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Integrated Livelihood and Sustainable Financing Pathways for Wakatobi and Togean National Parks



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ACRONYMS

2D1N	two days, one night
3D2N	three days, two nights
APBD	Anggaran Pendapatan dan Belanja Daerah
APBN	Anggaran Pendapatan dan Belanja Negara (State Fund)
ASEAN ENMAPS	Effectively Managing Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region
BE	blue economy
BMP	Better Management Practices
BUMDes	badan usaha milik Desa (village-owned enterprise)
CSR	corporate social responsibility
DKP	Dinas Kelautan dan Perikanan (Department of Marine Affairs and Fisheries)
IPLC	Indigenous Peoples and local communities
JAPESDA	Jaring Advokasi Pengelolaan Sumber Daya Alam
MMAF	Ministry of Marine Affairs and Fisheries
MoFor	Ministry of Forestry
MPA	marine protected area
MSME	micro, small, and medium enterprise
NGO	non-governmental organisation
PMD	Pemberdayaan Masyarakat Desa (Village Community Empowerment)
SME	small and medium enterprises
TN	Taman Nasional (National Park)
TNKT	Taman Nasional Kepulauan Togean (Kepulauan Togean National Park)
TNW	Taman Nasional Wakatobi (Wakatobi National Park)
TPS3R	Tempat Pengolahan Sampah Reduce-Reuse-Recycle
UMKM	usaha mikro, kecil, dan menengah (micro, small, and medium enterprises)
UPI	unit pengolahan ikan (fish processing unit)
WCS	Wildlife Conservation Society
WWF	World Wide Fund for Nature
YKAN	Yayasan Konservasi Alam Nusantara

EXECUTIVE SUMMARY

This report presents an integrated analysis of sustainable livelihood and financing pathways for two marine national parks in Indonesia—**Wakatobi National Park (Taman Nasional Wakatobi or TNW)** and **Togean Islands National Park (Taman Nasional Kepulauan Togean or TNKT)** developed under the project *Effectively Managing Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region* (ASEAN ENMAPS). The study builds on previous outputs on policy and governance (Output 1) and stakeholder mapping and readiness (Output 2), and translates these findings into practical, site-specific implementation pathways.

Purpose and Approach

This report primarily identified feasible and scalable livelihood models that support marine conservation objectives while improving socio-economic outcomes for coastal communities. Rather than proposing new institutional structures, the analysis focused on strengthening existing systems by: aligning livelihood activities with conservation objectives; improving coordination among key stakeholders; and enhancing access to markets and financing mechanisms.

The assessment applied a governance-oriented framework, recognising that the success of livelihood and financing initiatives depends on institutional coordination, community readiness, and market conditions.

Key Findings

1. Active but fragmented livelihood systems- Across both TNW and TNKT, communities rely on fisheries, tourism, and small enterprises that provide complementary income, but initiatives remain small-scale, unevenly coordinated, and weakly linked to markets. Moreover, value capture at the community level is low. communities are highly dependent on fisheries, with tourism and small-scale enterprises providing complementary income. However:

2. Different readiness levels require differentiated approaches- **TNW** demonstrates relatively higher readiness, with existing tourism systems, organised groups, and emerging value chains, while **TNKT** remains more fisheries-dependent, with weaker institutional capacity and market access, requiring gradual strengthening.

3. Financing constraints are operational, not structural—Funding sources (*Anggaran Pendapatan dan Belanja Negara* [APBN], *Anggaran Pendapatan dan Belanja Negara* [APBD], *Dana Desa/Village Budget*) already exist, but access, coordination, and alignment of livelihood with conservation priorities remain limited.

Proposed livelihood schemes —

- TNW: seaweed value chain, responsible fisheries, reef-friendly tourism and waste management
- TNKT: integrated fisheries–tourism model, sustainable reef fisheries, anchovy fattening linked to BUMDes

1. Proposed livelihood schemes

The report identified three core livelihood schemes aligned with site conditions and conservation objectives:

Wakatobi National Park

- Seaweed value chain coordination and market access
- Responsible fisheries supply chain and traceability
- Reef-friendly culinary tourism and community waste management

Togean Islands National Park

- Integrated fisheries and eco-tourism model
- Market-based sustainable reef fisheries
- Anchovy-fish fattening system linked to BUMDes

These schemes build on existing activities and focus on improving:

- product quality and value addition;
- market access and coordination; and
- alignment with conservation practices.

Feasibility and Pilot Prioritisation

Comparative feasibility assessments indicated that all proposed schemes are viable but differ in complexity and impact.

- **Quick-win and scalable:** seaweed value chain, anchovy-based system
- **High conservation impact:** responsible fisheries schemes
- **Integrated demonstration models:** tourism–waste and fisheries–tourism systems

A participatory assessment conducted with Balai TN on 15 April 2026 further validated these findings. The final selection of pilot interventions will be refined through joint decision-making with TNW and TNKT to identify **one priority pilot per site** for initial implementation.

Financing and Implementation Pathways

The report proposes **short-term operational financing pathways** tailored to each site:

TNKT (system strengthening focus)

- Improve access to existing funding (APBN, APBD, *Dana Desa*)
- Strengthen coordination between fishers, collectors, and buyers
- Use private sector market linkages as primary financing driver

TNW (system consolidation focus)

- Improve access to existing funding (APBN, APBD, *Dana Desa*)
- Strengthen coordination across tourism, fisheries, and waste actors
- Leverage tourism revenue to support environmental management

Across both sites, financing strategies emphasise:

- optimising existing funding sources rather than creating new instruments;
- strengthening market-based mechanisms; and
- using the ASEAN ENMAPS project as a facilitator to address coordination and capacity gaps.

Governance and Coordination

Effective implementation requires a **light, output-oriented coordination platform** such as a biosphere reserve coordination forum at the site level to:

- align livelihood activities with conservation zoning and objectives;
- coordinate roles across government, communities, and private sector; and
- package pilot initiatives for funding and partnerships.

Key governance considerations include:

- ensuring inclusive participation (women, youth, Indigenous Peoples and local communities [IPLCs]);

considering practical limits to resource use (e.g., carrying capacity for tourism and aquaculture), access arrangements for space-based activities, and alignment with environmental permitting requirements;

- maintaining alignment with environmental safeguards; and
- managing potential risks through phased implementation and monitoring.

This report demonstrates that improving livelihoods and conservation outcomes in marine national parks does not require new systems, but **better alignment of existing ones**. By strengthening coordination, improving market access, and sequencing financing support, TNW and TNKT can implement realistic and scalable models that benefit both communities and marine ecosystems.

1 INTRODUCTION

1.1 Background and Rationale

Marine protected areas (MPAs) play a critical role in Indonesia's efforts to conserve marine biodiversity while supporting sustainable fisheries and coastal livelihoods. In addition to their ecological functions, MPAs are increasingly expected to contribute to improved socio-economic outcomes for communities whose livelihoods depend directly on marine and coastal resources. Achieving this dual objective requires governance approaches that align conservation objectives with viable economic opportunities for local communities.

In Indonesia, marine conservation areas are managed under a multi-level governance system involving national ministries, sub-national governments, site-level authorities, and a wide range of non-state actors. National parks that have marine zones, such as Wakatobi National Park (Taman Nasional Wakatobi [TNW]) and Togean Islands National Park (Taman Nasional Kepulauan Togean [TNKT]), fall under the authority of the Ministry of Forestry (MoFor) and are managed as integrated land-sea conservation areas. These parks operate within broader seascapes that include fishing grounds, coastal settlements, tourism areas, and important ecological habitats.

While Indonesia has established an extensive policy framework recognising the importance of community participation in conservation, translating policy intent into practical livelihood outcomes remains a persistent challenge. Field findings showed that many coastal communities continue to rely heavily on capture fisheries and informal economic activities, with limited opportunities for diversification or value addition. In some locations, alternative livelihood initiatives have been introduced through government programmes or development projects; however, these initiatives often remain small-scale, fragmented across institutions, and weakly connected to long-term market opportunities or financing mechanisms.

At the same time, financing arrangements for marine national parks remain largely dependent on public budgeting mechanisms. Revenues generated through tourism and other park services are centrally managed and redistributed through national budget allocations, limiting the operational flexibility of park authorities. While this system ensures fiscal accountability, it also constrains the ability of parks to mobilise and deploy financial resources in ways that directly support conservation-compatible livelihoods and adaptive management.

Within this context, strengthening the link between conservation management, local livelihoods, and sustainable financing has become an increasingly important priority. Rather than introducing entirely new institutional structures, current policy discussions emphasise improving coordination among existing actors, strengthening livelihood readiness, and sequencing financing mechanisms that can gradually support both conservation outcomes and local economic development.

These challenges and opportunities are particularly relevant in the context of emerging efforts to strengthen MPA network management in Indonesia and the wider ASEAN region. As MPAs move toward more integrated and network-based approaches, attention is shifting from individual site performance to the broader governance conditions that shape participation, benefit-sharing, and long-term sustainability.

1.2 Purpose and Scope of the Report

This report presents an integrated analysis of sustainable livelihood pathways and financing opportunities for marine national parks in Indonesia, with a focus on two case study sites: TNW and TNKT. The report was developed under the ASEAN ENMAPS initiative, which aims to strengthen the effectiveness and sustainability of MPA networks across the region.

This report aimed to identify practical pathways that link conservation objectives with viable livelihood opportunities and sustainable financing mechanisms. In particular, the report seeks to:

- identify livelihood sectors and economic activities that are compatible with conservation objectives in marine national parks;
- assess the readiness of community groups and institutional actors to participate in livelihood scaling and financing mechanisms;
- analyse the institutional conditions that influence the feasibility of sustainable financing approaches; and
- propose pilot livelihood and financing models that can be implemented and tested under the ASEAN ENMAPS project.

Rather than proposing large-scale structural reforms, the report focuses on practical and incremental measures that build upon existing institutional arrangements. The analysis emphasises sequencing and feasibility, recognising that different sites may require different pathways depending on governance conditions, market access, and community readiness.

The recommendations presented in this report are therefore designed to support both site-level implementation and broader learning across Indonesia's marine conservation system, contributing to the development of scalable models that can inform future MPA network initiatives.

1.3 Linkages with Previous Outputs

This report builds directly upon the findings of Output 1 and Output 2 of the study and should be read as a continuation of the analytical process established in those reports:

- **Output 1** examined the policy and regulatory framework governing marine national parks in Indonesia, with particular attention to provisions related to community participation, livelihood development, and conservation financing. The analysis highlighted how existing legal instruments provide space for integrating conservation and livelihood objectives, while also identifying operational constraints related to institutional coordination and financing flexibility.
- **Output 2** focused on stakeholder mapping and institutional relationships in TNW and TNKT. It analysed the roles, interests, and influence of key actors involved in MPA governance, including national ministries, local governments, community organisations, private sector actors, and civil society organisations. The output also assessed the readiness of different stakeholder groups to participate in livelihood initiatives and potential financing mechanisms, using a staged readiness framework based on activity consistency, market engagement, financial management capacity, institutional structure, and conservation compliance. By clarifying stakeholder roles and institutional relationships, Output 2 established the governance conditions within which livelihood and financing interventions must operate.

Building on these findings, **Output 3** focuses on translating governance analysis into practical implementation pathways. The report examined how livelihood opportunities, financing mechanisms, and institutional coordination can be combined to support conservation-compatible economic activities in marine national parks. This integrated approach ensures that the livelihood and financing recommendations proposed in this report are grounded in the policy environment, institutional realities, and stakeholder capacities observed at the two case study sites.

2 METHODOLOGY AND ANALYTICAL FRAMEWORK

2.1 Analytical Approach

This report applied an integrated analytical approach combining policy review, stakeholder analysis, and site-level observations to identify practical pathways linking conservation management, community livelihoods, and sustainable financing in marine national parks.

The analysis draws on multiple sources of information. These include a review of national policies and regulatory instruments governing marine conservation and livelihood development, findings from stakeholder consultations conducted during the study, and field observations in TNW and TNKT. The study also builds directly on the analytical outputs developed in earlier stages of the assignment, particularly the policy and governance review (Output 1) and the stakeholder mapping and institutional analysis (Output 2).

Rather than examining livelihoods and financing mechanisms in isolation, the report adopts a governance-oriented perspective, recognising that the feasibility of livelihood initiatives and financing mechanisms is strongly influenced by institutional arrangements, stakeholder coordination, and the operational conditions within which national park authorities and local communities interact.

The analytical process therefore focused on identifying realistic implementation pathways that align with existing governance structures and institutional capacities at the site level.

2.2 Readiness Assessment Framework

The identification of livelihood and financing pathways in this report is informed by the stakeholder readiness assessment conducted in Output 2. The assessment was designed to evaluate the relative capacity of community groups and local economic actors to engage in livelihood development and potential sustainable financing mechanisms.

The readiness assessment applies a staged framework based on five key criteria:

- **Activity consistency**, which refers to the regularity and stability of livelihood activities;
- **Market engagement**, which refers to the presence of buyers, supply chains, or established market relationships;
- **Financial management capacity**, which includes basic bookkeeping, savings mechanisms, or access to financial services;
- **Institutional structure**, which includes the existence of formal groups, cooperatives, or organised associations; and

- **Conservation compliance**, which refers to the extent to which livelihood activities are compatible with or aligned with National Park zoning and conservation rules.

