long-term effectiveness of biodiversity conservation in the fisheries sector in a given area	***Satisfaction***: Having the linking function in inland and coastal wetland ecosystems; provision of ecological services, especially provisioning services; contribute to community livelihoods and create cultural and spiritual values for local communities

No.	POTENTIAL OECM	CRITERIA OF CBD/IUCN			
		protected area but not protected area	**Governed and managed area**	**Sustainably and effectively contribute to biodiversity conservation and contribute to *in-situ* conservation**	**Areas with linked ecological functions and service, cultural, spiritual, socio-economic values for the locality**
5.	Biodiversity corridors	***Satisfaction:*** have specific boundaries, locations and areas on the field and on the map, recognized by competent authorities. However, the boundary determination is at the pilot stage in 3 biodiversity corridors established in Quang Nam, Quang Tri and Thua Thien Hue.	***Satisfaction:*** assigned to organizations and individuals to manage and operate through administrative organizations at district, commune and village levels.	***Satisfaction***: ensure the long-term effectiveness of terrestrial biodiversity conservation in the biodiversity corridor	***Satisfaction:*** Ensure the function of linking habitats and ecosystems in a large area; provide ecosystem services, mainly forest environment services; contribute to enhancing community livelihoods, creating cultural and spiritual values for communities living in biodiversity corridors
6.	Area of high biodiversity	***Patial satisfaction***: Not yet established in reality, just zoned for planning on the map	***Not satisfaction***: chưa rõ cơ chế quản lý do chưa được thành lập trên thực tế	***Patial satisfaction:*** the current status of planned high biodiversity areas that have been contributing to biodiversity conservation for a given area. However, it is not certain in the long-term because it is possible that these areas will be converted to economic development goals.	***Patial satisfaction:*** recognition of the associated ecological function as well as the values that the area of biodiversity can bring. However, there are no specific evaluations in practice.

No.	POTENTIAL OECM	CRITERIA OF CBD/IUCN			
		protected area but not protected area	**Governed and managed area**	**Sustainably and effectively contribute to biodiversity conservation and contribute to *in-situ* conservation**	**Areas with linked ecological functions and service, cultural, spiritual, socio-economic values for the locality**
7.	Important wetlands	***Patial satisfaction***: Not yet established in eality, just zoned for planning on the map	***Not satisfaction***: It has just been specified in the regulations, the actual management mechanism is unknown because it has not been established yet.	***Patial satisfaction***: ecognize the contribution to effective conservation of biodiversity of wetland ecosystems, on-site conservation of aquatic species of conservation value	***Patial satisfaction***: recognition of the associated ecological function of wetlands; specific and representative values (such as Article harmonization of water resources, ecological balance), values of landscape, human ecology, history, and culture. However, there are no detailed reviews in reality.
8.	important ecological landscape	***Not satisfaction***: Currently, it is only planned with a very large area, with unclear boundaries	***Not satisfaction***: Due to the very large area, the management mechanism is complicated, there is no review and consensus	***Patial satisfaction***: recognition of a large-scale contribution to biodiversity conservation, in situ conservation	***Patial satisfaction***: In the case of establishment, this is an object with outstanding advantages of linking landscapes and ecosystems, bringing value of ecological services on a large scale, making a great contribution to the local government. However, there is no specific assessment in practice because it has not been established yet.

No.	POTENTIAL OECM	CRITERIA OF CBD/IUCN			
		protected area but not protected area	**Governed and managed area**	**Sustainably and effectively contribute to biodiversity conservation and contribute to *in-situ* conservation**	**Areas with linked ecological functions and service, cultural, spiritual, socio-economic values for the locality**
9.	Biodiversity conservation facility	***Satisfaction:*** Biodiversity conservation facilities are often small in size and are defined in detail in terms of area and location on both the field and the map.	***Satisfaction:*** Article is managed and operated by organizations and individuals decided by the Provincial People's Committee	***Patial satisfaction***: only partially contribute to the conservation of biodiversity according to the objectives of that biodiversity conservation facility	***Not satisfaction***: Due to its small scale and specific conservation goals, it only partially meets the economic needs of a small group of communities.
10.	National tourist areas	***Satisfaction:*** There are regulations on zoning of areas, but in reality, it is difficult to determine the boundaries	***Satisfaction:*** There have been regulations assigned to related parties to manage, but this regulation has just been issued, so it is not clear how effective it is in practice.	***Patial satisfaction***: It is not clear how to contribute to the long-term effect of biodiversity conservation as well as *in-situ* conservation	***Satisfaction:*** National tourist sites usually have a large area, so they will have linked ecological functions as well as service, cultural, spiritual, socio-economic values for the locality

3.3.2. Assessing regulatory gaps to promote OECMs implementation in Viet Nam

Basically, there are regulations to identify OECMs in Viet Nam. However, they are not unified and detailed to identify OECMs according to CBD recommendations and IUCN guidelines. In addition, there are many other potential OECMs objects (Areas banned from fishing for a definite time, Areas of artificial habitat for aquatic species, areas of agro-forestry production, etc.) that have not yet been defined due to lacking of background information and needs to be investigated and evaluated specially in subsequent studies.

Lack of unified and comprehensive regulations to promote OECMs implementation in Viet Nam. These objects are governed by many Laws and under-law documents therefore they have not yet reached consensus. This can lead to cross-conflict, make the OECMs implementing process difficult to identify and complicated in Viet Nam.

Implementing OECMs effectively if the role and contribution of the private sector is promoted. However, Viet Nam recently lacks specific legal regulations, mechanisms and policies to encourage private participation in the conservation of nature and biodiversity.

Sustainable financial and revenue mechanisms are the key to OECM's sustainable development. Although a number of regulations have been generated, it is still a big gap in the legal regulations in Viet Nam..

4. Proposing a list of potential OECMs in Viet Nam

4.1. Develop a set of screening criteria

From the results of the overall assessment of the suitability of potential subjects to become OECMs with CBD/IUCN guidelines and recommendations; Based on the actual situation of potential subjects to become OECMs in Viet Nam, the research team has defined the screening criteria to identify specific OECMs as follows::

- IUCN and CBD OECMs criteria: taken according to the main criteria include (i) protected area but not protected area; (ii) Governed and managed area; (iii) Sustainably and effectively contribute to biodiversity conservation and contribute to *in-situ* conservation; (iv) Areas with linked ecological functions and service, cultural, spiritual, socio-economic values for the locality.
- Prioritize potential subjects to become established OECMs.
- Priority is given to objects with mixed ecosystems, especially marine and coastal ecosystems.
- Priority is given to the management of potential OECMs who are state agencies.

4.2. Source list of potential objects to become OECMs

Table 20. Source list of potential objects to become OECMs

No.	Potential OECMs	Sources
1.	Protection forests	The national forestry master planning plans 296 Protection forests nationwide
2.	Natural production forests	The national forestry master planning s: Only areas have been identified, areas with natural production forests have not been identified
3.	Buffer zone	The national forestry master plan and the national biodiversity conservation master plan: Buffer zones of protected areas are determined together with decisions on establishment of protected areas. Currently, there are 179 protected areas across the country that have been established.
4.	Protected zones of aquatic resource	The national master plan on exploitation and protection of aquatic resources planning 63 zones
5.	Biodiversity corridors	The national biodiversity conservation master plan planning 13 biodiversity corridors
6.	Area of high biodiversity	National master plan on biodiversity conservation planning 22 areas with high biodiversity
7.	Important wetlands	The national biodiversity conservation master plans planning 11 important wetlands
8.	important ecological landscape	The national biodiversity conservation master plan planning 24 important ecological landscapes
9.	Biodiversity conservation facility	The national biodiversity conservation master plans planning 47 biodiversity conservation facilities

4.3. Applying the set of criteria to propose a list of potential OECMs in Viet Nam

Based on the above screening criteria, the expert team reviewed and proposed a list of potential OECMs in Viet Nam, including the following lists:

- The list of potential protection forests is OECMs

- The list of potential protected zones of aquatic resource is OECMs

- The list of potential biodiversity corridors s is OECMs

- The list of potential important wetlands is OECMs

- The list of buffer zones of established coastal and marine protected areas is OECMs.

- The list of multi-conservation facilities that have been established is OECMs.

5. Developing a landscape approach in defining and implementing OECMs

5.1. Objectives

Take a broad and comprehensive approach to identify potential OECMs and manage them when recognized by the authorities.

5.2. Scope and regulated entities

Scope of application nationwide with all ecosystems including: forest, sea, wetland, mixed, limestone mountain.

Subjects of application are organizations and individuals directly and indirectly involved in the management of OECMs..

5.3. Content of the method

Landscape approach is an integrated approach, which tends to be applied a lot globally in the natural and biodiversity conservation, especially in Europe and North America. This approach is considered appropriate to address current biodiversity conservation:

- Habitat fragmentation and climate change are the main threats to biodiversity in large scales (Leimu et al., 2010). Habitat fragmentation due to natural and human factors. Natural factors often cause landscape fragmentation at a large scale and slow speed (the process of sea level rise in the interglacial period, or the process of marine regression in ice age periods). Anthropogenic factors cause landscape fragmentation on a small scale, mainly directly related to land use changes, environmental changes in short periods. Habitat fragmentation causes negative ecological effects on biological populations, including: areal reduction of total habitat area; reduce the average size of the habitat; loss of habitat in the landscape; increase marginal effects; isolate the habitat; decrease

biodiversity and increase species vulnerability to fragmentation (Forman and Godron, 1986).

- The biggest challenge for biodiversity conservation nowadays is identifying adaptive solutions for conservation populations in the context of global climate change. The theoretical and practical studies focus on the relationship between organisms and the landscape have been expanded in different territorial scales. At both global and local scales, the researches to analyze, assess and predict biodiversity changes due to habitat impacts have been increasingly prioritized. In the approaches, the biodiversity conservation at landscape-scale conservation level (LSC) is considered as the best approach to solve problems of system planning and design in natural protected areas; solutions to minimize the negative ecological consequences due to the fragmentation and loss of habitat; solutions to mitigate the vulnerability of biological populations due to climate change and human impacts.

- Theoretically, the biodiversity conservation at the landscape scale focuses on biological relationships in the landscape, particularly in the interaction relationship between organisms existing in the same heterogeneous landscape. Scientific principles are built based on inheriting theories of ecosystem ecology, on the other hand, develop their scientific principles of ecology, and resolve specific biological relationships at the landscape level. The most prominent theories and models have been known such as source-target dynamics model, metamorphic population theory, geo-biology theory, the Integrated Human Ecosystem (Naveh and Liebermann, 1984; Forman and Godron, 1986; Turner and Gadner, 2001).

- In practical terms, the landscape-scale biodiversity conservation goals and approaches have been implemented by the US National Oceanic and Atmospheric Administration (NOAA) in big research programs recently: Ecosystem-based management programs, Landscape Conservation Cooperatives, and Practitioners' Network for Large Landscape Conservation. In these programs, landscape-scale biodiversity conservation aims to:

+ Conservation based on the holistic approach: pay attention to integrated goals of ecology, society, economy, culture and institution.

+ Place-based conservation: Conservation on specific geographical areas (landscape, region, etc.), focusing on spatial - temporal scales and related activities and impacts.

+ Interconnection: Focusing on building ecological connections inside and outside the protected areas.

+ Multi-stakeholders: Attracting many stakeholders to participate in conservation.

+ Adaptive approach: Meeting needs and conservation conditions.

+ Multiple applications: Effectively apply to continental, coastal, marine and ocean environments.

