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Social and Natural Resources Mapping for Koh Rong Marine National Park

1. Background of Koh Rong Marine National Park

Koh Rong Archipelago, located in Preah Sihanouk Province in southwestern Cambodia, encompasses Koh Rong and Koh Rong Sanlem, the two main islands, alongside five associated small islands: Koh Kon, Koh Touch, Koh Ta Tim, Koh Manous Krav and Koh Manous Knong. The Archipelago is a significant marine biodiversity hotspot, supported by key habitats including seagrass beds, coral reefs and mangrove forests. These natural resources are crucial for supporting coastal and fishery communities.

To conserve this biodiversity hotspot, the Koh Rong Archipelago is established as a Marine Protected Area (MPA) – it was first designated as a Marine Fisheries Management Area (MFMA) in 2015 and declared Cambodia's first Marine National Park (MNP) in 2018 via sub-decree No.14. Today, the Koh Rong Marine National Park (KR-MNP) covers 52,446 hectares of land and water. The islands are inhabited by several communities, and host a well-developed and expanding tourist industry. However, KR-MNP faces some challenges, including solid waste pollution, coastal development, illegal fishing and overfishing. All of the above challenges need to be addressed through effective implementation and enforcement of an operational and well-financed management framework of the KR-MNP.

In Koh Rong Archipelago, Fauna & Flora is supporting Ministry of Environment (MoE), Fisheries Administration (FiA), local authorities (Provincial of Sihanouk Vile, Municipality of Koh Rong, Fishery Administration Cantonments, and Provincial Department of Environment), local communities and other stakeholders to enhance the management of KR-MNP. Fauna & Flora works with local communities to implement community-led conservation measures, empower communities with governance capacities, and develop diversified sustainable livelihood initiatives. A central part of Fauna & Flora's work in KR-MNP is to map, study & monitor key biodiverse habitats such as coral reefs, seagrass meadows and mangroves across the coastline. Fauna & Flora also work to raise awareness within local communities and with tourism operators about the importance of biodiversity and natural resources to further engage them conservation actions and support ecotourism development.

Financial sustainability is critical for the effective management of an MPA, ensuring long-term impact and success. Securing sufficient and reliable income for MPA management operations remains challenging globally. Fauna & Flora is working closely with the communities and the authorities to collaboratively identify, design and build sustainable finance mechanisms that can support a long-term financial strategy for KR-MNP, this study is a foundational step in that process in terms of participatory mapping.

2. Sustainable Financing Mechanism

Financing mechanisms for MPAs are very much context-specific, as the main opportunities for funding often depend on the national policy framework, the ecological and socio-economic assets of the MPA, MPA governance structures, and the availability and engagement of possible private sector partners.

The global COVID-19 pandemic highlighted the fragility of the tourism sector, particularly in Cambodia where international tourist numbers dropped by 99% in 2021. However, domestic tourist numbers did increase significantly, transforming the tourist demographic and thus the market and local economy. With a renewed focus on stimulating new high-quality economic opportunities for local communities, protecting and restoring the natural environment, and revitalizing cultural heritage and communities, tourism has the potential to be a key pillar in the transition to a sustainable ocean economy. However, as highlighted by the global pandemic, tourism cannot be the only source of income to sustainably finance MPAs. There is a clear need for diversification of revenue streams in a manner that is locally appropriate and combines both public and private sources of finance.

There is significant interest in applying innovative sustainable finance mechanisms to support the operation of protected areas in Cambodia. It is crucial that such mechanisms need to be tailored according to the local context. In the case of KR-MNP, efforts are underway to strengthen governance frameworks, such as establishing decision-making committees, clarifying roles and responsibilities, and finalizing a comprehensive zonation and management plan. These foundational steps will enhance the MPA's capacity to access and effectively manage sustainable financing, ensuring long-term conservation success.

The social and natural resource mapping process ensured the participation and engagement of communities and government authorities in the initial exploration of sustainable finance options for KR-MNP. This collaborative approach has identified opportunities to enhance the existing revenue generation streams, such as entry fees for the MNP, voluntary donations, mooring fees, ecotourism, payments for ecosystem services (PES) and other visitor services, while fostering inclusive decision-making. The Royal Government of Cambodia is making headway towards advancing governance framework to improve funding allocation for protected areas at national level. Fauna & Flora will continue supporting the relevant government authorities and local communities in KR-MNP to facilitate their continued involvement in the design and implementation of future sustainable finance mechanisms for the national park, ensuring long-term benefits for both people and nature.