Using these criteria, livelihood groups and local economic actors were classified into the following three indicative readiness stages:

Table 1. Indicative readiness classification of livelihood groups and local economic actors

Readiness Stage	Characteristics
Stage 3 – Advanced	Organised groups with regular production, stable market relationships, and basic financial management systems
Stage 2 – Intermediate	Groups with consistent activities but variable market access and limited financial systems
Stage 1 – Basic	Informal or newly formed groups with irregular activities and weak organisational structures

This classification provides practical guidance for sequencing livelihood support and financing interventions. It does not represent a ranking of community capacity nor performance, but rather reflects the institutional and market conditions that influence the feasibility of different types of support.

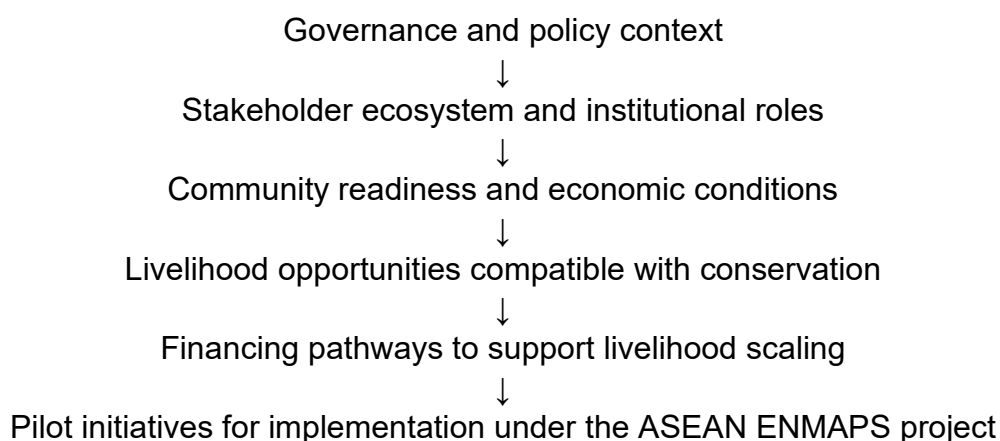
In general, Stage 1 groups require stabilisation and institutional strengthening before engaging with formal financing mechanisms. Stage 2 groups may be suitable for livelihood scaling and market upgrading, while Stage 3 groups may be capable of participating in more structured partnerships, value-chain arrangements, or conservation-linked financing initiatives.

2.3 Framework for Sustainable Livelihood and Financing Pathways

Building on the readiness assessment and governance analysis developed in Outputs 1 and 2, this report applied a structured framework to examine how conservation management, livelihood development, and financing mechanisms can be connected in practical ways.

The analytical framework recognises that livelihood and financing initiatives in marine national parks do not operate independently. Instead, they are embedded within a broader governance system that includes national policy frameworks, institutional mandates, community organisations, and market actors.

For this reason, the report examined livelihood and financing pathways through a sequential analytical process:



This structure ensures that the recommendations proposed in this report are grounded in the institutional realities observed at the two case study sites.

2.4 Limitations

As with the previous outputs of this study, the analysis presented in this report is based on a combination of document review, stakeholder consultations, and indicative field observations. The readiness classifications and livelihood assessments should therefore be interpreted as analytical guidance rather than exhaustive inventories of all livelihood activities present at the sites.

The study does not aim to replace formal registries of community groups maintained by national park authorities or local governments. Instead, it provides an indicative assessment of readiness conditions and institutional relationships that may influence the feasibility of livelihood scaling and financing initiatives.

Despite these limitations, the integrated analysis of policy frameworks, stakeholder roles, and site-level conditions provides a practical basis for identifying realistic implementation pathways that can support both conservation outcomes and community livelihoods within marine national parks.

3 GOVERNANCE AND INSTITUTIONAL CONTEXT

3.1 Institutional Landscape of Marine National Park Management

Marine national parks in Indonesia operate within a multi-level governance system involving national ministries, sub-national governments, site-level authorities, and non-state actors. Within this system, TNW and TNKT are managed under the authority of MoFor, with the *Balai Taman Nasional* responsible for day-to-day management, including zoning implementation, enforcement, monitoring, and partnership development.

At the national level, policy direction and regulatory oversight in marine sectors are shaped by multiple institutions, including the MoFor and the Ministry of Marine Affairs and Fisheries (MMAF). While the MoFor holds primary authority over national park management, fisheries governance, coastal development, and marine resource utilisation involve sectoral mandates administered by the MMAF. This institutional arrangement requires coordination across sectors to ensure that conservation objectives, fisheries management, and local economic activities are aligned.

Sub-national governments also play an important role in shaping livelihood conditions in and around marine national parks. Provincial and district governments manage development programmes related to fisheries, tourism, cooperatives, infrastructure, and community empowerment. These programmes influence local economic opportunities and can support conservation-compatible livelihood activities when effectively aligned with national park management objectives.

At the site level, communities, private sector actors, and civil society organisations interact with the park authority through a range of formal and informal arrangements. Community groups such as fisher associations, women's processing groups, cooperatives, and tourism groups are directly involved in livelihood activities and are key actors in determining compliance with conservation rules. Private sector actors, including tourism operators and fisheries value-chain intermediaries, influence local economic dynamics through market relationships, employment opportunities, and supply chain arrangements.

3.2 Stakeholder Ecosystem

The stakeholder mapping conducted in Output 2 highlights the diversity of actors involved in marine national park governance and livelihood systems. These actors can be broadly grouped into five categories: government institutions; non-state actors; resource groups and community organisations; private sector actors; development partners and supporting institutions.

Government actors include national ministries, provincial governments, and district-level agencies responsible for fisheries, tourism, cooperatives and micro, small, and medium enterprise (MSME) development, and planning. District agencies in particular play a significant role in supporting community-based economic activities through training programmes and livelihood development initiatives.

Community actors include fisher groups, women's processing groups, cooperatives, tourism groups (*Pokdarwis*), and customary institutions. These actors often demonstrate strong interest in livelihood development but vary in their organisational capacity, market engagement, and ability to participate in formal governance processes. Their participation in conservation initiatives and compliance with zoning regulations significantly influence the effectiveness of marine national park management.

Private sector actors include tourism operators, dive resorts, fisheries traders, processors, and exporters. These actors typically engage with conservation areas primarily through economic relationships rather than governance mechanisms. Tourism businesses depend directly on ecosystem quality, while fisheries value-chain actors influence income stability through pricing, aggregation, and access to markets.

Civil society organisations and development partners also play an important facilitation role. Non-governmental organisations (NGOs) and conservation organisations frequently support community capacity building, pilot livelihood initiatives, and technical assistance programmes. These actors often serve as intermediaries between communities, government agencies, and external funding sources.

3.3 Governance Implications for Livelihood and Financing Pathways

The governance conditions observed in TNW and TNKT highlight several factors that influence the feasibility of livelihood development and sustainable financing initiatives.

First, livelihood development around marine national parks involves multiple institutions operating under different mandates. National park authorities facilitate conservation partnerships and community livelihood initiatives linked to sustainable resource use, while district and provincial agencies implement programmes related to fisheries, tourism, cooperatives, and MSME development.

These efforts already contribute to livelihood support in different ways. Strengthening coordination across these actors could further enhance market access, improve connections to financial services and MSME support programmes, and facilitate more consistent alignment between livelihood initiatives and conservation objectives within national park areas.

Second, the institutional readiness of community groups varies across sites. In Wakatobi, several livelihood groups demonstrate relatively stronger organisational structures and market linkages, creating opportunities for scaling and value-chain development. In contrast, many community groups in Togean operate at a smaller

scale and rely more heavily on informal economic arrangements, indicating a need for gradual capacity strengthening before more structured financing mechanisms can be introduced.

Third, private sector actors influence livelihood outcomes primarily through market relationships rather than direct participation in conservation governance. Fisheries traders, tourism operators, and processing businesses shape economic incentives and can therefore play an important role in supporting conservation-compatible livelihoods when appropriate partnerships and incentives are in place.

These governance conditions underscore the importance of sequencing livelihood and financing interventions according to institutional readiness and local economic conditions. Rather than applying uniform solutions across sites, implementation pathways must consider differences in market integration, community organisation, and stakeholder coordination between TNW and TNKT.

The following chapters therefore focus on identifying livelihood opportunities that are compatible with conservation objectives and exploring financing pathways that can support their development in ways that reflect the governance realities observed at the case study sites.

4 LIVELIHOOD CONDITIONS IN WAKATOBI NATIONAL PARK AND TOGEAN ISLANDS NATIONAL PARK

Understanding local livelihood structures is essential for designing sustainable financing and livelihood strategies in marine conservation areas. Communities living within and around conservation areas mostly depend directly on marine and coastal resources for income and food security. At the same time, conservation regulations and ecological changes can alter traditional economic activities.

In both **TNW** and **TNKT**, local economies are closely linked to marine ecosystems, particularly fisheries and tourism. However, the two sites exhibit different levels of economic diversification, infrastructure condition, and market integration. These differences influence both the opportunities and challenges for implementing sustainable livelihood initiatives compatible with marine conservation objectives.

4.1 Livelihood Characteristics in Wakatobi National Park

4.1.1 *Tourism development*

TNW has developed into one of Indonesia's internationally recognised marine tourism destinations, particularly for diving and marine ecotourism. The region's coral reef ecosystems are among the most diverse globally, attracting both domestic and international tourists. Every year, visitors engage in activities, such as diving, snorkelling, and marine wildlife observation, that have become key economic drivers for coastal communities and local enterprises.

The growth of tourism has encouraged the development of supporting services, including accommodation, transport services, restaurants, guiding services, and tourism-related microenterprises. These activities provide alternative income sources beyond traditional fishing livelihoods and have gradually expanded employment opportunities for residents.

Tourism development has also stimulated improvements in infrastructure and connectivity, although these remain uneven across islands and communities. In some areas, tourism operators collaborate with local communities through employment, guiding services, and small-scale supply chains for food and transport. However, tourism activities are also sensitive to seasonal weather conditions and global travel dynamics. As a result, while tourism provides important economic opportunities, it does not fully replace the need for diversified livelihood strategies.

4.1.2 *Fisheries sector*

Despite tourism growth, fisheries remain a central livelihood for many households in Wakatobi. Small-scale fishing is widely practiced using traditional gear such as hand

lines, nets, and traps. Fisheries activities provide both income and food security for coastal communities.

The fishing sector is closely connected to local fish markets and regional supply chains, where fish are sold through collectors and traders before reaching larger markets. The structure of the fisheries value chain often limits the economic returns received by fishers due to dependence on intermediaries and fluctuating prices.

In addition to supplying local and regional markets, fisheries products from Wakatobi have also reached international markets through fish processing units (i.e., *Unit Pengolahan Ikan/UPI*). One example is the export of frozen octopus, which has become an important commodity in the region. A local processing unit in Wakatobi regularly exports octopus to Japan. This export activity demonstrates that fisheries in Wakatobi are already integrated into global seafood supply chains. At the same time, it highlights the importance of strengthening value-chain management, quality control, and sustainable harvesting practices to ensure that fisheries-based livelihoods can continue to benefit local communities while maintaining marine resource sustainability.

Fishing productivity, however, is influenced by seasonal weather conditions and marine ecosystem dynamics. Rough sea conditions during certain months reduce fishing activity, contributing to income instability among fishing households.

4.1.3 Emerging MSME activities

In recent years, MSMEs related to tourism and marine products have begun to emerge in TNW. These include small-scale food processing, handicrafts, souvenir production, and tourism services.

Such enterprises often operate at a household scale and are closely linked to tourism demand. For example, local products such as dried fish, processed seafood, and handmade crafts are sold to visitors or supplied to local tourism businesses.

Although these MSMEs remain relatively small in scale, they represent an important pathway for livelihood diversification and local economic development. Supporting these enterprises through training, market access, and business development services could strengthen their contribution to community livelihoods.

4.1.4 Women-led enterprises

Women play a significant role in household economies in Wakatobi, particularly through small-scale economic activities. Women-led enterprises often include food preparation, snack production, small retail businesses, and handicraft production.

In tourism areas, women also participate in hospitality services, homestay management, and the preparation of local culinary products for visitors. These activities provide supplementary income for households and increase women's participation in local economic activities.

Strengthening women's enterprises through training, cooperative development, and improved market access could further enhance their economic contribution while supporting inclusive community development.

4.2 Livelihood Characteristics in Togean Islands National Park

4.2.1 Fisheries-dominant economy

In contrast to Wakatobi, livelihoods in the Togean Islands remain predominantly dependent on fisheries. Most coastal households rely on small-scale fishing as their primary source of income. Fishing practices generally use simple gear such as hand lines, nets, traps, and small motorised boats, reflecting the small-scale nature of local fisheries.