Currently, Viet Nam is no exception, facing common problems in conservation of nature and biodiversity as many countries in the world under the pressure of socio-economic development and global climate change, including:

- Habitat fragmentation, lack of integration between living habitats, affecting functions and values of biodiversity: In Viet Nam, forest fragmentation is a common issue in all regions. The landscape of the Truong Son range has high biodiversity in Viet Nam and in the world with various rare and endemic species such as saola, langur, etc. Over the past decade, the natural forest in this area has been severely degraded and fragmented, affecting flood and drought regulation. Many rare and endemic species have been threatened.

- Socio-economic development activities have caused ecological pollution, significantly narrowed the habitat of species. Particularly, the mineral mining in Ha Nam province recently increases the risk of disappearance of the Delacour's langur. Meanwhile, this area has no spatial planning and has not yet established a suitable conservation area.

- The nature reserves in Viet Nam are mostly narrow, making it difficult to conserve species, especially large mammals. It is a big challenge to achieve the goal of biodiversity conservation, especially in the context of climate change. At the same time, the harmonization of conservation and development goals in the surrounding areas is still inadequate. The participation of local people in conservation and law enforcement needs to be vigorously implemented. The space for conservation and associated habitat has not been properly defined. Especially, the conservation outside the nature reserve has not been attended. It is an opportunity to diversify landscape protection methods at both small and large scales (compared to recent protected areas).

In order to solve the above problem, the landscape approach to nature and biodiversity conservation at landscape-level scales provides various advantages, compared to other approaches. Particularly, some proposals for Viet Nam can be explained as follows:

1) At the large scale, nature and biodiversity conservation systems can be established with protected areas and OECMs. In this system, the established protected areas, where have high biodiversity outside of the nature reserve, are as the center connecting the OECMs. This model will help solve difficult problems as follows:

- It is necessary to expand habitats for species while it is not feasible to expand established protected areas.

- Strengthening the exchange and connection between populations of species and habitats that have been divided due to socio-economic development and climate change.

- Ensuring the integrity of landscapes and living habitats in order to maintain important ecological functions, and increasing efficiency of nature conservation and biodiversity.

2) At the small scale, the landscape approach provides some advantages in defining the boundaries of OECMs:

- Landscape approach is an integrated approach which includes conservation goals in harmony with the OECM development. It is a suitable approach to identify OECMs based on: high biodiversity areas outside the reserve, biodiversity corridors, other important natural landscapes with conservation values.

- In terms of science, the landscape approach is synthetic, considering the systematicity, integrity and closely dependent relationships of constituent components. This approach is effective to define the boundaries of OECM objects that need to be preserved to ensure the systematic, integrity, maintain important ecological functions, and to promote the conservation values of natural objects.

5.4. Proposing mechanisms and policies to promote the implementation of OECMs in Viet Nam

In order to promote the implementation of OECM in Viet Nam, the most necessary and urgent activity is to complete the legal system, creating favorable mechanisms and policies to promote OECM development in Viet Nam. Focus on the following specific issues:

- Specifying criteria and issuing technical guidance to define OECM in accordance with the Viet Namese context: IUCN has issued guidance for the world based on CBD recommendations, however, Viet Nam needs internalize international commitments (elaboration of technical guidelines; inclusion in relevant Laws; amendment of the Law on Biodiversity, guiding legal documents, circulars promulgating norms techniques for the design and management of OECMs), promulgating guidelines appropriate to the national context.

- Establishing a sustainable development regime for OECMs: In order to achieve effective and for long-term development, it is necessary to establish a sustainable development regime for OECMs according to each specific OECM hierarchy (3 types of OECM as instructed by IUCN). OECMs in natural ecosystems need to be established with a sustainable development regime according to the regulation of Article 34 in the Law on Biodiversity (2008). Other OECMs need to have appropriate mechanisms and policies in the future to promote the development process.

- Applying the payment mechanism for natural ecosystem services to OECMs: The regulations on payment mechanism for natural ecosystem services were issued in Article 138 of the Law on Environmental Protection. These regulations are a strong legal basis that can promote the implementation of the payment mechanism for natural ecosystem services that OECM provides. The application of this mechanism for natural ecosystem services will create a sustainable revenue sources, promoting OECM implementation in Viet Nam.

- Mechanisms and policies to encourage the private sectors and the community to participate in OECM: Because the majority of OECMs are owned by the private sector and the community, instead of under the national management system. Therefore, it is necessary to build incentive policies to strengthen the role and participation of

communities and the private sectors in natural and biodiversity conservation through promoting OECM implementation..

6. Develop a map of potential OECMs areas in Viet Nam

6.1. Approach methods

- Earth observation (EO) data offers a potential solution, including direct or indirect assessments of many ecosystems or habitats. Most regional and international programs are based on collecting land cover (LC) or land use (LU) data, which provides an opportunity to manage and improve the quality of nature and the Ecosystem. Especially thanks to the availability of the Earth observation database from the past to the present with continuous support by planned future operational satellites.

- Remote sensing provides a unique ability to monitor large geographical areas, generating a lot of information related to land, atmosphere and oceans. Land cover and land use (LULC) mapping represents one of the most common uses of remote sensing data, with images captured by Earth observation satellites and one of the most important data sources. As remote sensing technology continues to be improved to improve spatial resolution with the ability to identify increasingly detailed levels of objects, remote sensing images are increasingly widely applied in management issues, and conservation (Liu et al., 2022; Mao et al., 2020; Prasad et al., 2015).

- Alongside with the above information extraction, landscape metrics are used to evaluate the relationship of LULC objects or between objects in space and their interactions over time. For ecosystems and landscapes, this measurement method allows us to assess fragmentation or fragmentation and measure the spatial structure of the landscape and habitat. This factor is the indicator of the impact of land use on the landscape of the conservation area and heritage area. Spatial metrics are a new way to determine the value of protected areas as well as high biodiversity values.

- Satellite imagery can provide a quick way to monitor natural and anthropogenic hazards in largely inaccessible areas. Impact scaling can quantify changes by indexing landscape features and monitoring trends in the landscape pattern (landscape pattern) over time.

- With the development of remote sensing applications, landscape patterns systems are an optimal method to solve the problem of habitat dispersion or separation of different types of landscapes. Specifically, a discrete fragment is a homogeneous living area, a landscape layer is a collection of the same type of discrete fragment, and an entire landscape is a collection of many landscape types. Applying the spatial measure system principle to describe and analyze the changes in the regional landscape can determine the interaction between ecological processes and fragmentation of land cover and land use (Babí Almenar et al., 2019; Lazaro et al., 2021; MalliE et al., 2020). This approach demonstrates how land cover and land use variability fragmentation can extract spatially

regular information. The current land cover and land use (LULC) map allows planners and managers to consider vulnerable habitat issues better and prioritize them in planning. In particular, habitat mapping is the key to designing practical actions to meet policy objectives.

- Morphological-structural and ecological criteria are considered both in the land cover and land use, and habitat classification. For example, the landscape in protected areas such as National Parks and river basins changes due to natural disturbances, ecological processes, and human activities. Therefore, it is necessary to monitor and map the LULC dynamics in and around conservation areas or OECMs with the most appropriate management measures to apply for biodiversity conservation and increase biodiversity. Correct use of those measures.

- Current land cover and land use mapping in potential OECMs is a powerful enabling tool for planning, management, and governance strategies and actions conservation of biodiversity, the management and establishment of OECMs, and the inclusion of carbon. To address key gaps in previously un-mapped potential OECMs of the whole of Viet Nam. The combined approach incorporates GIS and remote sensing, as well as the sharing of expert knowledge and the participation of stakeholders in the creation of current status maps of potential areas. It could be a demonstration of how important habitat mapping is for promoting multi-targeted actions, biodiversity conservation policies at the national and local levels, and sustainable development in Viet Nam.

Therefore, integrated remote sensing tools will also provide an effective option to study and quantitatively explain the process of land cover and land use (LULC) variability and analyze the impact on the land price. The value of protected areas, as well as other potential areas on multiple spatial and temporal scales, helps decision-makers better assess, plan and manage.

6.2. Contents of map explanation

6.2.1. Contents of the 1:1,000,000 scale geographic information system map

Mathematical basis of the map: (i) A frame of reference name Ellipsoid is ellipsoid typed WGS84 global which was located in accordance with the territory of Viet Nam; (ii) Show the density grid of latitude and longitude specified in the editorial plan for each type of map or design according to the thematic map.

- Spatial data: contains information about locating potential OECMS. Spatial data is represented in the basic form of points and regions. In this report, biodiversity corridors, important wetlands, and buffer zones of marine-coastal protected areas are regional spatial data; biodiversity conservation facilities, protection forests, and aquatic resource protection zones are point spatial data.

- Property data: reflects the properties of different geographical objects. Attribute data includes two types.

+ Quantitative Attribute: Describes quantitative factors such as size, area, etc.

+ Qualitative Attributes: Describes qualitative factors such as classifiers, type names. Each of these features is stored numerically along with an identifier.

Table 17. Geographical Information layers.

Layers	*Scope of application*
Base map 1.000.000	Specify the type of abstract geography at scale 1:1,000,000 defined with properties common to all types of features.
Boundary	Specifies the data structure of the types of geographical features on the subject of national borders and administrative boundaries
Hydrological	Specifies the data structure of the types of geographical features on the topic of hydrology
Transportation	Specifies the data structure of the geographic feature types on the topic of traffic

- Based on processes: (i) quick screening; (ii) full identification; (iii) elaboration of advice; and (iv) decision-making. The list of criteria and sub-criteria are provided in Appendix 2. From there, carry out the work of establishing OECMs maps throughout the territory of Viet Nam according to the proposed list of potential OECMs.

- In relation to the selection of specific locations in the entire territory of Viet Nam and the representation of spatial visualization of these locations through the use of digital map data collected from sources of Government and Remote Sensing Image Data are used to classify LULC types. The analysis was performed at a scale of 1: 1,000,000 (for the national map) and non-scale for the detailed map of potential OECMs.

- The time to carry out the LULC classification process is from November 1 to November 19. This work uses Sentinel-2 satellite image data synthesized in the period (1/2021-1/2022) and used together with auxiliary maps such as multi-conservation master plan map biodiversity in the period 2021-2030 at the rate of 1:1,000,000, administrative boundary map of 1:1,000,000 scale; background map google map; and Other GIS data sources.

- Based on analyses of Viet Nam's natural condition characteristics, the information layers of land cover and land use were synthesized into landscape types and shown in Table 22.

Table 18. Landscape types in potential OECMs.

Landscape type	*Description*
Waters	Areas with mostly year-round water; there is little, or no sparse vegetation, no rocky outcrops and no building feature such as docks,

	e.g., rivers, ponds, lakes, and man-made bodies of water of different (usually irregular) shapes.
Trees	Any cluster of dense vegetation that is significantly tall (~4.5 m or more), usually with a closed or dense canopy, e.g. natural forest, plantation forest, rehabilitated forest, or mangrove forest (thick/high vegetation with ephemeral water or canopy too thick to detect water below).
Flooded vegetation	Areas of any vegetation mixed with water during most of the year; The seasonally flooded area is a combination of grass/shrub/trees/open ground.
Crops	Land used for crop production, including areas of seasonal crops (wet rice), agricultural land that is vacant during the tillage stage with patches or sparse vegetation.
Built Area	Includes all man-made coating surfaces, such as high density residential buildings, commercial, industrial or transportation infrastructure. This area has hosted spatial models.
Bare ground	The lands are very sparse or have no vegetation year-round; areas of sand, rock and desert, with no or little vegetation; the bare surface is mostly barren land with thin soil layer.
Rangeland	A mixture of clusters of small trees or single trees scattered across an exposed rock or soil landscape, e.g., moderate to sparse cover of shrubs, shrubs and lawns or other soils.