3. Social and Natural Resource Mapping

Prior to identifying sustainable financing options, a critical step is to understand the real and local economy of any given protected area. In the context of MPAs, both the terrestrial and marine socio-ecological factors should be considered and integrated in the process. Using the participatory social and natural resources mapping process as a tool, Fauna & Flora and our

project partners (line departments of Provincial in Sihanouk Vile, Municipal of Koh Rong, commune, FIACs, and PDOEs) were able to bring together diverse actors, including non-traditional actors (i.e. non-fisher sector), to depict natural habitats and the physical and geographical layout of the community (i.e., territorial boundaries such as rivers and roads), settlements, infrastructure (e.g., sanitation and hygiene, water, electricity, waste management, etc.), and key services (e.g., healthcare, education, government offices, community centers etc.). Data and information were collected for every household as well as the wider community. In parallel, the social mapping process also incorporated social, cultural and historical knowledge in the results, ensuring a holistic understanding of the area's resources and needs.

The following information were depicted during the social and natural resource mapping:

- Geographic area and resource use
- Forest, vegetation, tree species
- Key marine biodiversity habitats areas including seagrass, coral, mangroves
- Land and land use, habitation, conservation areas, fisheries areas, refuge areas, community fishery
- Water, water bodies, irrigation resources, rivers and drainage
- Agricultural areas, cropping patterns, productivity, and development areas.

3.1 Steps and Process of Social and Natural Resource Mapping

The steps and processes for developing the social and natural resource maps are as follows:

Step 1: Pre-consultation meeting with community and local authorities, design data collection methodology

Step 2: Training of Trainers (TOT) workshop with local community and authorities for data collection

Step 3: Data collection from each household/land plot identified

Step 4: Digitization of sketched maps and production of draft map

Step 5: Public display to verify data and draft map with local community and authorities

Step 6: Consultation of key stakeholders for data and mapping verification

Step 7: Obtaining government endorsement for social and natural resource maps and documentation, followed by publication.

3.2 Result of Social and Natural Resource Maps

Koh Rong City is a city located in the Mittapheap district of Sihanouk Ville Province that has two communes, four villages, and one unofficial village of Village PrekSvay (called Village Soksan) under its jurisdiction. The total population is 1,220 families. These families are made up of 3,878 people, of which 1,883 are female, and 2,350 are youth under 18.

The KR-MNP consists of 52,498 hectares including land area (5,361 ha) and marine areas (47,137 ha) located in Preas SihanoukVile and Koh Kong Province which have potential for sustainable development and ecological restoration in the near future.

3.3 Summary results of the social mapping

Table 1: Summary of household/land information

Village name	Dem Tkov	Koh Toch	KohRong Sanlem	Prek Svay
Total Use of Household/Land	238	155	165	146
Residence	155	69	95	109
Vendor/Merchant	35	26	22	25
Bungalow	12	18	15	6
Guesthouse	0	22	25	5
Restaurant	3	13	4	0
Small bar	0	4	4	0
Resort	13	3	0	1
Local Market	1	0	0	0
Vacant Houses	8	0	0	0
Total Status Using of Property	227	155	165	146
Owner	215	113	146	127
Tenant	12	42	19	19
Total Houses Access to Water	227	155	165	146
Well	227	0	0	104
Private Connection	0	155	165	42
Water from Waterfall	0	155	0	0
Total Houses Access to Electricity	227	155	165	146
State Electricity Connection	227	155	165	146

Table 2: Other information on Tourism Services in Koh Rong City in 2022

No	Quantitative	Number	Number of rooms/chairs

1	Resort	01	
2	Hotel	03	107
3	Bungalow	39	615
4	Guesthouse	16	179
5	Restaurant	28	279
6	Leisure activities for adults	00	
7	Diving company	01	
8	Mart	15	
9	Pharmacy and health care center	05	
10	Scuba dive	03	
11	Body Massage and Spa	16	
12	Souvenir shop	01	