The fisheries sector in the region involves a complex supply chain including fishers, collectors, traders, and processors. Fish products move through several intermediaries before reaching final markets, which affects the distribution of economic benefits within the value chain.

While fisheries provide essential livelihoods, several structural challenges affect the sector. These include limited fishing ports, fishing technology, fluctuating productivity, environmental pressures, and limited capacity among fisher groups. The combination of these factors often results in unstable incomes for fishing households.

In addition, fisheries activities are highly dependent on weather conditions. Rough sea conditions for almost half of the year and seasonal climate variability frequently prevent fishers from going to sea, limiting income opportunities during certain periods.

4.2.2 Limited tourism development

The Togean Islands possess significant marine biodiversity and natural attractions, including coral reefs, mangrove ecosystems, and unique biotas. These resources support marine ecotourism activities such as diving, snorkelling, and nature-based tourism.

Tourist visits tend to peak during specific months, particularly between July and September, while visits decline significantly during other periods mainly due to weather conditions and holiday periods. Although tourism has existed in the area for several decades, the number of tourism enterprises remains relatively limited. Accommodation facilities, diving operators, and supporting tourism services are present but concentrated in certain islands and locations.

Infrastructure limitations, including transport connectivity, water supply, sanitary problems, and waste management, continue to constrain tourism expansion. In some cases, tourism growth also increases environmental pressures, particularly through

waste generation and increased resource use. As a result, tourism currently plays a complementary rather than dominant role in the local economy of Togean.

4.2.3 *Weak market integration*

Economic activities in the Togean Islands are constrained by geographic isolation and limited connectivity to larger markets. Small island economies often face higher transportation costs, limited infrastructure, and longer supply chains.

Fishery products, tourism services, and other local products frequently depend on external traders or intermediaries for distribution. This limits the ability of local producers to capture higher value from their products. Market integration is further affected by the small scale of local enterprises and limited access to business development services, technology, and market information.

4.2.4 *Limited access to finance*

Access to formal financial services remains limited in many communities within the Togean Islands. Small-scale fishers and household enterprises often rely on informal financial arrangements or loans from traders and middlemen.

These arrangements can create dependency relationships within the supply chain and limit the ability of producers to invest in improved equipment, business expansion, or value-added processing.

Limited access to finance also constrains the development of alternative livelihood activities, including tourism services, creative economy initiatives, and small-scale processing industries.

4.3 Key Governance and Implementation Gaps

Analysis of policies, stakeholder roles, and field consultations in Wakatobi and Togean revealed several structural and operational challenges affecting the implementation of sustainable livelihood initiatives in marine national parks. While the regulatory framework generally supports community participation and sustainable resource use, practical implementation often faces constraints related to institutional coordination, market access, and local operational capacity.

4.3.1 *Institutional coordination*

Marine national park governance involves multiple actors across national, provincial, and local levels, including MoFOR, the MMAF, provincial governments, and district-level agencies. While mandates are generally defined in national regulations, coordination between institutions remains uneven in practice. Differences in sectoral priorities and planning processes can result in fragmented implementation of livelihood

and conservation initiatives. At the local level, park authorities often operate with limited mechanisms to coordinate development-oriented activities with other government programmes.

4.3.2 Market and value chain constraints

Field consultations highlighted that many community livelihood activities remain highly dependent on informal market structures, particularly local collectors. While collectors play an important role in connecting remote communities to markets, the absence of structured aggregation systems and transparent pricing mechanisms can limit the bargaining power of fishers and producers. In remote island contexts such as Togean, logistical constraints further affect the ability of communities to access higher-value markets.

4.3.3 Operational and infrastructure limitations

Geographic isolation, limited transportation connectivity, and inconsistent electricity supply present practical challenges for livelihood development in several coastal communities. These constraints affect cold storage, product handling, and tourism infrastructure, limiting opportunities for value addition and diversification of local livelihoods.

4.3.4 Limited integration between conservation and livelihood programmes

Although conservation and community livelihood initiatives are often implemented in the same areas, they are not always fully integrated within local governance systems. Livelihood programmes are frequently project-based and may not be embedded in longer-term institutional arrangements or local development planning.

4.3.5 Opportunities for improvement

Despite these challenges, field consultations highlighted strong local interest in developing sustainable livelihood initiatives linked to marine conservation. Community groups, local collectors, tourism actors, and village institutions demonstrated willingness to collaborate when clear incentives and coordination mechanisms are established. These conditions create opportunities to pilot integrated livelihood approaches that combine fisheries, tourism, and local value chain development while supporting conservation objectives.

4.4 From Livelihood Conditions to Sustainable Livelihood Pathways

The livelihood analysis presented in Chapter 4 highlights the strong dependence of communities surrounding marine national parks on marine resources, particularly fisheries and tourism-related activities. While these sectors provide important sources

of income, they are also characterised by varying levels of vulnerability. Fishing activities are highly influenced by seasonal weather conditions and marine ecosystem dynamics, while tourism activities fluctuate depending on visitor demand, accessibility, and environmental conditions. As a result, household income in many coastal communities remains unstable across seasons.

The analysis also showed that the two study sites exhibit different levels of livelihood diversification. TNW demonstrates a more diversified local economy, with fisheries, tourism services, and emerging small enterprises contributing to community livelihoods. In contrast, communities in TNKT remain more strongly dependent on small-scale fisheries, with tourism and other alternative economic activities still developing. These differences indicate that livelihood development strategies need to be tailored to the local context and level of readiness at each site.

At the same time, the stakeholder mapping and institutional analysis presented in Output 2 demonstrate that multiple actors—including government agencies, community organisations, tourism operators, NGOs, and private sector partners are already engaged in activities related to fisheries development, tourism promotion, and community empowerment. However, these initiatives are often implemented through sectoral programmes and may not always be coordinated within the broader framework of Marine National Park management.

These findings are closely aligned with Indonesia's Blue Economy (BE) approach, which emphasises sustainable use of marine resources, improved value addition, ecosystem protection, and inclusive economic growth. In this context, national parks play a strategic role as platforms where conservation and economic development can be integrated. Strengthening livelihood systems within TNW and TNKT therefore contributes not only to local income generation, but also to broader BE objectives, including sustainable fisheries, responsible tourism, and community-based economic development.

Building on these findings, the next chapter proposes a set of **integrated sustainable livelihood pathways** that aim to strengthen community economic opportunities while supporting conservation objectives. The proposed pathways focus on three sectors that are closely linked to the ecological and socio-economic context of the study sites:

- **Fisheries-based livelihoods**, which aim to improve value addition, supply chain efficiency, and sustainable fishing practices;
- **Tourism-linked livelihoods**, which support community participation in marine tourism and related service sectors; and
- **Creative economy livelihoods**, including activities such as craft production and waste management initiatives that can generate additional income opportunities while addressing environmental challenges.

These livelihood pathways are designed to complement existing community practices and institutional arrangements while creating opportunities for diversification. Importantly, the proposed schemes also consider livelihood activities that are less

dependent on seasonal weather conditions, thereby helping communities maintain more stable income streams throughout the year.

The following chapter elaborates these livelihood pathways and identifies potential pilot schemes that can be implemented under the ASEAN ENMAPS initiative in TNW and TNKT.

5 SUSTAINABLE LIVELIHOOD PILOT SCHEMES FOR WAKATOBI NATIONAL PARK AND TOGEAN ISLANDS NATIONAL PARK

Based on the livelihood conditions described in Chapter 4 and the institutional landscape presented in Output 2, this chapter proposes several pilot livelihood schemes that could be implemented under the ASEAN ENMAPS initiative in TNW and TNKT. The proposed pilots aim to strengthen community livelihoods while supporting conservation objectives and improving coordination among key stakeholders.

The proposed schemes align with the ASEAN ENMAPS project objective of strengthening MPA effectiveness by linking conservation outcomes with community livelihoods. By improving market access and creating incentives for sustainable fishing practices, the scheme contributes to fisheries sustainability, ecosystem resilience, and the long-term viability of MPA networks.

The pilot schemes are designed to **build on existing economic activities and institutional arrangements** in each site. Rather than introducing entirely new livelihood sectors, the proposed schemes focus on **scaling up practices that communities are already undertaking**, while improving market access, product quality, institutional coordination, and environmental sustainability.

Furthermore, some proposed livelihood activities, such as seaweed seed production and anchovy processing, can provide alternative income opportunities during periods of rough weather when fishing activities are limited.

Gender-responsive and participatory approaches are integrated throughout the schemes to ensure that both men and women can participate in livelihood opportunities and community decision-making processes. This approach helps strengthen local ownership and the long-term sustainability of conservation and livelihood outcomes.

5.1 Proposed Livelihood Schemes for Wakatobi National Park

Three pilot livelihood schemes are proposed for TNW:

1. Seaweed Value Chain Coordination and Market Access
2. Responsible Fisheries Supply Chain Development
3. Reef-Friendly Culinary Tourism and Community Waste Management

These schemes reflect the major livelihood sectors in Wakatobi, namely aquaculture, fisheries, and tourism and aim to strengthen the link between community economic development and marine conservation.

5.1.1 Seaweed value chain coordination and market access scheme

Location: Desa Liya, Wangi-Wangi Island, Wakatobi

Possible Community group: Kelompok Nelayan Terpadu Desa Liya Bahari and Lagundi, Wangi-Wangi

Context and rationale

Seaweed cultivation remains one of the most important livelihood activities for coastal communities in TNW. Many households combine fishing and seaweed farming as part of their livelihood strategies, particularly in areas such as Liya Bahari and Kaledupa. Over the past decade, several initiatives have supported improvements in seaweed cultivation practices and farmer organisation.

World Wide Fund for Nature (WWF)-Indonesia's Southern Eastern Sulawesi Seascape programme has been actively supporting seaweed farming in Wakatobi, including work with groups such as Lagundi (Liya), Dewara (Derawa), and Sarope (Ollo Selatan). These efforts have focused on the introduction of Better Management Practices (BMP) for seaweed cultivation¹ farmer capacity building, and improvements in cultivation practices.

Despite these improvements, seaweed-based livelihoods remain constrained by structural market challenges. Farmers frequently face price volatility, limited bargaining power, and dependence on a small number of local collectors. In practice, most seaweed is sold in dried form, with limited value addition at the community level. While this reflects existing market structures, it also indicates that opportunities for increasing income lie not only in production, but in improving how products are aggregated, marketed, and linked to buyers.

At the same time, small-scale processing activities have begun to emerge in Wakatobi, particularly among community groups such as Lagundi, creating opportunities for selective value addition. However, given relatively high production costs, the feasibility of processing depends on market access, scale, and product positioning, and should be developed gradually alongside improvements in supply chain coordination.

Community organisations such as Kelompok Nelayan Terpadu Desa Liya Bahari have the potential to strengthen coordination among seaweed farmers and improve post-harvest handling and supply consolidation at the local level. In parallel, WWF is currently exploring the development of the Lagundi group as an aggregation node that can serve as a collection point with minimum quality requirements based on BMP standards, enabling outreach to other farmer groups.

¹ WWF, 2014. Better Management Practices Seri Panduan Perikanan Skala Kecil: Budidaya Rumput Laut – Kotoni (*Kappaphycus alvarezii*), Sacol (*Kappaphycus striatum*) dan Spinosum (*Eucheuma denticulatum*). Jakarta – WWF Indonesia.

Under these conditions, strengthening coordination across producer groups, aggregation mechanisms, and market actors offers a practical pathway to improve livelihood stability and increase local economic benefits. The scheme therefore focuses on strengthening collaboration between seaweed farmer groups, the Lagundi aggregation initiative, local processors, and market channels, including tourism-linked markets and regional buyers.

By focusing on market access, aggregation, and value chain coordination, the initiative complements ongoing cultivation support provided by WWF while addressing a key gap in the current system: the ability of small-scale producers to access more stable, transparent, and diversified markets.

The proposed scheme under ASEAN ENMAPS project is designed to complement not duplicate, ongoing initiatives by focusing on value chain coordination and market access rather than upstream production challenges. By supporting coordination across these actors, the initiative complements ongoing seaweed cultivation support provided by WWF while helping to strengthen downstream value addition and diversified market opportunities for seaweed producers in Wakatobi.

Table 2. Implementation roadmap of the seaweed value chain coordination and market access scheme

Phase	Key Activities	Milestones
Short Term (Year 1)	Map seaweed producers, collectors, and existing supply flows (Liya, Kaledupa), including linkages to Bau-Bau, Kendari, and existing buyers, in coordination with WWF's ongoing programme.	Practical supply chain map (actors, flows, volumes, price points) compiled and shared with stakeholders.
	Facilitate coordination between Kelompok Nelayan Terpadu Liya Bahari, WWF, DKP Wakatobi, and other relevant actors to align roles in aggregation, production, and market linkage.	Functional coordination platform established with clear roles across actors, aligned with WWF's aggregation initiative.
	Strengthen consistency of drying, grading, and handling practices based on existing BMP standards, focusing on meeting minimum quality requirements required by aggregation and buyers	Participating farmers meet agreed minimum quality standards for dried seaweed.
	Align participating farmer groups with the emerging aggregation mechanism being developed by WWF (e.g., Lagundi), including coordination on supply timing, quality, and volume	Initial alignment established between farmer groups and aggregation system for coordinated supply.
	Initiate structured engagement with buyers (i.e., collectors, regional traders) and tourism outlets to test market channels for both raw and processed products.	Initial buyer relationships and trial transactions established (raw and/or processed products).
Medium Term (Year 2)	Strengthen coordination of supply from Kelompok Nelayan Terpadu Liya Bahari and other groups into existing aggregation mechanisms.	Increased volume and consistency of supply flowing through aggregation channels.