- Base map: It is one of the pre-prepared input data used as a geographical basis to combine the interpretation results of potential OECMs at the time of observation. In this report, the background data layer collected from government sources at the scale: of 1:1,000,000 is stripped of content to suit the requirements of the base map. All of these jobs are performed on a specialized software system and stored in digital form.

6.2.2. The main content of the map of potential OECMs in Viet Nam

Purpose: For the purpose of locating OECMs areas and the current status of potential OECMs areas on the map.

Main content: On the map of potential OECMs, potential objects are shown in the form of points for protection forests, aquatic resource protection zones, and biodiversity conservation facilities. The map shows the regional patterns for biodiversity corridors, important wetlands, and buffer zones of marine-coastal protected areas.

- Intuitiveness: The Map shows the ability to cover and detail potential OECMs. The established map visualizes the information of the region and territory objects and reflects the objects' forms or the current state of the landscape type. The user can find out

the rules of the objects' distribution and the area's basic state in the list of potential OECMs.

- Measurable: Based on the scale and projection of the map, based on the scales of conventional symbols… The map has the ability to identify many different values such as coordinates, length, distance, area, direction, and others.

- Informational: The ability to store and convey to readers different news about the region's subjects and current state. The current information on the land use/ land cover helps users clearly identify the area and serve to plan the assessment of potential OECMs.

6.3. Spatial assessment of potential OECMs areas

- Habitats provide greater scope for linking EO data to biodiversity. Human land use leads to changes in soil cover that can negatively impact biodiversity. The conversion of natural and arable land to more developed uses reduces the available habitat. Human land use patterns also tend to result in fragmented landscapes and fragmented or restricted habitats in natural connectivity. Some plants and animals work better in patchy, fragmented environments, while others need large, uninterrupted spaces.

- Changes in the landscape will inevitably affect the quality of the natural habitat in general. The connection between natural habitats and arable land is constantly broken, fragmented by concreting during construction, fluctuating, and possibly degraded over different periods. In this report, the results provide valuable information for policy formulation of areas where urban agglomeration severely impacts the inherent local landscape. To better coordinate and promote the area's development around the city, it is necessary to develop development strategies based on scientific assessment, rationalize the surrounding areas and focus on improving sustainability. Meanwhile, the conservation and restoration of areas with high landscape connectivity will contribute to maintaining the overall functions of the Ecosystem for better biodiversity conservation.

- Land cover and land use (LULC) map is the basis of habitat mapping and biodiversity indicator extraction. The selection of the appropriate LULC classifier for habitat mapping applications is important for long-term supervision. Landscapes with low initial habitat ratios, where urbanization did not cause fragmentation, at shorter dispersal distances showed a greater increase in the connectivity of organisms with more extended time. Therefore, there is potential to promote the establishment of OECMs in locations with biodiversity conservation but not focusing on conservation goals.

-The size of the urban area or (construction land) also affects the level and direction of the change in connectivity. Areas with a high density of built-up land reduce connectivity. In contrast, small or medium-sized urban areas (low build-up land loss) may cause no significant change or decrease in connectivity. Therefore, it is also important to consider the percentage that occurs with built-up land in the landscape for areas assessed as potential OECMs.

- Understanding the construction, location, and conservation values of the lands managed by the State or the community or private sector is central to the implementation of a number of agreements on the conservation of Global Biodiversity. The information

on the assessment of OECMs with spatial information on potential objects has not been aggregated throughout Viet Nam.

Below is a table of the area of landscape types in potential OECMs areas:

Table 19. Statistical table of potential OECMs (Important wetland areas).

Name of important wetland	***Landscape type (hectare)***						
	Waters	Trees	Flooded vegetation	Crops	Built Area	Bare ground	Rangeland
The important wetland of Mong Cai - Dam Ha at the seaside	59513,6	4693,88	4374,42	510,68	496,96	67,43	575,83
The important wetland of Hoa Binh lake	61327,31	2495,92	69,12	7,71	121,43	6	71,81
The important wetland of River door of Dong Nai, Sai Gon	19953,24	37444,82	1847,21	322,88	486,2	159,73	65,22
The important wetland of Thac Ba lake	35976,52	2307,92	7178,31	355,35	352,56	16,12	575,82
The important wetland of Đong Nai North	29646,31	409,74	424,69	902,89	159,1	14,18	278,89
The important wetland of Dau Tieng lake	17610,85	768,01	171,5	4550,44	87,9	69,02	903,08
The important wetland of Cua Dai (Thu Bon river)	11577,46	78,83	14,3	626,15	1449,28	68,86	199,52

Name of important wetland	***Landscape type (hectare)***						
	Waters	Trees	Flooded vegetation	Crops	Built Area	Bare ground	Rangeland
The important wetland of Truong Giang	11081,84	45,12	24,67	264,93	972,51	66,02	63,51
The important wetland of Thac Mo lake	9700,76	511,61	433,05	356,49	6,39	0,91	462,89
The important wetland of Dong Nai 3 lake	1839,14	51,06	4339,79	0	0	0	23,93
The important wetland of Pleikrong	3046,00	3,29	75,16	20,34	3,64	1,01	203,22

Source: self-calculation based on the synthesis of LULC classification results from Sentinel-2 satellite image data.

Wetlands play an important role in nature and the environment, such as filtering fish for toxic substances; flow regulation (reducing floods and droughts) and carbon storage help mitigate the effects of climate change. At the same time, combating coastal erosion; stabilizes water levels in agricultural production areas; is home to many rare migratory birds (biodiversity protection); is a recreation venue and tourism for residents and visitors. In the long run, Viet Nam's wetlands have been playing an important role in socio-economic development towards sustainable development.

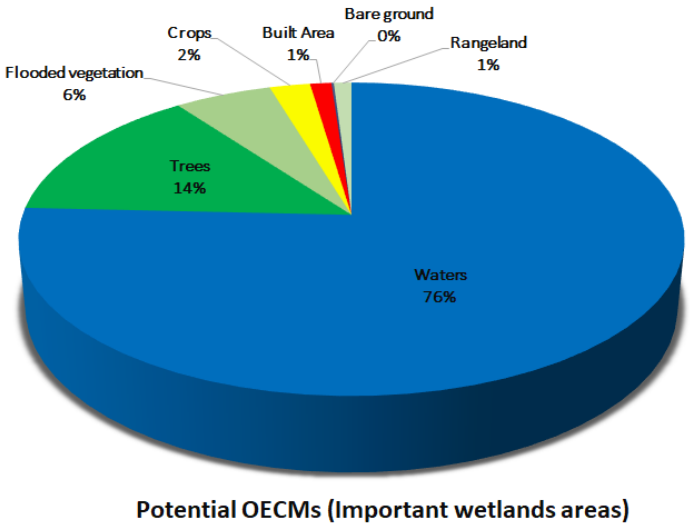


Figure 10. Landscape type composition structure of potential OECMs (Important wetland areas).

Protected areas associated with surface water identified and characterized include those under the Ramsar Convention Report (e.g., swamps; natural or man-made waters; temporary or frequent wetlands; standing or flowing bodies of water, which are fresh, brackish or saltwater, including seas with a depth of not more than 6 m at low tide). Spatial distribution of landscape types in important wetlands (11 areas), with a total area of 344982.3 Hectares. In particular, the dominant landscape types such as waters (76%), trees (14%), and flooded vegetation (6%); the remaining landscape types are secondary (2%), built area (1%), Rangeland (1%), Bare ground is negligible (Figure 10).

Table 20. Statistical table of potential OECMs (Biodiversity corridor areas).

Name of Biodiversity corridor	***Landscape type (hectare)***						
	Waters	Trees	Flooded vegetation	Crops	Built Area	Bare ground	Rangeland
Biodiversity Corridor of Sao La - Song Thanh	1162,8	72626,01	43,69	97,81	278,72	33,04	917,23
Biodiversity Corridor of Bac Huong Hoa – Dakrong	2061,42	108523,4	110,17	3661,69	1344,77	523,13	6632,47
Biodiversity Corridor of Sao La - Phong Dien	830,65	70682,69	0,07	1826,68	1416,61	78,56	2355,34

Biodiversity Corridor of Can Gio - Ba Lai - Long Khanh - Cu Lao Dung - Ca Mau cape	157702,7	13486,97	4313,18	3555,1	3013,23	187,32	500,52
Biodiversity Corridor of Xuan Thuy - Tien Hai - Thai Thuy	23776,21	3485,47	888,25	1279,72	4147,06	130,65	226,84
Biodiversity Corridor of Nam Xuan Lac - Na Hang	0,07	1170,44	0	0	17,83	0	26,04
Biodiversity Corridor of Pu Mát - Vu Quang	63,91	50647,9	0	90,34	25,16	6,26	81,03
Biodiversity Corridor of Na Hang - Ba Be	0,71	1563,02	0	0,05	6,03	0	28,95
Biodiversity Corridor of Tam Giang largoon - Dam Cau Hai - Bac Hai Van	133574,9	17735,58	311,18	11782,93	16155,99	1233,71	5229,69
Biodiversity Corridor of Cu lao Cham – Cua Dai	37897,01	1497,51	23,76	3745,66	7504,77	415,51	1547,48
Biodiversity Corridor of Nha Trang bay –Nha Phu dress	53010,57	10756,71	137,79	227,1	3302,87	187,02	785,34
Biodiversity Corridor of Con Đao - Phu Quy	680183,1	6722,58	0,55	31,98	1370,5	39,77	713,5
Biodiversity Corridor of	0,7	12474,35	0	0	0	0	9,55

VuQuang - Giang Man							

Source: self-calculation based on the synthesis of LULC classification results from Sentinel-2 satellite image data.

Biodiversity corridors play a role in maintaining animal and plant populations in nature by saving them from being destroyed by random factors, increasing genetic diversity, and retaining important cycles in ecosystems. The wildlife corridor also creates a green corridor with entertainment and aesthetics, connecting communities and cultures, improving community livelihoods, and increasing adaptability to climate change and nature. The construction of the wildlife corridor is more concerned with the structure of the corridor with little or no emphasis on functions: sustainable use of natural resources and livelihood development, precise definitions of optimal land use, and their harmonized land management mechanisms.

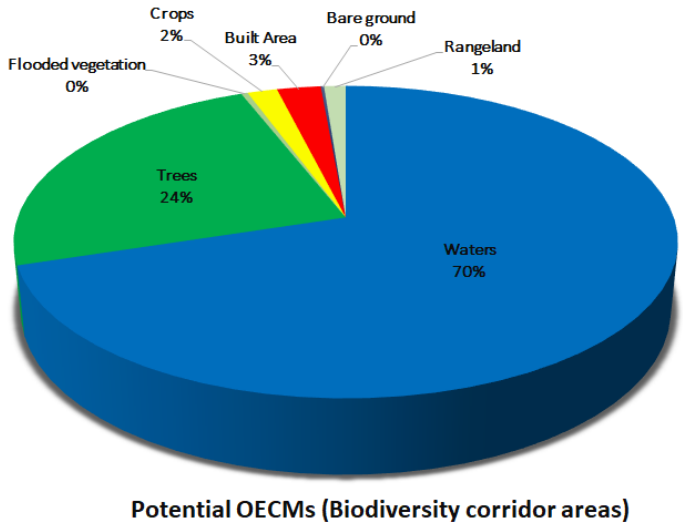


Figure 11. Landscape type composition structure of potential OECMs (Biodiversity corridor areas).