Source: Koh Rong City Hall

3.4 The results of the natural resources mapping

Table 3: Summary information for natural resources in Koh Rong

Type	Name	Summary
Rocky Shorelines	Pouy Preksvay, Pouy ChonhCheang, Pouy Soksan, Pouy YeayMav, Pouy Kohtoch, Pouy LorTerkTrey, Pouy Trot, Pouy Virak, Pouy Kapea Leakmouy, and Pouy Kaongkang.	10 shores
Beaches	NeSat, Preksvay, Lomhor, Thansuo, Soksan, Kohtoch, Khsaachmeas, Kohrong, Kingkok, Romdoul, Tmorkohrong, Demtkov, Prasat, TmorTrot, Kaongkang, and KaongkangPi	16
Small Islands	Koh Bong, Koh P'oun, Koh Toch, and Koh Moul	4 Islands
Forests	Deciduous, evergreen, and semi-evergreen	3 types
Community Fishery Area	Preksvay Community Fisheries (CFI) and DemTkov CFI	2 CFIs

Other areas and land use	Village/residential, ecotourism, agricultural areas, temple, and waterfall	
Boundary	Village and Koh Rong Marine National Park	

Table 4: Summary information for natural resources at Koh Rong Sanlem

Type	Name	Summary
Rocky shorelines	Pouy Virakleak, Pouy Sachsor, Pouy MaPeyby, Pouy Pleng Sannha, Pouy Rongsanlem, and Pouy Tmordos.	6
Beaches	Sach Sor, Ma Peybay, Tgnai Lech, Pleng Sam Nha, Trey Ker, Lum Her, Rong Sanlem, and Tmor Dos	8
Small Islands	Koh Kon	1 Island
Forests	Dense forest, semi-dense forest, and shrubland forest	3 types
Community Fishery Area	Koh Rong Sanlem Community Fishery	1 CFI
Other areas and land use	Village/residential, ecotourism, and agricultural	
Boundary	Village and Koh Rong Marine National Park	

Table 5: Koh Rong land use (2023)

Land Use Types	Area (ha)
Agricultural land	2168.62
Beach	51.44
Coral reef	278.23
Deciduous forest	709.08
Ecotourism area	313.66
Evergreen forest	3734.34
Mangrove forest	203.58

Rocky beach	75.75
Seagrass	57
Semi-evergreen forest	157.9
Urban area	405.21

Koh Rong Sanlem land use (2023)

Land use type	Area (ha)
Agricultural land	300.71
Beach	29.41
Coral reef	288.66
Deciduous forest	366.26
Ecotourism area	268.43
Evergreen forest	1284.71
Mangrove forest	19.39
Rocky beach	47
Seagrass	0.66
Semi-evergreen forest	111.57
Urban area	78.09

4. Informing Sustainable Financing and Looking Ahead

Following the social and natural resources mapping, a series of multi-stakeholder' consultation workshops were held to disseminate results and facilitate further discussion on potential sustainable financing opportunities for KR-MNP. Participants included national and subnational authorities, local communities, Community Fisheries (CFIs), private sector actors, and NGO partners. Through these meetings, the finalized social and natural resource maps were recognized as key reference tools for future planning, and was endorsed by relevant government authorities, such as the Department of Coastal and Marine Conservation at MoE, for publication.

These maps have been shared with various relevant ministries, institutions, and sub-national authorities at the provincial and local levels, for further informing of the findings.

The social and natural resource maps have directly informed the analysis of potential options for sustainable financing in KR-MNP. During the consultation workshops, the key stakeholders identified the following three priority sustainable financing options for KR-MNP, for further research, development and pilot:

1. Entrance fee – the main sustainable financing mechanisms that is already in place at KR-MNP, managed by the Provincial Administration and could be further adapted to optimize impact.
2. Payment for Ecosystem Services (PES) – proposed by the Department of Coastal and Marine Conservation, MoE. Piloting PES would incentivize additional protection to critical habitats such as seagrass beds, mangroves, and coral reefs.
3. Voluntary Donations – engaging with private sector utilizing natural resources in KR-MNP to contribute to conservation efforts, such as diving companies, tour operators, restaurants, bungalows, guesthouses, and others operating tourism businesses within the MPA.

Moving forward, these mechanisms will undergo further study, stakeholder consultation, and feasibility assessment, to ensure practicality and alignment with existing legal frameworks, equitable benefit-sharing, willingness-to-pay, structural and institutional responsibilities, and financial and key stakeholders' capacity. By piloting these approaches, KR-MNP can establish scalable models for sustainable financing that will enhance conservation outcomes while supporting local communities and economic resilience.