Phase	Key Activities	Milestones
	Facilitate structured engagement between aggregation actors, collectors, and regional buyers (Kendari, Bau-Bau, Makassar) to improve pricing transparency and transaction regularity.	Regular trading relationships established with at least one regional buyer.
	Support coordination of shipments and consolidation of products for regional markets, building on existing trade routes.	More efficient and coordinated delivery of seaweed to regional markets.
	Strengthen marketing of seaweed products through regional exhibitions, tourism promotion events, and digital marketing platforms.	Increased visibility and sales of Wakatobi seaweed products in tourism and regional markets.
	Strengthen collective marketing and distribution channels (e.g., souvenir outlets, exhibitions, regional retail supermarkets).	Increased product visibility and more consistent sales across tourism and regional channels.
Long Term (Year 3 and beyond)	Expand participation of farmer groups supplying seaweed through Kelompok Nelayan Terpadu Liya Bahari and the Lagundi aggregation system across Wakatobi villages.	A stable supply chain gradually established linking producers, aggregation initiatives, and processors.
	Strengthen partnerships with regional distributors and retailers to expand market reach beyond Wakatobi.	Wakatobi seaweed products distributed in regional markets such as Kendari and Makassar.
	Promote branding of Wakatobi seaweed products linked to sustainable aquaculture practices and community-based production systems.	Wakatobi seaweed products recognised as locally produced sustainable products.
	Improve financial access through cooperatives, or microfinance institutions, including financial literacy support for farming households.	Farmers and processors receive more stable and transparent payments.

Note: BMP = best management practice
DKP = Dinas Kelautan dan Perikanan (Department of Marine Affairs and Fisheries)
WWF = World Wide Fund for Nature

Operational pathway

The scheme aims to strengthen coordination across the seaweed value chain by linking producer groups, emerging aggregation initiatives, local processors, and market actors, building on ongoing seaweed cultivation support provided by WWF.

1. Strengthening production coordination

Seaweed farmers organised under Kelompok Nelayan Terpadu Desa Liya Bahari can strengthen coordination of cultivation activities and post-harvest handling among producer households.

Key Actions

- Organise seaweed farmers involved in cultivation and drying activities in Liya Bahari and surrounding villages for coordinated supply.
- Strengthen consistency of drying, grading, and quality control practices to ensure consistent supply, based on existing BMP introduced by WWF.

- Align production timing and volumes with existing aggregation and buyer requirements where feasible.

Potential Partners

Table 3. Potential partners in strengthening production coordination

Institution	Role
Kelompok Nelayan Terpadu Liya Bahari	Coordinate seaweed production and post-harvest handling
WWF-Indonesia	Provide guidance on BMP cultivation practices
Fisheries Office Wakatobi	Provide extension services and farmer training
Balai TN Wakatobi	Ensure cultivation activities align with park zoning

2. Supporting emerging aggregation mechanisms

WWF is currently developing aggregation functions (e.g., through Lagundi). The scheme does not establish new aggregation systems, but focuses on aligning producer groups and market actors with these existing mechanisms.

Key Actions

- In collaboration with WWF, facilitate coordination between seaweed farmer groups and the existing Lagundi initiative.
- Support alignment of supply (volume, timing, quality) with aggregation requirements.
- Facilitate dialogue between farmer groups, collectors, and potential buyers.

Potential Partners

Table 4. Potential partners in supporting emerging aggregation mechanisms

Institution	Role
Lagundi group	Emerging aggregation initiative
WWF-Indonesia	Lead support for aggregation development
Fisheries Office Wakatobi	Support coordination with traders and collectors
Village cooperatives / BUMDes	Assist with local coordination and logistics

Note: BUMDes = Badan Usaha Milik Desa (village-owned enterprise)

3. Selective development of local processing capacity

Local processing initiatives can create additional demand for seaweed while increasing local value capture, but should be developed selectively based on proven market opportunities.

Key Actions

- Identify small-scale processors producing seaweed-based food products with existing or potential market linkages.
- Facilitate training on processing techniques and food safety standards.
- Encourage participation of women's groups in processing activities.

Potential Partners

Table 5. Potential partners in selective development of local processing capacity

Institution	Role
Local processors/UMKM	Produce seaweed-based products
UPI enterprises	Product development
Women's groups	Participate in processing activities
Fisheries Office Wakatobi	Provide technical support

Note: UMKM = Usaha Mikro, Kecil, dan Menengah (Micro, Small, and Medium-sized Enterprises)
UPI = Unit Pengolahan Ikan (fish processing unit)

Market expansion strategy

Short-term strategy (Demand consolidation & market coordination)

- Mapping seaweed producers, collectors, and existing supply flows (Liya, Kaledupa), including linkages to Bau-Bau, Kendari, and existing buyers, in coordination with WWF's ongoing programme.
- Establishing a coordination mechanism between processors and the Lagundi aggregation initiative to ensure stable raw material supply.
- Mapping production capacity of existing seaweed processors and identifying opportunities for collective marketing or distribution.
- Developing a shared distribution channel to tourism outlets, souvenir shops, and homestays in Wakatobi rather than relying on individual sales.
- Coordinating product supply during peak tourism seasons to ensure consistent availability.

Medium-term strategy (regional market penetration)

- Establishing partnerships with retailers and distributors in Kendari, Bau-Bau, and other urban centres in Southeast Sulawesi.
- Developing bulk shipment arrangements for processed seaweed products from Wakatobi to regional markets.
- Supporting participation in regional food exhibitions and small and medium enterprisestrade fairs to connect producers with wholesale buyers.

- Facilitating agreements with regional distributors who already supply supermarkets and food retailers.

Long-term strategy (institutionalised market access)

- Developing long-term supply agreements with regional distributors or food companies
- Exploring integration into national online retail platforms or digital marketplaces.
- Establishing collective marketing mechanisms through cooperatives or BUMDes to coordinate larger shipments.
- Positioning Wakatobi seaweed products as **coastal specialty products linked to sustainable marine livelihoods**.

4. Financial Access and Business Development

Access to capital remains a key constraint for both farmers and processors.

Key Actions

- Support basic financial literacy and simple business practices linked to market activities.
- Facilitate linkages with existing financial services (cooperatives, Bank Rakyat Indonesia Link, etc.).
- Encourage collective sales to improve payment transparency and reduce dependency on individual buyers.

Role of the ASEAN ENMAPS Project

The ASEAN ENMAPS initiative would primarily act as a **facilitator**, supporting coordination among stakeholders rather than implementing livelihood activities directly.

Key roles include:

- Facilitating coordination between Kelompok Nelayan Terpadu Liya Bahari, Lagundi initiative, WWF, processors, and government agencies
- Supporting market linkage development and engagement with buyers
- Supporting training and knowledge exchange related to seaweed value chain development among the three countries.
- Identifying potential market and financing partners
- Promoting exchange learning with other coastal communities implementing similar livelihood models

5.1.2 Responsible fisheries supply chain and traceability

Location: Wangi-Wangi Island, Wakatobi

Possible Community Groups: Members of **Komanangi fisher network**, **Komunto**, **Kaledupa**, **Binongko**, UPI Padalleang Sama, and Bajo communities.

Context and Rationale

Fisheries remain one of the most important sources of livelihood for coastal communities in Wakatobi. Many households depend on small-scale fishing targeting a range of resources, including reef fish, octopus, and pelagic species, supplying both local markets and external buyers.

However, fisheries livelihoods are often constrained by fragmented supply chains, limited market transparency, and inconsistent product quality. Fishers frequently rely on a small number of buyers, with limited access to price information and weak bargaining power. As a result, even high-value products may not translate into stable or fair income at the household level.

At the same time, increasing fishing pressure on certain resources highlights the need to balance livelihood development with sustainability considerations. Strengthening fisheries value chains therefore requires not only improving market access, but also encouraging responsible fishing practices and appropriate diversification across species.

Field observations in Wakatobi indicated several emerging improvements in handling practices and quality control. For example, UPI Padalleang Sama in Wangi-Wangi has begun supporting fishers in maintaining product quality to meet market standards, while planned expansion of cold storage infrastructure under the *Koperasi Merah Putih*² programme presents opportunities to improve aggregation and distribution.

Building on these developments, the proposed scheme focuses on strengthening coordination between fishers, cooperatives, and buyers, while introducing simple and practical traceability approaches that link product quality and responsible fishing practices to market incentives.

Rather than establishing complex certification systems, the scheme emphasises market-based mechanisms that improve transparency, strengthen buyer relationships, and create incentives for sustainable practices. Over time, this approach can also support broader participation across different fishing communities and contribute to reducing pressure on heavily exploited resources.

² <https://www.merahputihkemenkop.cloud/28-sulawesi-tenggara/7-kab-wakatobi>

Table 6. Implementation roadmap for responsible fisheries supply chain

Phase	Key Activities	Milestones
Short Term (Year 1)	Identify participating fisher groups within the Komanangi network and conduct a baseline assessment of fishing practices, supply chain actors, key landing sites (<i>titik pendaratan ikan</i>), and roles of women in fish handling and marketing.	Participating fisher groups formally engaged in the programme
	Facilitate dialogue between fisher groups, local seafood collectors, women involved in fish marketing, and UPI operators managing seafood collection facilities.	Initial supply coordination between fishers and UPI established
	Provide training on post-harvest handling, fish quality preservation, sustainable fishing practices, and simple catch documentation, ensuring participation of both fishers and women involved in fish processing or trading.	Fishers adopt improved fish handling and quality maintenance methods
	Introduce a basic traceability recording system for reef fish catch managed by fisher groups and local collection points.	Pilot traceability system established for participating fishers
	Pilot implementation of improved fishing and handling practices in selected fisher groups, building on existing community practices and local agreements.	Practical application of responsible fishing and handling practices tested in pilot groups
Medium Term (Year 2)	Strengthen cold storage and aggregation systems through partnerships with UPI and local cooperatives to improve fish quality and supply coordination.	Reef fish aggregation system operational
	Develop quality standards and responsible fishing guidelines with active participation of fisher groups and community representatives.	Community fisheries code of practice adopted
	Test traceability-linked market incentives (e.g., preferred buyers, price differentiation, or consistent purchase agreements).	Traceability system linked to real market transactions and incentives
	Engage with local government to understand existing retribution mechanisms and ensure alignment with landing, aggregation, and trading practices.	Better clarity and alignment between fisheries activities and local retribution systems
Long Term (Year 3 and beyond)	Expand participation of fisher groups from other islands in Wakatobi, strengthening collaboration between communities and seafood buyers.	Responsible reef fish supply network expanded across Wakatobi
	Strengthen partnerships with exporters and premium seafood markets interested in traceable and responsibly sourced reef fish.	Traceable reef fish products enter higher-value markets
	Explore introduction of certification schemes (where relevant), building on established traceability and supply chain systems.	Readiness for certification assessed, with potential pilot certification pathways identified

Operational pathway

Scaling a responsible fisheries supply chain requires strengthening three key components: fish quality management, simple traceability systems, and market

partnerships. The following steps outline practical actions that can support the development of a sustainable fisheries value chain in Wakatobi.

1. Strengthening fisher capacity and catch quality

Improving fish quality is a critical first step to increase market value and ensure products meet buyer requirements.

Key Actions

- Provide training on proper fish handling, icing, and storage methods.
- Introduce guidelines for responsible fishing practices that avoid destructive techniques.
- Support fisher groups in recording catch information for traceability purposes.
- Align catch handling and documentation practices with requirements from buyers and existing landing/collection systems.

Potential Partners

Table 7. Potential partners in strengthening fisher capacity and catch quality

Institution	Role
Fisheries Office Wakatobi	Training and extension support
UPI Padalleang Sama	Product aggregation and quality control
Balai TN Wakatobi	Promote sustainable fishing practices compatible with conservation goals
Community fisher groups Komanangi	Implementation of responsible fishing practices

1. Strengthening cold storage and product aggregation

Cold storage infrastructure plays an important role in maintaining product quality and enabling fishers to access better market opportunities.

Key Actions

- Coordinate with UPI in planning additional cold storage facilities.
- Strengthen coordination at existing landing sites and collection points to improve consolidation of fish supply.
- Develop quality grading systems that reward higher-quality products.

Potential Partners

Table 8. Potential partners in strengthening cold storage and product aggregation

Actor	Location	Role
UPI Padalleang Sama	Wangi-Wangi	Fish aggregation and cold storage
Fisheries Office Wakatobi	Wakatobi	Technical support
Seafood buyers and exporters	Makassar/Surabaya	Purchase of reef fish products

2. Establishing Traceability Systems

Traceability mechanisms can increase the value of seafood products by demonstrating responsible fishing practices and legal supply chains.