Types of landscapes in biodiversity corridors (13 areas) have a total area of 1.554.243 hectares. The spatial distribution of landscape types with a percentage of the landscape's area accounts for 70% of the total area; Landscape Trees (24%); Landscape Built area (3%); other landscape objects (Crops, Flooded vegetation) account for a negligible percentage.

Table 21. Statistical table of potential OECMs (Buffer zone of marine protected areas)

Name of Buffer zone of marine protected	*Landscape type (hectare)*						
	Waters	Trees	Flooded vegetaton	Crops	Built Area	Bare ground	Rangeland

Bai Tu Long Bay	9448,35	5309,72	204,54	12,04	252,82	22,55	32,98
Cat Ba Island	4936,9	7731,07	2574,78	3,54	17,4	4,21	63,7
Xuan Thuy National Parks	5424,45	1434,49	100,49	61,44	46,14	2,15	30,84
Bach Long Vi	26802,15	30,85	0	0	103,56	3,3	69,07
Thai Thuy	5313,81	1030,12	177,76	4,9	33,09	0	0,32
Tien Hai	432,23	525,1	167,56	103,92	87,11	1,72	2,36
Con Co	4328,69	165,02	0	0	30,68	1,52	6,09
Nui Chua National Parks	4132,63	18644,33	0	77,17	411,56	31,74	4018,59
Ly Son Island	6965,58	100,6	0	54,34	358,95	236,22	209,31
Nha Trang bay	11283,15	3004,44	0	0,12	405,17	128,76	178,36
Hon Cau Island	12424,31	0	0	0	0	1,44	74,25
Cu Lao Cham Island	21958,24	1387,45	0	0	92,21	8,46	53,64
Con Dao	12782,68	6273,62	0,55	3,93	600,61	23,59	198,17
Mui Ca Mau	20303,69	11401,14	1745,08	3464,56	460,6	1,52	3,41
Phu Quoc Island	40332,9	28333,52	179,01	14,77	616,86	42,07	525,77
Hon Khoai Island	181,97	423,79	0	0	3,39	0,86	10,99

By definition: "*A buffer zone is a clearly demarcated zone, with or without forest, adjacent to outside the conservation area and surrounding the conservation area, which has the effect of preventing or mitigating conservation area intrusion. All activities in the buffer zone must be aimed at supporting conservation work in the conservation area and the buffer zone, not migrating from outside into the buffer zone in any way; actively*

develop the economy, contributing to stabilizing and gradually improving the material, cultural and spiritual life of the population living in the buffer zone".

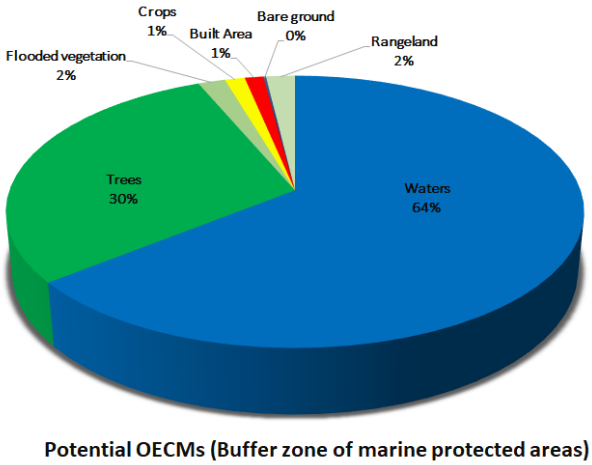


Figure 12. Landscape type composition structure of potential OECMs (Buffer zone of marine protected areas).

Quantitative statistical results from the land cover/land use classification model show that the total area of 16 buffer zones of marine and coastal protected areas is 291305.6 hectares. In particular, the potential subjects are the buffer zones of the national park and the national park, mainly the two landscape types, Waters and Trees, accounting for 64% and 30% of the total area, respectively. Other types of landscaping occupy a negligible percentage of the area.

CONCLUSIONS AND RECOMMENDATIONS

Viet Nam is a country with many opportunities and potentials to recognize OECMs based on following: (i) the current legal provisions on nature conservation and biodiversity in the systems of Biodiversity Law, Environmental Protection Law, Law on Forestry and other relevant documents and commitments of Viet Nam as an Party to the CBD Convention; (ii) 09 large groups of potential OECMs, including: Protection Forests, Natural Production Forests, Buffer Zones of protected Areas, Aquatic Resource Protection Areas, Biodiversity Corridors, High Biodiversity Areas, Important wetlands, Important Ecological Landscapes, Biodiversity Conservation Facility, National Tourism Area (not to mention other small potential OECMs such as sacred forests, temporary fishing ban zones, community-managed areas to protect aquatic resources, LMMA etc.).

Particularly for 02 potential OECMs - important ecological landscapes and national tourism areas, the list of potential OECMs has not been identified. The reasons are: the important ecological landscape area is not available in reality, the planning area is large, there is no basis for defining the boundary and there is overlap with other objects such as protected areas, protection forests.... The national tourism area, although already in operation, is quite wide in scope and overlaps with some protected areas or important wetlands.

Implementing OECMs in Viet Nam is an urgent task because it is in line with the trend of the world and helps Viet Nam to achieve its international commitments, especially the draft Goal 3 of the Post-2020 Global Biodiversity Framework. To fulfill this urgent need, we propose the following:

1. To prepare the legal and practical basis for the internalization of the international commitments of the Contracting Party to the CBD, in particular to develop policies and mechanisms for the new effective conservation model OECMs. The first step to take is to approve and implement a project with the support and participation of international organizations.

The project should set the following main objectives:

- Develop a set of criteria and a procedure to identify OECMs. On that basis, technical guidelines for identification and reporting of OECMs are issued in accordance with CBD and IUCN guidelines and, at the same time, appropriate to the Viet Namese context.
- Testing to identify and establish a list of potential OECMs in the whole country.
- Testing OECMs models to develop mechanisms and policies to encourage indigenous peoples, local communities and the private sector to participate in the establishment and management of OECMs according to the basic principles of FPIC.
- Classify (by conservation purposes, by types of ecosystems) and establish a sustainable development mode for each specific type of OECMs (primary conservation,

secondary conservation and auxiliary conservation) according to regulations provisions of the Law on Biodiversity 2008, the Law on Forestry 2017 and the *Law on forest* 2017.

- Application of payment mechanism for natural ecosystem services to OECMs: Regulations on payment mechanism for natural ecosystem services have been promulgated in Article 138 of the Law on Environmental Protection. These regulations are a solid legal basis, which can promote the implementation of the payment mechanism for natural ecosystem services provided by OECMs. Applying the payment mechanism for natural ecosystem services will create a sustainable source of income and promote the implementation of OECMs in Viet Nam.

- Communicating on biodiversity conservation, OECMs, ... to relevant stakeholders, especially those participating in the development, appraisal and approval of mechanisms, policies and legal regulations on OECMs.

2. Create opportunities, promote testing and practicing of different models of OECMs in terms of types of operation, governing bodies, area sizes, and types of land use and/ or water surface.

3. MONRE proposes to the Prime Minister (Government) to consider and direct the internalization of CBD's voluntary guidelines on OECMs through the following opportunities: amending the Biodiversity Law; promulgate legal documents granting Decrees of the Government or Decision of the Prime Minister.

4. MONRE proposes, and international organizations recommend the Government and the Prime Minister to direct ministries and sectors to consider and soon integrate OECMs into national and sectoral master plans. and regional and provincial master plans; promote the use of landscape approach in the formulation of various types of plans.

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Appendix 1: List of legal documents used for the research

1. Law on Environmental Protection 2020

2. Law on Biodiversity 2008

3. Law on Tourism 2017

4. Law on Forestry 2017

5. Law on Fisheries 2017

6. Law on Planning 2017

7. Decree 65/2010/ND-CP dated June 11, 2010 of the Government detailing a number of Articles of the Law on Biodiversity;

8. Decree No. 66/2019/ND-CP dated July 29, 2020 issued by the Government on Conservation and sustainable use of important wetlands;

9. Decree No. 37/2019/ND-CP dated May 7, 2019 of the Government detailing a number of Articles of the Law on Planning;

10. Decree No. 156/2018/ND-CP dated November 16, 2018 of the Government detailing the implementation of a number of Articles of the Law on Forestry;

11. Decree 83/2020/ND-CP dated July 15, 2020 of the Government amending and supplementing a number of Articles of Decree No. 156/2018/ND-CP dated November 16, 2018 of the Government regulating detailing the implementation of a number of Articles of the Forestry Law;

12. Decree No. 26/2019/ND-CP dated March 8, 2019 detailing a number of Articles and measures to implement the Law on Fisheries

13. Decree 08/2022/ND-CP dated January 10, 2022 of the Government guiding the Law on Environmental Protection

14. Circular 02/2022/TT-BTNMT dated January 10, 2022 of the Ministry of Natural Resources and Environment guiding the Law on Environmental Protection14. Decision No. 1719/QD-TTg dated October 14, 2021 of the Prime Minister on the national target program for socio-economic development in ethnic minority and mountainous areas for the period 2021-2030 Phase I: from 2021 to 2025.

15. Decision No. 809/QD-TTg dated July 12, 2022 of the Prime Minister approving the Sustainable Forestry Development Program for the period of 2021-2025.

16. Decision 523/QD-TTg dated April 1, 2021 of the Prime Minister approving the Viet Nam Forestry Development Strategy 2021-2030.

17. Decision No. 339/QD-TTg dated March 11, 2021 of the Prime Minister approving the Strategy for development of Viet Nam's fisheries to 2030, with a vision to 2045.

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Appendix 2: List of potential OECMs in Viet Nam

2.1. The list of potential protection forests is OECMs

No.	Protection forests	Province	Area (ha)
	Protection forest management board of Điện Biên District	Dien Bien	6.298,6
	Protection forest management board of Muong Cha District	Dien Bien	10.720,7
	Protection forest management board of Tuan	Dien Bien	10.219,8
	Protection forest management board of COPIA	Son La	9.915,2
	Protection forest management board of Sop Cop	Son La	5.386,1
	Protection forest management board of Mu Cang Chai District	Yen Bai	55.567,3
	Protection forest management board of Tram Tau	Yen Bai	35.397,5
	Protection forest management board of Bac Me	Ha Giang	10.538,0
	Protection forest management board of Hoang Su	Ha Giang	6.642,0
	Protection forest management board of Yen Minh	Ha Giang	5.642,1
	Protection forest management board of Vi Xuyen	Ha Giang	16.767,2
	Protection forest management board of Ba Che	Quang Ninh	7.022,9
	Protection forest management board of Tien Yen	Quang Ninh	4.980,0
	Protection forest management board of Yen Lap	Quang Ninh	10.656,8
	Protection forest management board of Mong Cai	Quang Ninh	11.803,0
	Protection forest management board of Truc Bai	Quang Ninh	10.091,2
	Protection forest management board of Dam Ha	Quang Ninh	6.354,4
	Protection forest management board of Minh Hoa	Quang Binh	19.116,3
	Protection forest management board of Tuyen	Quang Binh	29.024,9
	Protection forest management board of Quang	Quang Binh	11.363,6
	Protection forest management board of Dong Hoi	Quang Binh	3.519,1
	Protection forest management board of Quang	Quang Binh	51.789,4
	Protection forest management board of Dong	Quang Binh	29.196,3
	Protection forest management board of Quang Binh South seaside	Quang Binh	124.541,2
	Protection forest management board of Lang	Thanh Hoa	6.519,1
	Protection forest management board of Muong	Thanh Hoa	2.836,8
	Protection forest management board of Thuong	Thanh Hoa	10.198,1
	Protection forest management board of Song	Thanh Hoa	5.010,8
	Protection forest management board of Quan Son	Thanh Hoa	10.033,8
	Protection forest management board of Nhu	Thanh Hoa	9.057,8
	Protection forest management board of Thach	Thanh Hoa	5.012,4
	Protection forest management board of Nghi Son	Thanh Hoa	819,3
	Protection forest management board of Quy Chau	Nghe An	11696.0
	Protection forest management board of Tan Ky	Nghe An	6797.5
	Protection forest management board of Ky Son	Nghe An	108401.2
	Protection forest management board of Tuong	Nghe An	39530.8
	Protection forest management board of Con	Nghe An	74087.8
	Protection forest management board of Anh Son	Nghe An	8308.0
	Protection forest management board of Thanh	Nghe An	19785.7