Key Actions

- Introduce simple catch documentation systems for fisher groups.
- Pilot simple traceability approaches linking catch records to fisher groups, landing points, and buyers.
- Coordinate with seafood buyers interested in traceable seafood products.

Potential Partners

Table 9. Potential partners in establishing traceability systems

Institution	Role
Fisheries Office Wakatobi	Fisheries monitoring and documentation
Local UPI	Traceability coordination
Seafood exporters	Market incentives for traceable fish products

3. Logistics and market distribution

Fisheries products are typically transported through regional seafood trading networks connecting Wakatobi to larger markets. Transport routes typically follow the pathway:

Wakatobi → Kendari → Makassar/Surabaya → Export Markets

Each commodity might have different routes and seafood traders. Therefore, a more detailed mapping is needed.

Table 10. Potential logistics and market channels

Channel	Function
Seafood collectors in Wakatobi	Purchase and aggregation
Regional seafood traders in Kendari	Distribution to larger markets
Prima Bahari Inti Lestari	International seafood export in Makassar

4. Market expansion strategy

Market expansion for fisheries products can be pursued through a combination of improved product quality, traceability, and partnerships with seafood buyers.

Short-Term Strategy

- Strengthen sales through existing collectors and UPI.
- Improve product handling and storage practices.

Medium-Term Strategy

- Establish supply agreements with seafood buyers in Makassar.
- Promote traceable fisheries products linked to sustainable fishing practices.

Long-Term Strategy

- Develop partnerships with exporters and premium seafood markets.
- Promote Wakatobi fisheries as a sustainably sourced seafood product.

5. Role of ASEAN ENMAPS Project in facilitating partnerships

The ASEAN ENMAPS initiative can play an important role in facilitating coordination between fishers, government agencies, and seafood buyers.

Key Roles for ASEAN ENMAPS Project

- Facilitate dialogue between fisher groups and UPI seafood buyers
- Support training on traceability and responsible fishing practices
- Promote coordination between DKP, Balai TN, and community groups
- Encourage fair pricing mechanisms that reward sustainable fishing

Through these actions, the responsible fisheries supply chain initiative can strengthen fisher livelihoods while supporting conservation objectives in Wakatobi National Park.

5.1.3 Reef-friendly culinary tourism and community waste management

Location: Desa Kulati, Tomia Island, Wakatobi

Possible Community Group: Poassa Nuhadda, Kulati; Monippatu, Kollo Soha.

Context and Rationale

Tourism has long been recognised as one of the most promising livelihood sectors in Wakatobi due to its globally recognised coral reef ecosystems and marine biodiversity. The presence of world-class diving sites has attracted international visitors for several decades, particularly through resort-based tourism and yacht visits. However, tourism benefits are not always evenly distributed across local communities, and many villages located near important marine tourism sites have limited opportunities to capture economic benefits from visiting tourists.

Community-based tourism initiatives in Wakatobi have begun to emerge as an alternative approach to broaden local participation in the tourism economy. One such example is the Poassa Nuhadda tourism group in Tomia Island, which was established in 2013 following community mapping of tourism potential supported by conservation organisations. Since its establishment, the group has developed a range of tourism activities including homestay accommodation, snorkelling experiences, cultural tours, and cooking experiences featuring local seafood dishes.

The group currently manages approximately 20 homestays across the village, with a rotating system to ensure fair distribution of visitors among households. Women's groups, organised through *dasa wisma* networks, also participate in tourism activities through food preparation, cultural experiences, and local handicrafts. These activities demonstrate that tourism in Kulati has already begun to generate economic benefits while maintaining community participation.

Despite these positive developments, several constraints continue to limit the growth of community-based tourism in Wakatobi. First, tourist arrivals remain relatively seasonal and depend heavily on external operators such as resorts and yacht tourism. Second, community tourism groups have limited access to marketing platforms and digital promotion channels, making it difficult to attract independent travellers. Third, supporting infrastructure such as visitor facilities, waste management systems, and tourism service standards remain underdeveloped in many villages.

At the same time, increasing tourism activities also generate environmental pressures, particularly in relation to waste management and coastal pollution. Field inputs indicate that a significant portion of coastal waste originates from domestic sources as well as external waste transported by ocean currents. While local governments have shown increasing attention to waste management, community practices such as direct disposal into the sea remain common in some areas.

Community-led waste management initiatives therefore represent an important opportunity to link tourism development with marine conservation objectives. Monippatu waste bank in Kollo Soha has already established basic collection systems and informal partnerships for transporting waste to Bau-Bau through local shipping networks. However, limited equipment and processing capacity constrain the ability to increase value from collected materials.

The proposed scheme seeks to strengthen community-based tourism in Kulati by combining reef-friendly culinary tourism experiences with improved community waste management systems. By expanding tourism products, improving marketing channels, and strengthening partnerships with tourism operators, the initiative can help increase visitor numbers and encourage longer stays in the village while supporting marine conservation.

Table 11. Implementation roadmap for reef-friendly culinary tourism and community waste management

Phase	Key Activities	Milestones
Short Term (Year 1)	Develop website and digital tourism catalogue for Poassa Nuhadda.	Tourism products accessible online with clear packages and pricing.
	Package existing tourism products into multi-day itineraries (e.g., 2D1N, 3D2N), including conservation add-on activities: 1. Mangrove planting package 2. Coral adoption	Structured tourism packages ready for marketing.
	Reactivate existing waste management facilities in Kulati: Including exploring waste management fee from yacht.	Waste system operational at community level.
	Initiate coordination with Desa Kollo Soha waste bank “Monippatu” and support simple recycling and upcycling activities (e.g., souvenirs, basic products) using available materials and low-cost equipment.	Agreement for inter-village waste collaboration established.
Medium Term (Year 2)	Establish partnerships with Wakatobi Dive Resort, travel agents and diving operators.	Regular tourist flows beyond yacht/resort visitors.
	Integrate culinary tourism (e.g., cooking class, seafood experience) into packages, encouraging participation of women and household enterprises.	Visitors participate in structured village experiences.
	Develop a waste collection and transport system between villages and make the Monippatu waste bank an aggregation hub.	Increased waste volume processed through shared system.
Long Term (Year 3 and beyond)	Expand market reach to domestic independent travellers.	Increased number of direct bookings from online channels.
	Strengthen branding of Kulati as eco-tourism village.	Kulati recognised as sustainable tourism destination.
	Scale inter-village waste management model across Tomia.	Integrated waste system operating at island level.
	Explore alignment with district-level waste management systems to support longer-term sustainability such as developing 3R-centered material recovery facility (TPS3R) for processing waste at larger scale.	TPS3R facility piloted and operational.

Phase	Key Activities	Milestones
	Introduce upcycled product development (souvenirs ¹ → furniture ²).	Waste-derived products integrated into tourism economy.

Notes: TPS3R = Tempat Pengolahan Sampah Reduce-Reuse-Recycle

(1) See examples here: <https://www.4ocean.com/>

(2) See examples here: <https://mortier.id/projects-2/> ; <https://robries.com/en/products/> ; <https://www.instagram.com/gammawaste.id/> ; https://www.instagram.com/paste_lab/

Operational pathway

While the Poassa Nuhadda group has already established a functioning community-based tourism system, scaling this initiative requires shifting the focus from basic tourism development to market expansion, visitor retention, and environmental management integration. The pathway therefore emphasises strengthening three key elements: tourism market access, length of visitor stay, and operational waste management systems. The following steps outline practical actions that can be implemented over the ASEAN ENMAPS period and beyond.

1. Strengthening tourism market access and visibility

Although the Poassa Nuhadda group has an established tourism structure and active social media presence, access to broader tourism markets remains limited. Most visitors continue to arrive through external channels such as resorts and yacht tourism, with relatively low numbers of independent travellers directly accessing the village.

Strengthening market access therefore requires improving the visibility and accessibility of tourism products beyond informal networks. This can be achieved by developing a **dedicated website and digital tourism catalogue**, which present clearly structured packages, pricing, and booking information. These tools will enable the community to engage directly with domestic and international travellers, as well as with travel agents and tour operators.

In addition, strengthening partnerships with tourism actors—particularly dive resorts, local travel agents, and open-trip organisers—can help integrate Kulati into broader tourism itineraries in Wakatobi. This approach reduces reliance on a single visitor segment and supports a more stable and diversified tourism flow.

Key Actions

- Develop a website and digital tourism catalogue for Poassa Nuhadda
- Standardise tourism packages and pricing
- Establish partnerships with travel agents and tourism operators
- Promote tourism products through online platforms

Potential Partners

Table 12. Potential partners in strengthening tourism market access and visibility

Institution	Role
Tourism Office of Wakatobi	Promotion and tourism development support
Local travel agents, tour operators, open trip organisers	Market access and visitor referrals
Dive resorts in Wakatobi	Integration of village tourism into itineraries
Poassa Nuhadda tourism group	Tourism management and operations

2. Increasing visitor stay duration through experience-based tourism

A key limitation in current tourism patterns is the short duration of visitor stays in the village. Many visitors participate in brief excursions without staying overnight, limiting the economic benefits for local households.

Increasing the length of stay requires shifting from a **visit-based model to an experience-based tourism model**, where visitors are encouraged to spend multiple days in the village. This can be achieved by packaging existing tourism activities into structured multi-day itineraries, combining marine experiences, culinary activities, and cultural interactions.

For example, snorkelling activities can be complemented with seafood cooking classes, village tours, and cultural experiences, creating a more immersive and differentiated tourism product. This approach not only increases visitor spending but also distributes benefits across multiple community members, including women's groups and homestay operators.

Key Actions

- Develop multi-day tourism packages (e.g., 2D1N, 3D2N duration of stay)
- Integrate culinary tourism and cultural experiences into packages
- Coordinate activity scheduling within the community

Potential Partners

Table 13. Potential partners in increasing visitor stay duration through experience-based tourism

Institution	Role
Poassa Nuhadda tourism group	Package development and implementation
Women's groups (<i>dasa wisma</i>)	Culinary and cultural activities
Village government	Coordination and local support
Balai TN Wakatobi	Ensure tourism activities align with conservation guidelines

3. Reactivating and scaling community waste management systems

Tourism development in coastal areas is closely linked to environmental quality, particularly in relation to waste management. In Kulati, waste management infrastructure has already been developed, including initiatives to process plastic waste into alternative products. However, these systems are currently not operating at full capacity.

Rather than establishing new infrastructure, the priority is to **reactivate and optimise existing systems**, ensuring that waste generated from tourism activities is properly managed. At the same time, there is an opportunity to scale waste management through **inter-village collaboration**, particularly by linking Kulati with Desa Kollo Soha, where a waste bank system is already functioning (called Monippatu). **Given the relatively good road connectivity in Tomia, waste collection and transport between villages is feasible.** This enables the development of a more efficient and economically viable waste management system by increasing the volume of collected materials.

Key Actions

- Reactivate existing waste management facilities in Kulati
- Establish collaboration with Desa Kollo Soha waste bank
- Separate organic and inorganic waste streams at household and tourism activity level
- Develop inter-village waste collection and transport system
- Promote waste segregation practices within tourism activities

Potential Partners

Table 14. Potential partners in reactivating and scaling community waste management systems

Institution	Role
Village government (Kulati and Kollo Soha)	Coordination of waste management system
Community tourism groups	Waste management implementation
Waste bank operator (Monippatu)	Waste processing and aggregation
YKAN, WWF, WCS	Technical support and training

Note: WCS = Wildlife Conservation Society
WWF = World Wildlife Fund for Nature
YKAN = Yayasan Konservasi Alam Nusantara

4. Integrating tourism and environmental sustainability

The integration of tourism and environmental management is essential to ensure the long-term sustainability of community-based tourism in Wakatobi. By linking tourism activities with waste management and conservation

practices, the initiative can enhance both environmental outcomes and visitor experience.

Tourism products can incorporate environmental messaging, such as reef-friendly practices, waste reduction, and community conservation efforts. This not only supports conservation objectives but also increases the attractiveness of the destination to environmentally conscious travellers.

Key actions

- Integrate environmental awareness into tourism experiences and souvenirs
- Promote reef-friendly tourism practices
- Encourage reduction of single-use plastics through alternative materials
- Align tourism activities with conservation zoning regulations

Potential Partners

Table 15. Potential partners in integrating tourism and environmental sustainability

Institution	Role
Balai TN Wakatobi	Conservation guidance and regulation
Tourism operators	Implementation of sustainable practices
Community groups	Adoption of environmentally responsible tourism
ASEAN ENMAPS	Facilitation and technical support

Note: TN = Taman Nasional

5. Market Expansion Strategy

Market expansion for community-based tourism in Kulati should focus on increasing demand through **clear market positioning, targeted visitor segments, and experience differentiation**, rather than relying solely on infrastructure or partnership development.