No.	Protection forests	Province	Area (ha)
	Protection forest management board of Nghe An	Nghe An	5562.8
	Protection forest management board of Yen	Nghe An	6049.6
	Protection forest management board of Thach Han river basin		7.997,1
	Protection forest management board of Ben Hai river basin	Quang Tri	21.106,1
	Protection forest management board of Huong Hoa-Dakrong	Quang Tri	26.227,4
	Protection forest management board of A Luoi	Thua Thien Hue	23.487,4
		Thua Thien Hue	20.170,9
		Thua Thien Hue	11.272,2
		Thua Thien Hue	12.046,8
	Protection forest management board of Song Huong	Thua Thien Hue	
	Protection forest management board of Bac Hai	Thua Thien	11.591,5
	Protection forest management board of Bac Tra	Quang Nam	17.640,7
	Protection forest management board of Nam	Quang Nam	54.038,5
	Protection forest management board of Phuoc	Quang Nam	36.511,5
	Protection forest management board of Tay	Quang Nam	48.876,8
	Protection forest management board of Dong	Quang Nam	34.173,2
	Protection forest management board of Nam Tra	Quang Nam	39.643,0
	Protection forest management board of Phu Ninh and Quang Nam at the seaside	Quang Nam	11.189,7
	Protection forest management board of Ca Day	Binh Thuan	10.611,7
	Protection forest management board of Dong	Binh Thuan	7.939,8
	Protection forest management board of Phuc	Binh Thuan	2.473,5
	Protection forest management board of Ham	Binh Thuan	15.129,4
	Protection forest management board of Hong Phu	Binh Thuan	1.806,2
	Protection forest management board of La Nga	Binh Thuan	8.440,7
	Protection forest management board of Le Hong	Binh Thuan	8.249,5
	Protection forest management board of Phan	Binh Thuan	18.453,8
	Protection forest management board of Song Luy	Binh Thuan	8.896,9
	Protection forest management board of Song	Binh Thuan	4.587,1
	Protection forest management board of Song	Binh Thuan	12.276,8
	Protection forest management board of Song	Binh Thuan	10.231,3
	Protection forest management board of Tri An	Binh Thuan	12.531,6
	Protection forest management board of Tuy	Binh Thuan	3.808,1
	Protection forest management board of Thach	Kon Tum	29.627,1
	Protection forest management board of Kon Ray	Kon Tum	14.661,4
	Protection forest management board of Dak Ha	Kon Tum	21.326,8
	Protection forest management board of Tu Mo	Kon Tum	15.087,5
	Protection forest management board of Đak Glei	Kon Tum	42.661,2
	Protection forest management board of Nam Chu	Gia Lai	10.787,1

No.	Protection forests	Province	Area (ha)
	Protection forest management board of Đak Đoa	Gia Lai	16.175,9
	Protection forest management board of Đuc Co	Gia Lai	10.816,9
	Protection forest management board of Bac An	Gia Lai	8.563,7
	Protection forest management board of Nam Bien	Gia Lai	8.590,4
	Protection forest management board of Ia Grai	Gia Lai	18.460,0
	Protection forest management board of Chu A	Gia Lai	16.971,8
	Protection forest management board of Chu Mo	Gia Lai	22.741,7
	Protection forest management board of Chu Se	Gia Lai	6.896,9
	Protection forest management board of Ha Ra	Gia Lai	13.815,8
	Protection forest management board of Ia Grai	Gia Lai	9.006,7
	Protection forest management board of Ia Ly	Gia Lai	15.724,5
	Protection forest management board of Ia Meur	Gia Lai	9.978,4
	Protection forest management board of Ia Púch	Gia Lai	13.694,5
	Protection forest management board of Ia Rsai	Gia Lai	17.422,0
	Protection forest management board of Ia Tul	Gia Lai	24.294,5
	Protection forest management board of Mang	Gia Lai	6.651,6
	Protection forest management board of Nam Phu	Gia Lai	11.013,6
	Protection forest management board of Nam	Gia Lai	22.647,4
	Protection forest management board of Xa Nam	Gia Lai	7.116,3
	Protection forest management board of Ya Hoi	Gia Lai	11.783,3
	Protection forest management board of Lam Vien	Lam Dong	10.741,5
	Protection forest management board of Đai Ninh	Lam Dong	7.704,1
	Protection forest management board of Nam Ban	Lam Dong	9.848,8
	Protection forest management board of D'Ran	Lam Dong	13.572,7
	Protection forest management board of Đam B'ri	Lam Dong	2.575,3
	Protection forest management board of Hoa Bac-	Lam Dong	5.316,5
	Protection forest management board of Nam	Lam Dong	9.956,6
	Protection forest management board of Phi Liêng	Lam Dong	5.804,8
	Protection forest management board of Se Re	Lam Dong	21.330,6
	Protection forest management board of Ta Nang	Lam Dong	7.067,7
	Protection forest management board of Ta Nung	Lam Dong	6.122,3
	Protection forest management board of Tan	Lam Dong	3.639,7
	Protection forest management board of Da Nhim	Lam Dong	22.736,8
	Protection forest management board of Dat Mui	Ca Mau	10.971,7
	Protection forest management board of Dam Doi	Ca Mau	8.564,7
	Protection forest management board of Tam	Ca Mau	4.877,6
	Protection forest management board of Kien	Ca Mau	9.363,2
	Protection forest management board of Nhung	Ca Mau	12.661,8
	Protection forest management board of Nam Can	Ca Mau	5.625,8
	Protection forest management board of Sao Luoi	Ca Mau	4.125,1

Source: Ministry of Agriculture and Rural Development, National Forestry Planning Report 2021-2030, vision to 2050.

2.2. The list of potential protected zones of aquatic resource is OECMs

Note: In fact, only aquatic resource protection zones have been established in Thua Thien Hue province.

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
1.	Dien Hải Area	Thua Thien Hue	Range of lines connecting points: V18a (16º 38' 46" N, 107º 28' 16" E) V18b (16º 38' 38" N, 107º 28' 12" E) V18c (16º 38' 28" N, 107º 28' 31" E) V18d (16º 38' 35" N, 107º 28' 36" E)	514	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
2.	Vung Mệ Area	Thua Thien Hue	Range of lines connecting points: V19a (16º 37' 22" N, 107º 28 '05" E) V19b (16º 37' 27" N, 107º 28' 09" E) V19c (16º 37' 16" N, 107º 28' 41" E) V19d (16º 37' 07" N, 107º 28' 36" E)	589	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
3.	Con May Bay Area	Thua Thien Hue	Range of lines connecting points: V20a (16º 37' 34" N, 107º 30' 04" E) V20b (16º 37' 26" N, 107º 29' 55" E) V20c (16º 37' 31" N, 107º 29' 45" E) V20d (16º 37' 48" N, 107º 29' 51" E) V20e (16º 37' 44" N, 107º 29' 58" E) V20f (16º 37' 39" N, 107º 29' 55" E)	299	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
4.	Doi Tro Ken Area	Thua Thien Hue	Range of lines connecting points: V21a (16º 36' 25" N, 107º 30' 51" E) V21b (16º 36' 47" N, 107º 30' 02" E) V21c (16º 36' 42" N, 107º 31' 15" E)	157	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V21d (16º 36' 35" N, 107º 31' 17" E)			
5.	An Xian Area	Thua Thien Hue	Range of lines connecting points: V22a (16º 34' 58" N, 107º 33' 18" E) V22b (16º 35' 10" N, 107º 33' 30" E) V22c (16º 35' 05" N, 107º 33' 43" E) V22d (16º 34' 59" N, 107º 33' 41" E) V22e (16º 35' 00" N, 107º 33' 37" E) V22f (16º 35' 00" N, 107º 33' 25" E)	78	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
6.	Con Say Area	Thua Thien Hue	Range of lines connecting points: V23a (16º 34' 44" N, 107º 35' 24" E) V23b (16º 34' 45" N, 107º 35' 30" E)	368	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V23c (16º 34' 22" N, 107º 35' 39" E) V23d (16º 34' 16" N, 107º 35' 27" E) V23d (16º 34' 16" N, 107º 35' 27" E)		bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	
7.	Con Chim Area	Thua Thien Hue	Range of lines connecting points: V24a (16º 24' 24" N, 107º 47' 33" E) V24b (16º 24' 27" N, 107º 47' 41" E) V24c (16º 24' 21" N, 107º 47' 54" E) V24d (16º 24' 11" N, 107º 48' 01" E) V24e (16º 24' 05" N, 107º 48' 00" E) V24f (16º 24' 04" N, 107º 47' 53" E)	256	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
8.	Doi Choi Area	Thua Thien Hue	Range of lines connecting points:	663	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối	Criteria 2: Economic,

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V25a (16º 30' 30" N, 107º 43' 01" E) V25b (16º 30' 23" N, 107º 42' 55" E) V25c (16º 30' 18" N, 107º 42' 46" E) V25d (16º 30' 32" N, 107º 42' 40" E) V25e (16º 30' 47" N, 107º 42' 51" E)		(Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	indigenous aquatic species
9.	Doi Mai Bong Area	Thua Thien Hue	Range of lines connecting points: V26a (16º 28' 39" N, 107º 44' 17" E) V26b (16º 28' 45" N, 107º 44' 30" E) V26c (16º 28' 17" N, 107º 44' 33" E) V26d (16º 28' 13" N, 107º 44' 25" E)	323	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
10.	Vung Bun Area	Thua Thien Hue	Range of lines connecting points:	235	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối	Criteria 2: Economic,