Short-term strategy

- Position Kulati as an **authentic village-based experience**, distinct from resort-based tourism
 - Promote “live like a local” experiences, including homestay, cooking, and daily activities
 - Use storytelling approach highlighting:
 - ✓ community participation
 - ✓ conservation practices
 - ✓ cultural identity

Medium-term strategy

- Target domestic tourism market, especially:
 - young travellers
 - open-trip communities
- Eco-conscious travellers
 - Introduce bundled pricing strategies (package pricing rather than per activity)
 - Promote Kulati as a complementary experience to diving tourism, not a competitor

Long-term strategy

- Develop Kulati as a signature eco-tourism village in Wakatobi, known for:
 - community-based tourism
 - marine conservation practices
 - circular economy initiatives
- Leverage environmental branding through:
 - waste-based products
 - plastic reduction initiatives
 - promotion of “**tourism with impact**”, where visitors contribute to conservation and community development

Role of ASEAN ENMAPS in facilitating partnerships

The ENMAPS initiative can play an important role in facilitating coordination between community tourism groups, government agencies, tourism operators, and waste management actors.

Key roles for ASEAN ENMAPS

- Facilitate partnerships between Poassa Nuhadda group and tourism operators (e.g., travel agents, dive resorts, and open-trip organisers)
- Support development of digital marketing tools, including website and tourism catalogue
- Promote coordination between village government, Tourism Office, and Balai TN
- Facilitate collaboration between Kulati and Desa Kollo Soha for inter-village waste management
- Support piloting of circular economy initiatives, including TPS3R and upcycled products

Through these actions, the tourism and waste management scheme can increase visitor numbers and length of stay, while strengthening community livelihoods and supporting environmental sustainability in Wakatobi National Park.

5.1.4 Comparative feasibility assessment of proposed livelihood schemes in TNW

To support decision-making by Balai TN and relevant stakeholders, a comparative feasibility assessment was conducted across the three proposed livelihood schemes. This assessment is intended to provide a practical overview of the relative strengths, readiness, and implementation requirements of each scheme, and to support prioritisation for pilot implementation under the ASEAN ENMAPS initiative.

The assessment is based on key criteria derived from field findings and Outputs 1 and 2, including **community readiness, market potential, conservation contribution, institutional complexity, and investment requirements**. These criteria reflect both implementation feasibility and alignment with MPA management objectives.

In addition to this analytical assessment, a participatory scoring exercise was conducted with Balai TN Wakatobi and key stakeholders during the consultation held on 15 April 2026. The exercise aimed to validate the relative feasibility and relevance of the proposed schemes based on field perspectives and institutional priorities. The results of this exercise are presented in Appendix 1.

Building on both the analytical assessment and the participatory exercise, the selection of priority pilot interventions will be further refined through joint discussions with TNW and TNKT. This process will consider site-specific readiness, institutional capacity, and alignment with ongoing initiatives, with the aim of identifying one priority pilot scheme for initial implementation under the ASEAN ENMAPS initiative.

Box 1. Small-Island waste-based livelihoods: Gili Trawangan and the Net-Works ghost-net model

Experiences from Gili Trawangan (Indonesia) and the Net-Works ghost-net recycling initiative (Philippines) demonstrate how waste management systems in small islands can evolve into community-based livelihood opportunities when supported by clear organisation, market linkages, and sustainable financing mechanisms.

In Gili Trawangan, a community organisation called *Front Masyarakat Peduli Lingkungan*³ initially established to manage tourism waste gradually developed a structured system combining waste collection, sorting, recycling, and environmental awareness campaigns. Households and tourism businesses contributed through regular service fees, while recyclable materials generated additional income through waste bank activities. The system served nearly 500 customers and required around IDR 99 million per month in operational costs, partly supported through recycling revenues and service payments⁴. This case illustrates how tourism islands can sustain waste systems when waste management is treated as a community service supported by user fees and value recovery from recyclables.

The Net-Works programme presents a complementary model focused on marine debris recovery and recycling. Coastal communities collect discarded fishing nets, which are cleaned, aggregated, and sold into a global recycling chain that regenerates nylon into new products. The initiative collected over 66 tonnes of ghost nets across multiple community collection sites, linking marine conservation with livelihood opportunities. A key feature of the programme is its community finance system, which allows participants to save income from net collection and access small loans. This combination of waste recovery, buyer partnerships, and community savings mechanisms helped ensure that financial benefits remain within participating villages⁵.

Together, these cases highlight several practical steps for establishing waste-based livelihood systems on small islands:

- Start with a manageable waste stream such as household waste from tourism or discarded fishing gear from local fisheries.
- Establish a local coordinating institution (e.g., community group, cooperative, or BUMDes) responsible for collection, sorting, and financial management.
- Combine service-based financing with value recovery, such as user fees from tourism operators or payments for recyclable materials.
- Introduce community finance mechanisms, such as savings groups or village funds, to reinvest revenue into equipment, operations, or small enterprises.
- Build partnerships with buyers, recyclers, or tourism businesses to stabilise demand for collected materials. Some recyclers in Indonesia are Parongpong RAW Lab and Kertabumi Recycling Center.

For Togeian Islands National Park, this approach could begin with village-based waste collection and ghost-net recovery linked to local tourism and fisheries activities. For Wakatobi National Park, stronger tourism flows create opportunities to combine waste service fees with recycling and upcycled product development. In both sites, integrating waste management with livelihood initiatives can reduce marine debris while creating economic incentives for environmental stewardship within marine protected areas.

³ <https://fmplgilitrawangan.com/>

⁴ Galang Anugrah, R. (2022). Interconnection between Business and Activism in Managing Waste: Case in Community-Based Waste Organization in Small Island Tourism of Gili Trawangan, Indonesia. *Journal of Indonesian Tourism and Development Studies*, Vol. 10. No. 2.

⁵ Net-Works Programme Case Study.

Table 16. Feasibility assessment matrix

Criteria	Community Seaweed Processing and Market Stabilisation	Responsible Fisheries Supply Chain	Tourism & Waste Management
Community Readiness	High – Existing seaweed farmers, active producer groups and multiple small-scale processors already operating	High – Existing fisher groups and co-operative system	High – Established tourism group and homestay system
Market Potential	Medium–High – Existing demand for processed seaweed products with opportunities to expand to regional markets beyond tourism	High – Access to export and premium seafood markets	Medium–High – Growing tourism demand but still seasonal
Conservation Contribution	Medium – Reduces pressure on reef fisheries	Very High – Directly supports sustainable fishing practices	High – Supports reef protection and waste reduction
Institutional Complexity	Medium – Requires coordination across producer groups, WWF initiatives, processors, tourism actors, and distributors	Medium–High – Requires coordination across fishers, <i>koperasi</i> , and buyers	Medium – Requires coordination across tourism and waste actors
Investment Requirement	Low–Medium – Focus on coordination, packaging improvement, and distribution networks rather than new infrastructure	Medium – Cold storage, traceability system	Medium – Digital tools, waste system reactivation
Time to Impact	Short–Medium – Existing products and processors allow relatively quick market expansion once coordination improves	Medium – Requires system and behaviour change	Medium – Requires system and behaviour change
Scalability Potential	High – Can expand across Wakatobi	High – Can be replicated across reef fisheries	Medium–High – Scalable within Tomia and nearby villages
Risk Level	Medium – Market competition among producers and logistics constraints may affect expansion	Medium	Medium

Interpretation for pilot implementation

The assessment indicates that all three schemes are feasible for implementation, but with different entry points and levels of complexity:

- **The Seaweed Value Chain scheme** also shows medium-high feasibility, as several producer groups and processors already exist. Its main focus is improving coordination across the value chain and expanding markets for existing products. Because it builds on ongoing activities and existing enterprises, this scheme could be implemented in parallel with other initiatives while generating relatively quick economic benefits for coastal communities.

- The **Responsible Fisheries Supply Chain** offers the strongest contribution to conservation objectives, as it directly targets sustainable fishing practices and traceability. However, it requires more complex coordination between multiple actors and systems, making it suitable as a **strategic pilot with higher impact but moderate implementation complexity**.
- The **Tourism and Waste Management scheme** builds on an already functioning community tourism system and offers strong potential to diversify livelihoods while addressing environmental challenges. Its feasibility is supported by existing structures, but its success depends on effective market expansion and coordination across villages. This scheme is suitable as a **demonstration pilot for integrated livelihood and environmental management**.

Overall, the three schemes are complementary and can be implemented in parallel, with different roles:

- **Seaweed** → quick-win and scalable livelihood support
- **Fisheries** → high-impact conservation-linked intervention
- **Tourism and Waste** → integrated socio-environmental model

This combination provides a balanced portfolio of pilot interventions that address both livelihood improvement and conservation outcomes within Wakatobi National Park.

Box 2. Future opportunity: Blue carbon development in Wakatobi National Park

Rationale

Mangrove ecosystems in Wakatobi National Park provide important ecological functions, including coastal protection, nursery habitats for fisheries, and carbon sequestration. These ecosystems also present a long-term opportunity for sustainable financing through blue carbon mechanisms, which can complement community-based livelihood initiatives. Field observations and existing initiatives indicate that areas such as Kaledupa and Wangi-Wangi (Liya–Mola–Kapota) have both ecological potential and community presence suitable for future blue carbon development.

Why Blue Carbon is Relevant for Wakatobi

- Supports mangrove protection and restoration aligned with conservation objectives
- Strengthens fisheries productivity through nursery habitat functions
- Provides potential long-term financial incentives for communities
- Complements existing livelihood schemes such as sustainable fisheries and eco-tourism

Key Consideration

Blue carbon should be understood as a long-term financing mechanism, not an immediate income-generating activity. Developing a viable blue carbon project requires:

- Clear tenure and management rights
- Long-term community commitment
- Technical systems for measurement, reporting, and verification (MRV)
- Partnerships with project developers, aggregators, or carbon market actors

Proposed Readiness Pathway		
Phase	Key Actions	Expected Outcome
Short Term (1–2 years)	- Identify priority mangrove sites (e.g., Kaledupa, Liya–Mola–Kapota) - Conduct community awareness and capacity building - Strengthen protection and reduce local pressures (e.g., cutting, waste)	Improved local governance and community readiness
Medium Term (3–5 years)	- Conduct baseline assessments (carbon stock, ecosystem condition) - Establish community-based management groups - Explore partnerships with blue carbon developers or NGOs	Technical and institutional readiness for carbon projects
Long Term (5+ years)	- Develop and register blue carbon projects - Access voluntary carbon markets or results-based financing - Channel benefits to communities	Sustainable financing mechanism established

Potential Partners	
Actor	Potential Role
Balai TN Wakatobi	Align blue carbon with park zoning and conservation priorities
DKP (District/Provincial)	Support community engagement and coastal management
Bappeda	Integrate into regional development planning
NGOs (e.g., YKAN, Blue Forests, Rare)	Technical support, community facilitation
Carbon project developers	MRV, certification, and market access
Donors (e.g., World Bank, BPF, GCF-related programmes)	Initial funding and technical assistance

Strategic Positioning under ENMAPS

Under the ASEAN ENMAPS initiative, blue carbon can be positioned as a “future financing pathway”, where early actions focus on:

- strengthening community-based mangrove management;
- integrating mangrove protection and restoration into livelihood schemes, particularly tourism; and
- preparing institutional and technical readiness.

This approach ensures that blue carbon development is grounded, realistic, and aligned with long-term conservation and livelihood goals.

5.2. Proposed Livelihood Schemes for Togean Islands National Park

Three pilot livelihood schemes are proposed for Togean Islands National Park:

1. Integrated Community-Based Fisheries and Eco-Tourism Scheme
2. Strengthening Sustainable Reef Fisheries Livelihoods through Market-Based Incentives
3. Integrated Anchovy and Fish Fattening Livelihood Scheme

The proposed livelihood schemes for TNKT are designed to align with ASEAN ENMAPS project priorities on fisheries sustainability, ecosystem resilience, and financial sustainability, while responding to site-specific constraints such as limited market access, high logistical costs, and weak institutional coordination.

The schemes prioritise strengthening existing fisheries systems as the primary entry point, complemented by value addition, market linkage improvements, and gradual diversification into tourism and creative economy activities. This phased approach ensures feasibility, scalability, and alignment with local socio-economic conditions.

Ampana serves as a key logistics and aggregation hub for products from the Togean Islands. In addition to its role in fisheries distribution, existing platforms such as the Rumah Badan Usaha Milik Negara in Ampana provide an entry point for marketing locally produced goods, including processed fisheries products, handicrafts, and tourism-related items. Strengthening linkages between community groups in TNKT and such platforms can support improved product visibility, market access, and value addition.

5.2.1 Integrated community-based fisheries and eco-tourism scheme

Location: Kadoda Village – Pulau Papan, Togean Islands National Park

Target Group:

- Small-scale fishers (Kogito and associated groups)
- Local fish collectors (± 4 in Kadoda)
- Homestay owners and tourism actors
- Women's groups (processed fish, food, souvenirs)
- Village government (including BUMDes if already available)

Context and Rationale

Kadoda–Pulau Papan presents a unique opportunity to develop integrated livelihood systems, given the presence of both active small-scale fisheries and emerging tourism activities. The village has an established octopus seasonal closure (system supported by the Jaring Advokasi Pengelolaan Sumber Daya Alam [JAPESDA]), functioning homestays with relatively good quality, and existing community-based economic activities, including fish processing and small-scale agriculture.