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V27a (16º 27' 06" N, 107º 45' 18" E) V27b (16º 27' 08" N, 107º 45' 22" E) V27c (16º 26' 45" N, 107º 45' 34" E) V27d (16º 26' 43" N, 107º 45' 29" E)		(Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	indigenous aquatic species
11.	Vung Đien Area	Thua Thien Hue	Range of lines connecting points: V28a (16º 29' 58" N, 107º 41' 47" E) V28b (16º 30' 03" N, 107º 41' 54" E) V28c (16º 29' 47" N, 107º 42' 08" E) V28d (16º 29' 37" N, 107º 42' 01" E)	649	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
12.	Con Gia - Vinh Ha Area	Thua Thien Hue	Range of lines connecting points: V29a (16º 20'10" N, 107º 49' 55" E)	293	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V29b (16º 21'36" N, 107º 49' 11" E) V29c (16º 22' 27" N, 107º 49' 44" E) V29d (16º 22' 23" N, 107º 49' 34" E)		căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	
13.	Đam Ha Trung Area	Thua Thien Hue	Range of lines connecting points: V30a (16º 21' 46" N, 107º 48' 43" E) V30b (16º 21' 44" N, 107º 48' 37" E) V30c (16º 21' 58" N, 107º 48' 22" E) V30d (16º 22' 05" N, 107º 48' 28" E)	373	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
14.	Đap Tay - Chua Ma Area	Thua Thien Hue	Range of lines connecting points: V31a (16º 20' 39" N, 107º 52' 39" E) V31b (16º 20' 33" N, 107º 52' 35" E)	1.002	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V31c (16º 20' 46" N, 107º 52' 07" E) V31d (16º 21' 04" N, 107º 51' 46" E) V31e (16º 20' 09" N, 107º 51' 50" E) V31f (16º 20' 51" N, 107º 52' 11" E)		bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	
15.	Hon Nui Quen Area	Thua Thien Hue	Range of lines connecting points: V32a (16º 18' 00" N, 107º 54' 58" E) V32b (16º 18' 02" N, 107º 54' 51" E) V32c (16º 18' 24" N, 107º 54' 31" E) V32d (16º 18' 20" N, 107º 54' 36" E)	987	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
16.	Dap Lang - Ganh Lang Area	Thua Thien Hue	Range of lines connecting points: V33a (16º 19' 57" N, 107º 55' 15" E)	367	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V33b (16º 19' 56" N, 107º 55' 10" E) V33c (16º 19' 25" N, 107º 55' 14" E) V33d (16º 19' 22" N, 107º 55' 18" E) V33e (16º 19' 58" N, 107º 55' 16" E) V33f (16º 19' 57" N, 107º 55' 11" E) V33g (16º 19' 22" N, 107º 55' 13" E) V33h (16º 19' 22" N, 107º 55' 20" E)		căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	
17.	Ha Na Area	Thua Thien Hue	Range of lines connecting points: V34a (16º 20' 39" N, 107º 52' 39" E) V34b (16º 20' 34" N, 107º 52' 37" E) V34c (16º 20' 28" N, 107º 53' 15" E) V34d (16º 20' 37" N, 107º 53' 10" E)	1.154	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
18.	Đa Mieu Area	Thua Thien Hue	Range of lines connecting points: V35a (16º 18' 08" N, 107º 48' 21" E) V35b (16º 18' 17" N, 107º 48' 33" E) V35c (16º 18' 07" N, 107º 48' 51" E) V35d (16º 18' 57" N, 107º 48' 41" E)	566	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
19.	Đa Dam Area	Thua Thien Hue	Range of lines connecting points: V36a (16º 17' 28" N, 107º 49' 04" E) V36b (16º 17' 43" N, 107º 49' 05" E) V36c (16º 17' 42" N, 107º 49' 27" E) V36d (16º 17' 28" N, 107º 49' 26" E)	714	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
20.	Dinh Doi - Cua Can Area	Thua Thien Hue	Range of lines connecting points:	340	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối	Criteria 2: Economic,

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V37a (16º 21' 30" N, 107º 50' 45" E) V37b (16º 21' 29" N, 107º 50' 43" E) V37c (16º 21' 09" N, 107º 50' 49" E) V37d (16º 21' 09" N, 107º 50' 57" E) V37e (16º 21' 11" N, 107º 51' 00" E)		(Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	indigenous aquatic species
21.	Hon Voi - Vung Deo	Thua Thien Hue	Range of lines connecting points: V38a (16º 17' 04" N, 107º 54' 01" E) V38b (16º 17' 10" N, 107º 53' 59" E) V38c (16º 17' 25" N, 107º 54' 12" E) V38d (16º 17' 15" N, 107º 54' 26" E)	557	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối (Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	Criteria 2: Economic, indigenous aquatic species
22.	Nam Hon Deo	Thua Thien Hue	Range of lines connecting points:	1.156	Tôm sú (Penaeus monodon), tôm he (Penaeus merguiensis), tôm rảo (Metapenaeus ensis), cua xanh (Scylla serrata), cá dìa (Siganus spp.), cá nâu (Scatophagus argus), cá đối	Criteria 2: Economic,

No.	Name of area	Province	Scope, boundaries and coordinates	Area (ha)	Protected object	Meet the criteria
			V39a (16º 16' 59" N, 107º 51' 37" E) V39b (16º 17' 12" N, 107º 51' 45" E) V39c (16º 17' 01" N, 107º 51' 59" E) V39d (16º 16' 47" N, 107º 51' 48" E)		(Mugil cephalus), cá mòi cờ chấm (Clupanodon punctatus), cá căng (Terapon theraps), cá dù bạc (Argyrosomus spp.), cá bống thệ (Oxyurichthys tentacularis)	indigenous aquatic species

2.3. The list of potential biodiversity corridors s is OECM

No.	Name of BC	Location	Area (ha)	Provision	Longitude	Latitude
1	Biodiversity Corridor of Sao La - Song Thanh	Quang Nam	75.164,30	inland	761.192	1.742.930
2	Biodiversity Corridor of Bac Huong Hoa – Dakrong	Quang Tri	122.857,00	inland	686.038	1.848.330
3	Biodiversity Corridor of Sao La - Phong Dien	Thua Thien Hue	77.190,60	inland	754.610	1.794.420
4	Biodiversity Corridor of Can Gio - Ba Lai - Long Khanh - Cu Lao Dung - Ca Mau cape	Tien Giang, Ben Tre, Bac Lieu, Ca Mau	182.758,00	inland	613.147	1.037.240
5	Biodiversity Corridor of Xuan Thuy - Tien Hai - Thai Thuy	Thai Binh, Hai phong, Quang Ninh	33.934,20	inland	638.741	2.231.650
6	Biodiversity Corridor of Nam Xuan Lac - Na Hang	Tuyên Quang	1.214,38	inland	549.487	2.471.350
7	Biodiversity Corridor of Pu Mát - Vu Quang	Nghe An -Ha Tinh	50.914,60	inland	518.174	2.055.660
8	Biodiversity Corridor of Na Hang - Ba Be	Tuyen Quang	1.598,76	inland	554.891	2.479.320
9	Biodiversity Corridor of Tam Giang largoon - Dam Cau Hai - Bac Hai Van	Thua Thien Hue	186.024,00	marine	804.559	1.818.410
10	Biodiversity Corridor of Cu lao Cham – Cua Dai	Quang Nam	52.631,70	marine	866.388	1.761.370
11	Biodiversity Corridor of Nha Trang bay –Nha Phu dress	Khanh Hoa	68.407,40	marine	965.405	1.361.810
12	Biodiversity Corridor of Con Đao - Phu Quy	Vung Tau	689.062,00	marine	802.276	1.054.640

13	Biodiversity Corridor of VuQuang - Giang Man	Ha Tinh	12.484,60	inland	558.913	2.005.560

2.4. The list of potential important wetlands is OECMs

No.	Nam of important wetland	Province	Type	Area (ha)	Longitude	Latitude
1	The important wetland of Mong Cai - Dam Ha at the seaside	Quang Ninh	Marine, seaside	70.232,80	791.989	2.368.180
2	The important wetland of Hoa Binh lake	Haa Binh	inland	64.099,30	515.803	2.299.860
3	The important wetland of River door of Dong Nai, Sai Gon	Ba Ria-Vung Tau	Marine, seaside	60.279,00	709.041	1.163.980
4	The important wetland of Thac Ba lake	Yen Bai	inland	46.762,60	487.641	2.424.910
5	The important wetland of Đong Nai North	Đong Nai	inland	31.835,80	735.438	1.236.360
6	The important wetland of Dau Tieng lake	Tay Ninh	inland	24.160,80	643.126	1.264.240
7	The important wetland of Cua Dai (Thu Bon river)	Quang Nam	Marine, seaside	14.014,40	859.412	1.757.350
8	The important wetland of Truong Giang	Quang Nam	Marine, seaside	12.518,60	891.565	1.716.010
9	The important wetland of Thac Mo lake	Binh Phuoc	inland	11.472,10	728.304	1.308.550
10	The important wetland of Đong Nai 3 lake	Đak Nong	inland	6.254,50	818.250	1.308.620
11	The important wetland of Pleikrong	Kom Tum	inland	3.352,66	810.133	1.600.520

2.5. The list of buffer zones of established coastal and marine protected areas is OECMs

No.	Name of buffer zone of PA	Type	Location	Area (ha)	Type
1.	Bái Tử Long	National Parks	Quang Ninh	15,283.00	Marine, seaside
2.	Cát Bà	National Parks	Hai Phòng	15,331.60	Marine, seaside
3.	Xuân Thủy	National Parks	Nam Dinh	7,100.00	Marine, seaside
4.	Bạch Long Vĩ	nature reserve	Hai Phong	27,008.93	Marine, seaside
5.	Thái Thụy	nature reserve	Thai Binh	6,560.00	Marine, seaside
6.	Tiền Hải	nature reserve	Thai Binh	1,320.00	Marine, seaside
7.	Cồn Cỏ	nature reserve	Quang Tri	4,532.00	Marine, seaside
8.	Núi Chúa	National Parks	Ninh Thuan	31,241.33	Marine, seaside
9.	Lý Sơn	nature reserve	Quang Ngai	7,925.00	Marine, seaside
10.	Vịnh Nha Trang (Hòn Mun)	nature reserve	Khanh Hoa	15,000.00	Marine, seaside
11.	Hòn Cau	species and habitat conservation	Binh Thuan	12,500.00	Marine, seaside
12.	Cù Lao Chàm	landscape protect	Quang Nam	23,500.00	Marine, seaside
13.	Côn Đảo	National Parks	Ba Ria - Vung Tau	19,883.15	Marine, seaside

14.	Mũi Cà Mau	National Parks	Ca Mau	37,380.00	Marine, seaside
15.	Phú Quốc	National Parks	Kien Giang	70,044.90	Marine, seaside
16.	Rừng cụm đảo Hòn Khoai	landscape protect	Ca Mau	621.00	Marine, seaside

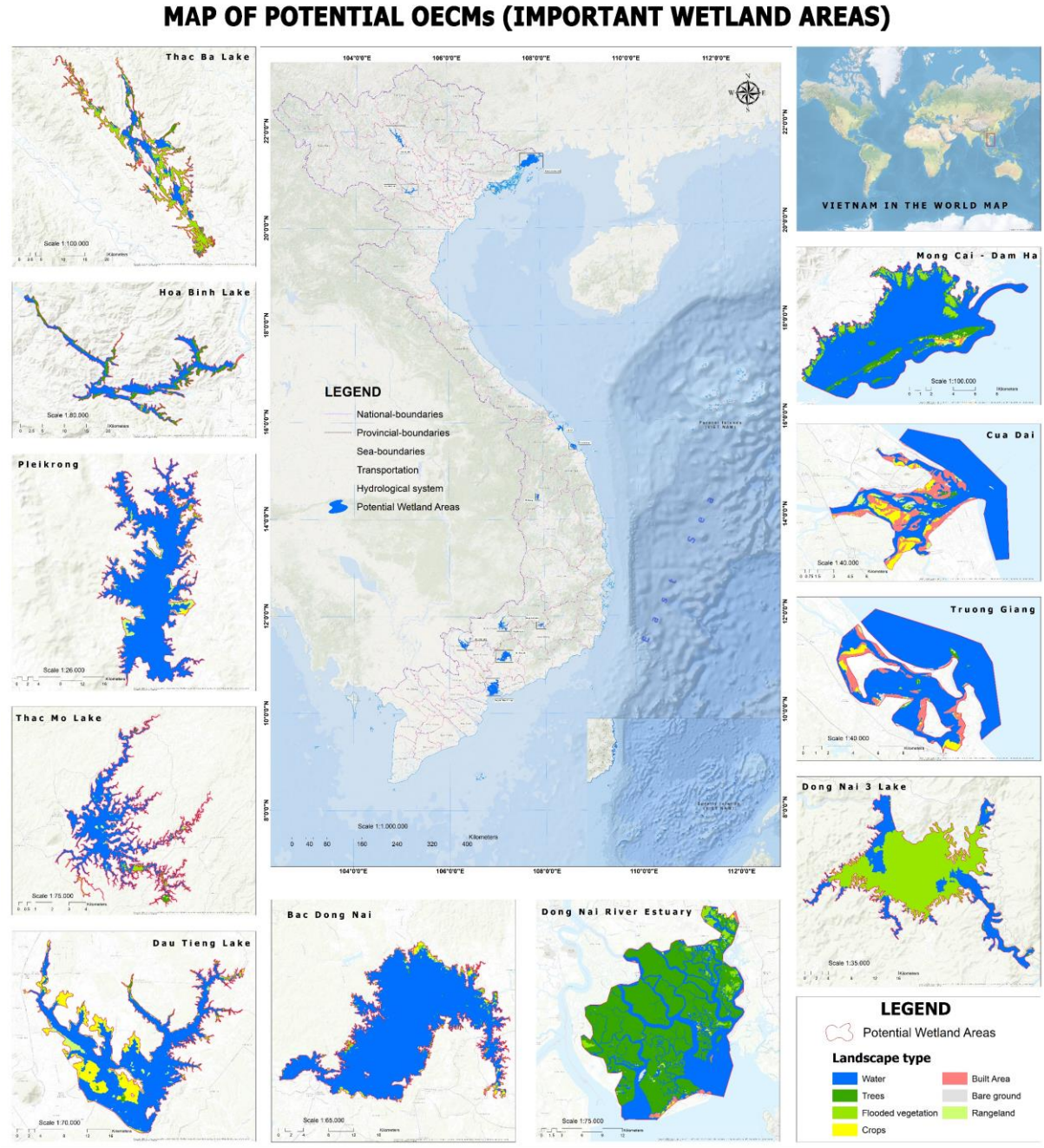
2.6. The list of biodiversity conservation facilities that have been established is OECMs

No.	Name of biodiversity conservation facility	Certificate
1	Vinpearl land Wildlife Rescue and Conservation Center	Decision No. 1522/2016/GCN-UBND dated June 1, 2016 of Khanh Hoa Provincial People's Committee
2	FLC Zoo Safari Park Quy Nhon	Decision No. 229/QD-UBND dated January 24, 2017 of Binh Dinh Provincial People's Committee
3	Mango Garden Eco-Resort	Decision No. 1866/QD-UBND-GCN dated 7/6/2017 of Dong Nai Provincial People's Committee
4	My Quynh Zoo	Decision No. 2131/QD-UBND-GCN dated 12/6/2017 of Long An Provincial People's Committee
5	Safari Phu Quoc	Decision No. 1511/QD-UBND-GCN dated 13/7/2017 of Kien Giang People's Committee
6	Vinpearlland Aquarium Phu Quoc	Decision No. 622/QD-UBND-GCN dated 20/3/2019 of Kien Giang People's Committee
7	Dong Tam Snake Farm	Decision No. 379/QD-UBND-GCN dated November 15, 2018 of Tien Giang People's Committee

No.	Name of biodiversity conservation facility	Certificate
8	Bear sanctuary Ninh Binh	Decision No. 235/QD-UBND dated January 31, 2019 of Ninh Binh People's Committee

Appendix 3: Map of potential OECMs areas in Viet Nam

Figure 13. Map of potential OECMs (Important wetland areas)



Note: The original maps were sent to GIZ by the Expert Group on 30 November 2022. The maps in high resolution are available in the DATA_GIZ folder, the "PDF" subdirectory.

Figure 14. Map of potential OECMs (Biodiversity corridor areas)

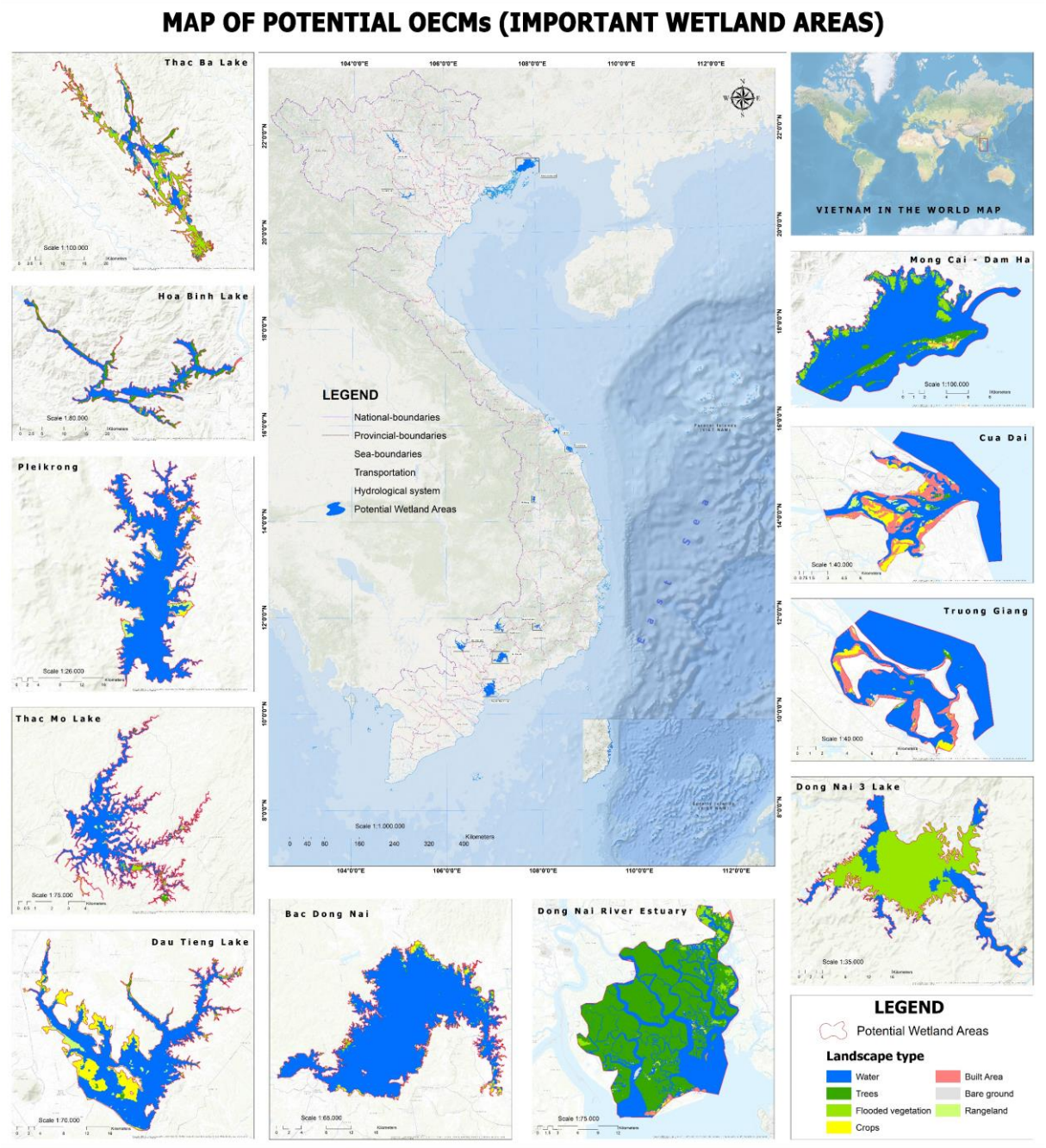


Figure 15. Map of potential OECMs (Buffer zone of marine protected areas)

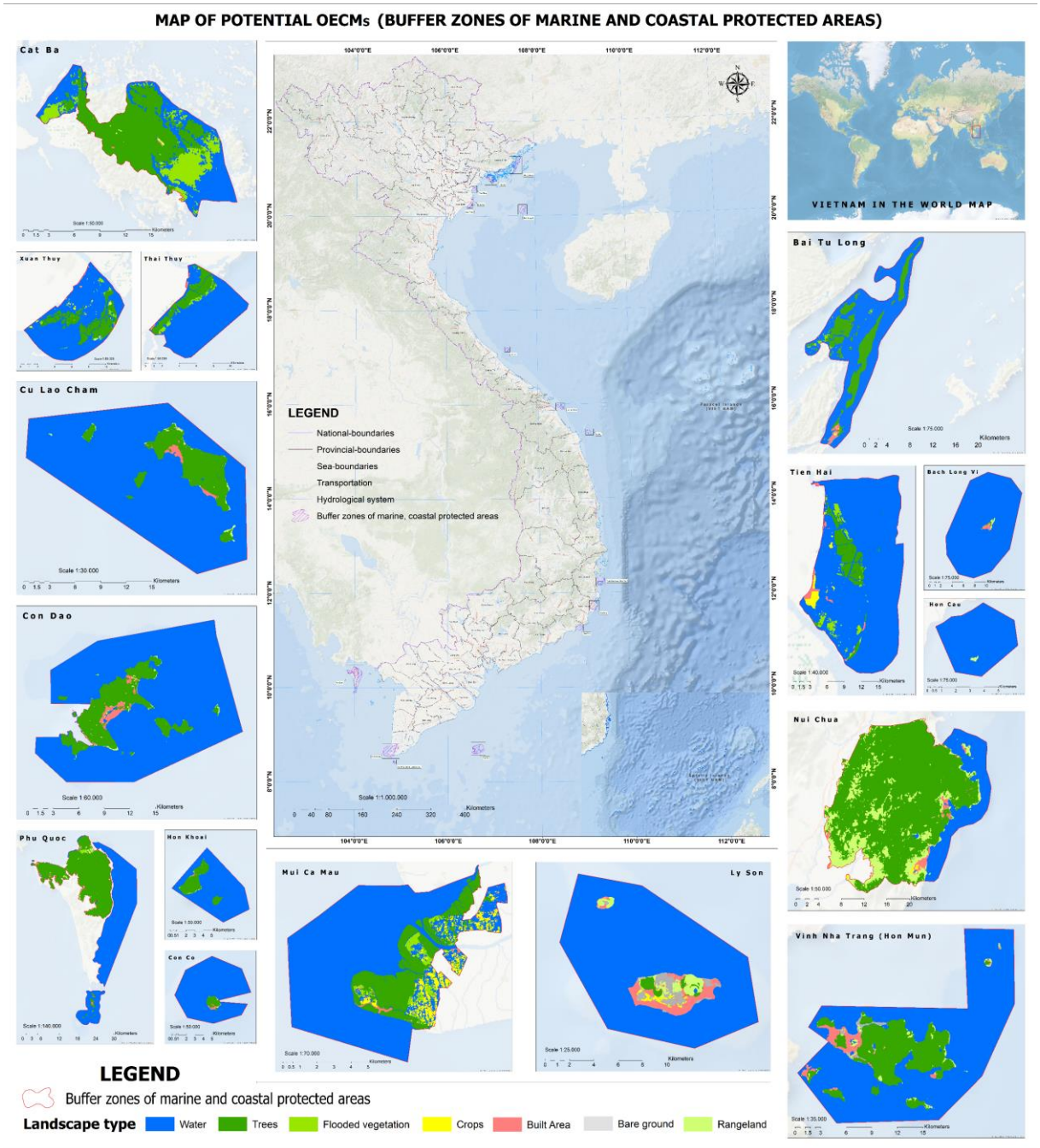


Figure 16. Location map of potential OECMs (Biodiversity conservation facility)

Note: The original maps were sent to GIZ by the Expert Group on 30 November 2022. The maps in high resolution are available in the DATA_GIZ folder, the "PDF" subdirectory.