Despite these enabling conditions, fisheries and tourism currently operate as **parallel systems with limited integration**. Fisheries remain dependent on informal market chains dominated by local collectors and external logistics, while tourism activities are largely limited to snorkelling and homestay stays without strong linkage to local livelihoods.

In Kadoda and surrounding islands, fishing activities are highly dependent on weather conditions and seasonal availability of marine resources. Limited electricity supply further constrains the use of cold storage, highlighting the importance of developing low-energy processing and alternative livelihood options (e.g., drying, smoking, fish floss).

At the same time, village-level environmental challenges, particularly unmanaged waste and poor public space conditions contribute to marine litter leakage and negatively affect both fisheries resources and visitor experience. Given that coral reef health and coastal cleanliness are essential for both sectors, improving environmental management is a critical cross-cutting priority.

The integration of fisheries and tourism provides an opportunity to:

- diversify income sources;
- strengthen local value capture;
- reduce dependency on external markets; and
- align economic incentives with conservation practices.

By combining fisheries-based experiences, local seafood consumption, and improved village environmental management, Kadoda–Pulau Papan can be positioned as a **community-based island destination where livelihoods and conservation are mutually reinforcing**.

Table 17. Implementation roadmap for integrated community-based fisheries and eco-tourism scheme

Phase	Key Activities	Milestones
Short Term (0–12 months)	Conduct community awareness sessions on tourism–fisheries–waste linkages, ensuring participation of both men and women involved in fisheries, tourism, and household enterprises.	Community members understand linkages between tourism, fisheries, and environmental management.
	Identify tourism and fisheries assets (open–close areas, homestays, routes) through participatory village mapping involving fishers, tourism actors, and community groups.	Key tourism and fisheries assets mapped and documented.
	Develop pilot tourism packages integrating fisheries experiences such as: • fishing trips, • seafood preparation, • trip to Malenge for endemic species watching, and • cultural activities (salt making with Bobongko tribe).	Pilot tourism package tested with initial visitors.
	Establish a simple waste management system in key tourism zones involving community waste groups and participating households.	Visible improvement in cleanliness in key tourism areas.

Phase	Key Activities	Milestones
	Establish village-level governance arrangements (Perdes or community agreement) to coordinate tourism, fisheries, and environmental management.	Village agreement established to support integrated livelihood management.
	Engage 2–3 collectors as partners in the integrated seafood supply system supporting tourism demand.	Initial partnership established between fishers, collectors, and tourism actors.
	Pilot fisheries–tourism linkage by supplying seafood from local fishers to homestays and tourism activities.	Initial fisheries–tourism supply linkage established.
Medium Term (1–2 years)	Expand tourism packages into multi-day, experience-based itineraries combining fisheries, cultural, and environmental activities.	Regular tourism packages offered to visitors.
	Strengthen coordination between fishers, collectors, tourism actors, and village institutions through regular coordination meetings.	Stronger coordination between key actors established.
	Improve waste management system village-wide, including alignment with village budget allocation (Dana Desa).	Waste management system functioning across the village.
	Introduce basic incentive mechanisms (e.g., priority access to tourism benefits for households supporting conservation and waste management).	Incentive mechanism piloted and adopted by participating households.
	Integrate fisheries storytelling and local knowledge into tourism experiences.	Tourism experiences enriched with fisheries culture and conservation narratives.
	Increase local sourcing of seafood and food products for tourism activities, including household-based culinary services.	Higher share of tourism food supply sourced locally.
	Improve public infrastructure (bridges, pathways) through coordination with local government.	Improved accessibility and visitor experience.
Long Term (2–3 years)	Scale the integrated model to include more households and community groups.	Increased community participation in integrated livelihood activities.
	Strengthen destination identity combining fisheries culture, eco-tourism, and conservation.	Kadoda recognised for community-based fisheries and eco-tourism experiences.
	Develop stable partnerships with external tourism operators and seafood markets.	Stable tourism and seafood market linkages established.
	Position Kadoda as a pilot model for integrated coastal livelihoods within Togean National Park.	Kadoda recognised as a demonstration site for integrated livelihood development.

Operational pathway

1. Integrating fisheries into tourism experience

Fisheries activities, particularly the octopus open–close system, can be transformed into structured tourism experiences that enhance visitor engagement while reinforcing conservation practices. Rather than introducing new activities, the approach focuses on packaging existing fisheries practices into guided experiences, including snorkelling in designated areas, observing

harvesting in selected areas, and learning about community-based resource management.

Implementation requires coordination with Kogito, JAPESDA, and Balai TNKT to identify suitable locations and timing, and to ensure that tourism activities do not interfere with ecological objectives. Selected community members can be trained as local guides, enabling fishers to participate directly in tourism while maintaining their primary livelihoods.

Key Actions

- Develop fisheries-based tourism packages (snorkelling, harvesting observation, storytelling)
- Define operational guidelines for tourism within managed areas
- Train fishers as local guides
- Integrate conservation messaging into visitor experience

Potential Partners

Table 18. Potential partners for integrating fisheries into tourism experience

Institution	Role
Kogito group	Fisheries management and guiding
JAPESDA	Technical coordination
Balai TNKT	Conservation oversight
Homestay owners	Tourism operations
ASEAN ENMAPS Project	Facilitation

Note: JAPESDA = Jaring Advokasi Pengelolaan Sumber Daya Alam

2. Strengthening local market linkages between fisheries and tourism

Tourism activities provide an immediate and localised market for fisheries products, which can complement existing supply chains without replacing the role of collectors. By linking fishers, collectors, and homestay operators, part of the catch can be directed toward local consumption, increasing value retention within the village.

Fresh seafood can be supplied directly to homestays, while processed products can be marketed as tourism goods/souvenirs. This creates an additional demand stream, reduces reliance on external markets, and improves income stability for both fishers and processors. Importantly, collectors remain part of the system as aggregation and distribution actors, ensuring that existing market functions are maintained while improving coordination and transparency.

Key Actions

- Establish coordination between fishers, collectors, and homestays

- Supply fresh seafood for tourism consumption
- Promote processed fish products as souvenirs
- Maintain balanced flow between local and external markets

Potential Partners

Table 19. Potential partners for strengthening local market linkages between fisheries and tourism

Institution	Role
Fishers and collectors	Supply and aggregation
Homestay owners	Local demand
Women's groups	Processing and products
Village government	Coordination
ASEAN ENMAPS Project	Facilitation

3. Improving village environmental management to support tourism and fisheries

Environmental quality is a foundational requirement for both tourism and fisheries. Establishing a simple, community-managed waste system helps reduce marine litter, improve village cleanliness, and enhance visitor experience.

The system should focus on practical and achievable measures, including waste collection points, basic segregation, and regular clean-up routines. Priority should be given to tourism zones and coastal areas where visibility and impact are highest. **Livestock waste should also be managed spatially to reduce exposure in public areas.** These improvements contribute directly to maintaining reef health, reducing pollution, and strengthening the village's positioning as a clean and environmentally responsible destination.

Key Actions

- Establish village-level waste collection and segregation system
- Organise regular clean-up activities
- Reduce waste leakage into marine areas
- Manage livestock waste in tourism zones

Potential Partners

Table 20. Potential partners for improving village environmental management to support tourism and fisheries

Institution	Role
Village government	Coordination and funding
Community groups	Implementation
Balai TNKT	Environmental guidance
District agencies (e.g., Environmental Agency)	Technical support
ASEAN ENMAPS Project	Facilitation

4. Enhancing tourism value through local food and household practices

Local food systems, including small-scale household gardening and fisheries products, can enhance tourism experience by providing authentic and place-based elements. While production remains limited, integrating locally sourced food into homestay services and visitor activities strengthens the connection between tourism and daily life.

This approach supports small-scale income diversification while contributing to a distinctive tourism identity based on simplicity, self-sufficiency, and community living. It also reinforces sustainability narratives linked to resource use and local practices.

Key Actions

- Integrate local seafood and vegetables into homestay meals
- Develop simple village walk experiences (gardens and daily life)
- Promote local food as part of tourism identity

Potential Partners

Table 21. Potential partners for enhancing tourism value through local food and household practices

Institution	Role
Homestay owners	Implementation
Women's groups	Food preparation
Village government	Coordination
District Agriculture Office	Technical support
ASEAN ENMAPS Project	Facilitation

5. Strengthening Policy Implementation and Incentive Mechanisms

The sustainability of integrated fisheries–tourism development in Kadoda–Pulau Papan depends not only on community activities, but also on the presence of clear rules, incentives, and institutional support mechanisms. Without these, improvements in fisheries management, tourism practices, and waste management are unlikely to be sustained over time.

At the village level, policy implementation can begin through the development or strengthening of village regulations (*Perdes*) and community agreements, particularly in relation to waste management, reef-friendly tourism practices, and compliance with open–close systems. These instruments provide a formal basis for collective action and help ensure that all community members follow agreed standards.

In addition to rules, incentive mechanisms are essential to encourage participation and compliance. Rather than relying on enforcement alone, incentives can be designed to provide tangible benefits to households and groups that adopt sustainable practices. For example, tourism-related opportunities, such as homestay participation, guiding roles, or involvement in tourism supply chains, can be prioritised for groups that actively comply with fisheries management and waste management practices.

Over time, these mechanisms can be further strengthened through performance-based approaches, where support from government or partners is linked to measurable outcomes, such as improved reef conditions, reduced waste leakage, or increased tourism quality. This creates a stronger linkage between conservation outcomes and economic benefits.

Key Actions

- Develop village regulations (*Perdes*) and community agreements on:
 - waste management practices
 - reef-friendly tourism
 - compliance with open–close areas
- Introduce incentive mechanisms, such as:
 - priority access to tourism opportunities
 - support for compliant groups (i.e., equipment, training, promotion)
- Integrate sustainable practices into:
 - district tourism and fisheries programmes
 - Village Fund (Dana Desa) allocations
- Establish simple monitoring and performance tracking:
 - waste reduction

- fisheries compliance
- tourism quality

6. Market expansion strategy

Market expansion for Kadoda–Pulau Papan should focus on increasing demand through clear positioning, targeted visitor segments, and integrated fisheries–tourism experiences, rather than relying solely on infrastructure development.

Table 22. Market expansion strategy for Kadoda–Pulau Papan

Phase	Positioning (What we are selling)	Product Development (What visitors experience)	Market Access (How visitors come)
Short-Term	• Position Kadoda–Pulau Papan as a clean, community-based island experience • Differentiate from resort tourism through: ✓ fisheries-based lifestyle ✓ community interaction ✓ simple and authentic experiences	• Structure existing activities into simple experiences: ✓ homestay stays ✓ snorkelling in fisheries-based activities (open–close system storytelling and observation) • Introduce “from sea to table” experience linking local catch to meals	• Use existing channels: ✓ TNKT visitors ✓ NGO networks (e.g., Japesda) ✓ word-of-mouth ✓ Tourism Agency promotion • Focus on small, manageable visitor flows
Medium-Term	• Position as a complementary destination to diving/resort tourism • Promote as a community-based alternative, not a competitor • Coordination with local government about electricity and internet connection. This reliability will influence	• Develop bundled packages (2D1N, 3D2N), combining: ✓ marine activities ✓ fisheries experiences ✓ village-based activities • Integrate local products: ✓ seafood for homestay meals	• Target specific segments: ✓ eco-conscious travellers ✓ open-trip/small groups ✓ researchers/NGOs • Strengthen linkage with: ✓ Ampana/Gorontalo entry point ✓ Banggai entry point

Phase	Positioning (What we are selling)	Product Development (What visitors experience)	Market Access (How visitors come)
	visitor experience, online promotion, and booking systems.	✓ processed products (octopus sambal, fish floss)	✓ Travel agents & boat operators ● Include in multi-stop itineraries
Long-Term	● Develop as a model fishery–tourism village in Togeian recognised for: ✓ community-based fisheries management ✓ clean coastal environment ✓ authentic village experience	● Strengthen experience identity through: ✓ open–close system as tourism feature ✓ clean village (low waste) ✓ local food security systems ● Promote “tourism with impact” (learning + contribution)	● Expand visibility through: ✓ repeat visitors & referrals ✓ eco-tourism networks ● Maintain controlled, small-scale growth to ensure sustainability

7. Role of the ASEAN ENMAPS Project in facilitating partnerships

The ASEAN ENMAPS initiative can play an important role in facilitating coordination between fisheries groups, tourism actors, village government, and supporting institutions to enable the integration of fisheries, tourism, and environmental management in Kadoda–Pulau Papan.

Given that both fisheries and tourism systems already exist but operate independently, the ASEAN ENMAPS project can act as a **neutral facilitator** to bridge these sectors, strengthen coordination, and support practical implementation of integrated livelihood approaches without replacing existing roles.