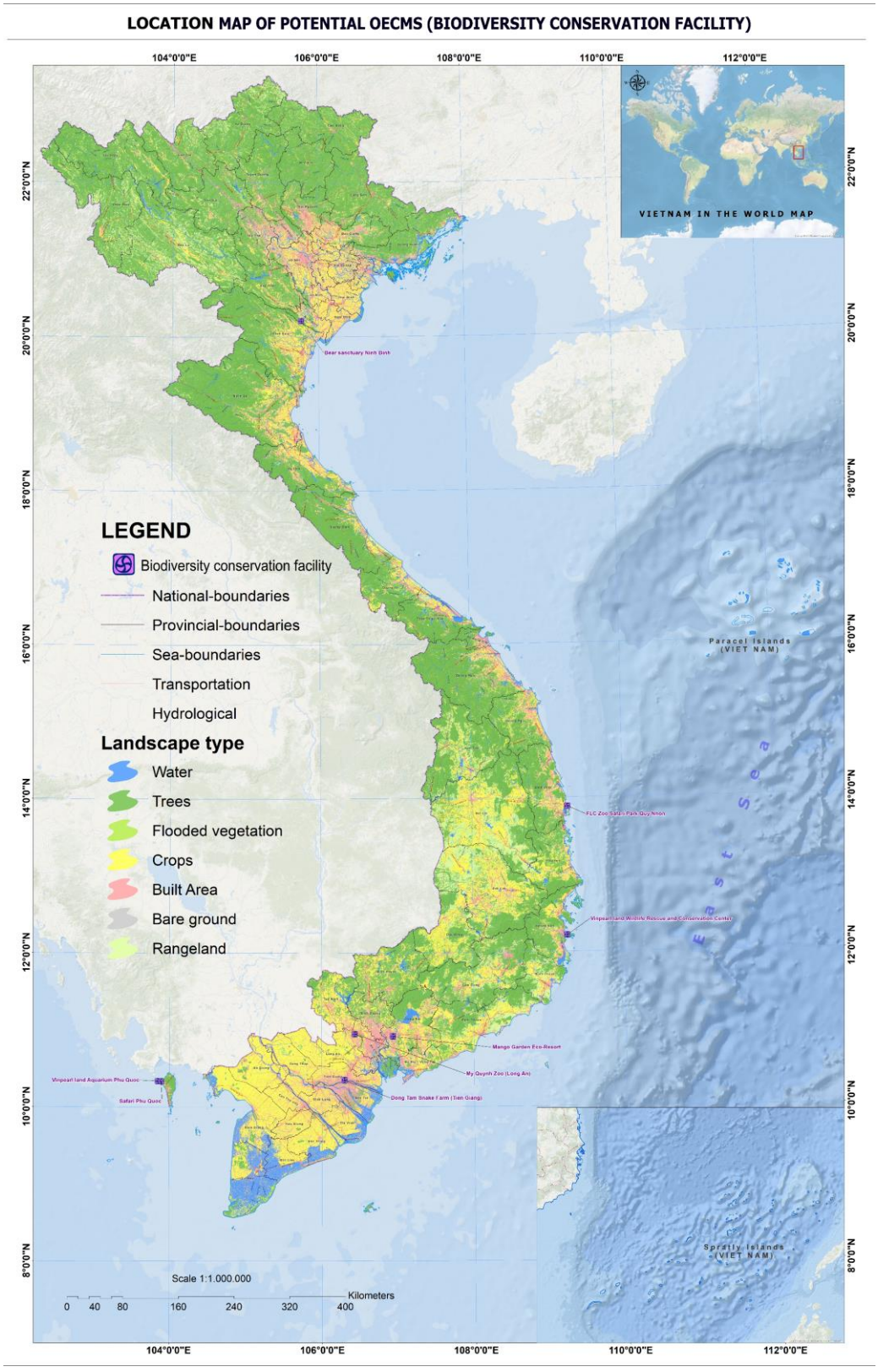


Figure 17. Location map of potential OECMs (Aquatic resource protection zone)

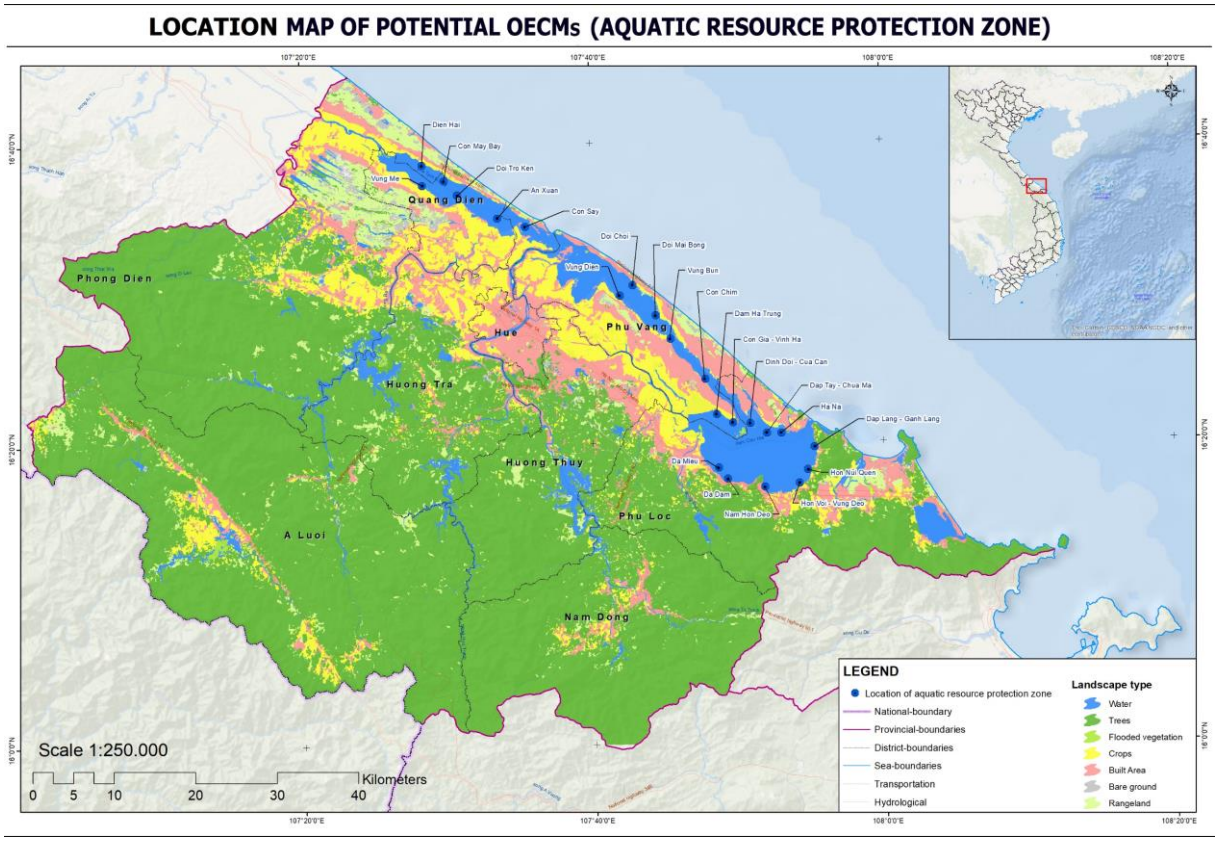
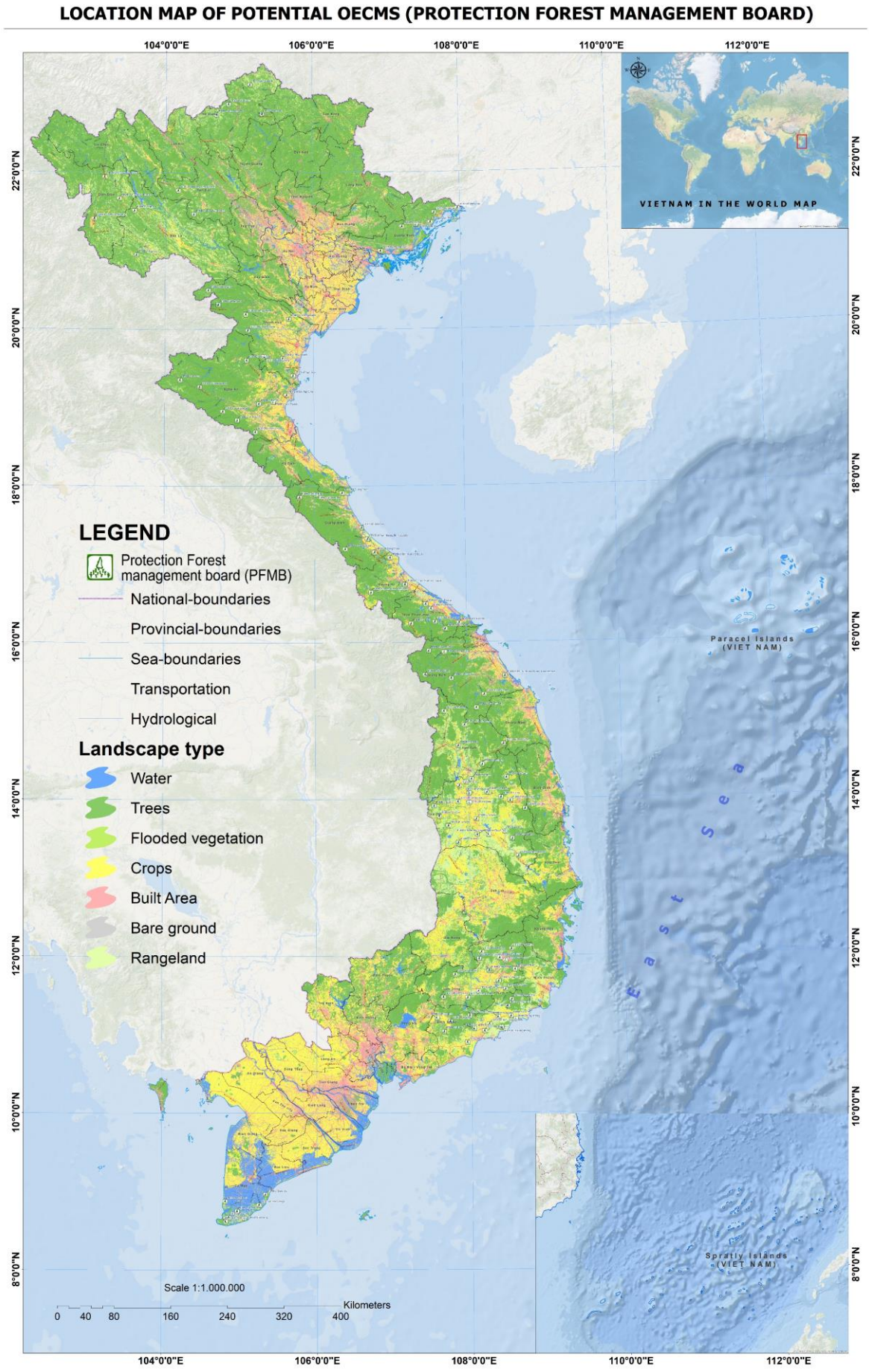


Figure 18. Location map of potential OECMs (Protection forest)



Work package "Management of complex protected areas with diverse ecosystems"

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