Key Roles for the ASEAN ENMAPS Project

- Facilitate coordination between Kogito, JAPESDA, homestay owners, and village government to integrate fisheries-based experiences into tourism packages
- Support the development of practical tourism products, including fisheries-based experiences (e.g., snorkelling and harvesting observation linked to open–close systems)
- Facilitate dialogue with Balai TNKT and JAPESDA to define operational guidelines for tourism activities within or adjacent to managed fisheries areas

- Promote coordination between fishers, collectors, and homestay operators to strengthen local seafood supply chains linked to tourism demand
- Support the design and implementation of simple, community-based waste management systems to reduce marine litter and improve village cleanliness
- Facilitate collaboration with district agencies (Tourism Office, Fisheries Office, Environmental Agency) to align village-level initiatives with government programmes
- Support capacity building for community members in guiding, basic hospitality, and environmental awareness
- Document pilot implementation and lessons learned to support replication in other areas of Togean Islands National Park

Through these actions, the integrated fisheries and tourism scheme can strengthen local livelihoods, improve market access, enhance visitor experience, and contribute to marine conservation through reduced waste leakage and increased community engagement in sustainable resource management.

5.2.2. Strengthening sustainable reef fisheries livelihoods through market-based incentives

Location: Kabalutan Village, Togean Islands National Park

Target groups include:

- Small-scale reef fishers (Bajo households)
- Local fish collectors (e.g., Daeng Haris)
- Informal community leaders and local champions (e.g., Mr. Usman)

Context and Rationale

Fisheries remain the primary livelihood in Kabalutan, particularly among Bajo communities who rely heavily on reef-associated species for daily income. However, income from reef fisheries is often low and unstable, influenced by fluctuating market prices, limited market access, and dependence on local collectors.

In addition, some fishing practices remain **non-selective or environmentally harmful**, which can reduce long-term productivity of reef ecosystems and further weaken livelihood sustainability.

Despite these challenges, the existing fisheries system in Kabalutan presents important opportunities:

- fishers are not fully tied to single buyers, allowing flexibility in market engagement;
- multiple collectors operate locally, creating competition; and
- fisheries activities are well-established and culturally embedded.

Rather than introducing new livelihood models, there is a clear opportunity to improve income within the existing system by linking better fishing and handling practices with improved market incentives. This scheme therefore focuses on:

- strengthening post-harvest handling and product quality,
- introducing simple market-based incentives for sustainable practices, and
- working with existing collectors to improve value chain performance.

By doing so, the scheme supports both **livelihood improvement and long-term sustainability of reef resources**, without requiring complex interventions or major infrastructure investment.

Table 23. Implementation roadmap to strengthen sustainable reef fisheries livelihoods through market-based incentives

Phase	Key Activities	Milestones
Short-Term	Conduct baseline assessment of fishing practices, target species, supply chains, and roles of both men and women in fisheries-related activities such as fish handling, processing, and marketing.	Baseline understanding of fisheries practices, household roles, and market chains established.
	Identify and engage pilot fishers and 1–2 local collectors willing to participate in the scheme.	Pilot fisher group formally established.
	Introduce basic fish handling improvements including icing, sorting, and storage practices, with training involving both fishers and women engaged in fish handling or household processing.	Improved handling practices adopted by participating households.
	Define simple criteria for “preferred fish” (e.g., non-destructive fishing methods and basic size considerations) through consultation with fishers, collectors, and community members.	Community-agreed criteria for responsible fish products established.
	Pilot incentive mechanism such as price differentiation or priority buying for compliant fishers.	First incentive-based transactions conducted.
Medium-Term	Expand participation to additional fishers and collectors in surrounding communities.	Increased number of participating fishers.
	Strengthen aggregation and coordination among fishers through simple group arrangements and regular coordination meetings involving community representatives.	Fisher coordination system functioning.
	Improve consistency of fish supply and product quality through better handling and coordination with collectors and households involved in fish processing.	Stable supply of quality reef fish established.
	Establish regular buyer linkage (e.g., buyers based in Luwuk or Makassar).	Regular buyer relationships formed.

Phase	Key Activities	Milestones
	Introduce simple tracking of compliance and product flow within the pilot supply chain, with support from fisher groups and community representatives.	Basic monitoring of responsible fishing practices implemented.
Long-Term	Strengthen market positioning of sustainable reef fish products linked to community-based fisheries management.	Recognised supply chain for responsible reef fish products established.
	Pilot small-scale diversification of fisheries products based on simple processing and local feasibility.	Feasibility of diversified fisheries products assessed through pilot testing and buyer feedback.
	Explore premium or differentiated market channels (domestic or export).	Access to higher-value markets initiated.
	Integrate fisheries supply chain with tourism demand through local seafood sourcing and community-based culinary services.	Tourism sector sourcing seafood from participating fishers and households.
	Embed the scheme within local governance frameworks and district fisheries programmes while ensuring community participation in coordination mechanisms.	Scheme integrated into local fisheries management and development programmes.
	Adaptation through renewable energy or low-energy sources	Renewable energy cold storage

Operational pathway

1. Improving Post-Harvest Handling and Product Quality

One of the main constraints in Kabalutan fisheries is the limited attention to post-harvest handling, which affects product quality and ultimately reduces selling price. Improving handling practices represents a **low-cost, high-impact intervention** that can directly increase fisher income without increasing fishing effort.

Initial improvements should focus on:

- basic sorting by species and size, and
- minimising physical damage during handling.

These practices can be introduced gradually through demonstration and peer learning, ensuring that they are practical and adapted to local conditions.

Key Actions

- Train fishers on simple quality handling techniques
- Demonstrate price differences linked to improved quality

Potential Partners

Table 24. Potential partners for improving post-harvest handling and product quality

Institution / Actor	Role
Village Government (Kabalutan)	Mobilise fishers and support local coordination
Local fishers (Bajo community)	Adoption of improved handling practices
Local fish collectors	Provide ice, reinforce quality requirements
District Fisheries Office (Tojo Una-Una)	Technical support on post-harvest handling
ASEAN ENMAPS Project	Facilitation, training support, and community engagement

2. Introducing market-based incentives for sustainable practices

To encourage more sustainable fishing practices, the scheme introduces a **simple incentive mechanism**, where fish that meet agreed criteria are prioritised or receive better prices. These criteria should remain practical and easy to apply, such as:

- use of non-destructive fishing methods,
- basic size considerations, and
- acceptable handling quality.

Rather than relying on enforcement, this approach uses **market incentives to influence behaviour**, allowing fishers to gradually transition toward better practices while maintaining their livelihoods.

Key Actions

- Define simple and locally agreed criteria for eligible fish
- Pilot price differentiation or priority buying system
- Communicate clear benefits to participating fishers

Potential Partners

Table 25. Potential partners for introducing market-based incentives for sustainable practices

Institution / Actor	Role
Local fish collectors	Apply price differentiation and purchasing criteria
Village Government	Facilitate agreement and socialisation of criteria
Balai TNKT	Ensure alignment with sustainable fishing practices
ASEAN ENMAPS Project	Facilitate design of incentive mechanism and coordination

3. Strengthening the role of local collectors as market partners

Local collectors play a central role in the fisheries value chain and should be engaged as **partners rather than replaced**. Given the presence of multiple collectors in Kabalutan, there is an opportunity to work with selected actors to pilot improved practices. Collectors can contribute by:

- prioritising purchase of higher-quality fish,
- supporting basic handling improvements (e.g., ice provision), and
- linking fishers to external buyers (Togean → Pagimana → Luwuk).

Positioning collectors as part of a **more efficient and sustainable supply chain** reduces resistance and increases feasibility of implementation.

Key Actions

- Identify and engage 1–2 pilot collectors who already have a sense of sustainability
- Establish agreements on quality and sourcing criteria
- Support collectors in accessing better market channels

Potential Partners

Table 26. Potential partners for strengthening the role of local collectors as market partners

Institution / Actor	Role
Local fish collectors	Primary intermediaries and aggregation points
PT Inti Jaya Bahari Luwuk and Indotropic Fishery Luwuk	Initial aggregation hub and pilot buyer
District Fisheries Office	Support collector engagement and coordination
ASEAN ENMAPS Project	Facilitate partnership agreements and pilot setup

4. Strengthening market linkages and supply coordination

Improving income requires not only better practices, but also more reliable access to buyers. The scheme therefore focuses on strengthening connections with existing market hubs, particularly in Luwuk and Makassar. This involves:

- improving aggregation of fish supply,
- ensuring consistency in quality and volume, and
- facilitating communication between collectors and buyers.

Over time, this can lead to more stable pricing and reduced dependency on opportunistic sales.

Key Actions

- Facilitate linkage with regional buyers (Luwuk / Makassar)
- Improve coordination among fishers and collectors
- Establish regular supply schedules

Potential Partners

Table 27. Potential partners for strengthening market linkages and supply coordination

Institution / Actor	Role
DKP Province Central Sulawesi	Coordinate for buyers in Luwuk and Palu
PT Inti Jaya Bahari Luwuk	Primary buyer in pilot and early scaling phase
PT Chen Woo Fishery	Medium-term buyer for consistent supply
PT Kenndo Fisheries Indonesia	Buyer for sustainability-linked sourcing
PT Prima Bahari Inti Lestari	Long-term scaling and export market
Hamparan Segara Niaga Group	Cold chain and logistics support (via buyers)
Local collectors	Coordination and aggregation
ASEAN ENMAPS Project	Facilitate buyer linkage and coordination

5. Integrating fisheries with local market opportunities

In the longer term, part of the fish supply can be directed toward **local tourism demand**, particularly in nearby islands such as Pulau Enam or Kadoda. This creates an additional market channel and increases local value retention. This integration supports:

- diversification of income sources, and
- stronger linkage between fisheries and tourism development.

Key Actions

- Link fish supply to local tourism operators and homestays
- Promote locally sourced seafood as part of tourism experience
- Encourage local consumption of sustainable fish products

Potential Partners

Table 28. Potential partners for integrating fisheries with local market opportunities

Institution / Actor	Role
Homestay operators in nearby islands	Local buyers of fresh seafood
Village Governments	Facilitate inter-island coordination
Tourism groups (Pokdarwis)	Integration of seafood into visitor experience
ASEAN ENMAPS Project	Facilitate cross-sector linkage (fisheries–tourism)

6. Market expansion strategy

Table 29. Market expansion strategy for strengthening sustainable reef fisheries livelihoods through market-based incentives

Phase	Positioning (What we are selling)	Product Development (What is offered)	Market Access (How markets are reached)
Short-Term	Reliable supply of quality reef fish from small-scale fishers	Improved handling and sorting of fresh fish meeting basic quality criteria	Existing collectors and local buyers; pilot linkage with selected buyers
Medium-Term	Consistent and traceable reef fish supply from Kabalutan	Aggregated supply with consistent quality; introduction of basic product differentiation	Strengthened linkage to Luwuk and Makassar buyers; more stable buyer relationships
Long-Term	Sustainably sourced reef fish linked to community-based practices	Differentiated products (quality-based, potentially sustainability-linked); integration with tourism demand	Diversified channels including regional buyers, tourism market, and potential premium markets

7. Role of the ASEAN ENMAPS Project in facilitating partnerships

The ASEAN ENMAPS initiative can play a key role in facilitating coordination between fishers, collectors, government agencies, and market actors to support the development of this incentive-based fisheries system.

Key Roles for the ASEAN ENMAPS Project

- Facilitate engagement between fishers and selected collectors for pilot implementation
- Support development of simple incentive mechanisms and quality criteria
- Facilitate linkage with regional buyers and market actors
- Coordinate with Balai TNKT to ensure alignment with conservation objectives
- Engage district fisheries office and related agencies for programme integration
- Support monitoring and documentation for potential scaling

Through these actions, the scheme provides a **practical pathway to improve income stability**, strengthen market access, and encourage more sustainable fishing practices, while maintaining alignment with local conditions and existing value chains in Togean Islands National Park.

5.2.3 *Strengthening small-scale fish fattening and market linkages through BUMDes-based fisheries model*

Location: Pulau Enam, Togean Islands National Park

Target Groups:

- Small-scale fishers (demersal, octopus, pelagic)
- *Bagan* fishers (anchovy producers)
- BUMDes and small-scale aquaculture group (trevally fattening)
- Local fish collectors (Pak Memet, Pak Gusman)

Context and Rationale

Pulau Enam is characterised by a fisheries-dependent economy, with most households engaged in small-scale fishing targeting demersal species such as grouper (*sunu*), octopus, and trevally (*bubara*). The existing value chain is functional but highly dependent on collectors, with limited value addition at the community level and vulnerability to price fluctuations and delayed payments.

At the same time, small-scale anchovy fisheries using *bagan* (some kind of lift net) are already present and play a dual role: as a low-value product for sale and as feed for fish fattening. A village-level initiative led by the BUMDes has recently started fish fattening for trevally, supported by village funding under the national food security programme. However, the system remains fragmented, with no structured linkage between its feed supply, aquaculture activities, and market access.

Logistical constraints—including limited ice production, irregular electricity, and dependence on external buyers—further reduce efficiency and value capture. Financially, both fishers and collectors operate on informal credit systems, often relying on short-term borrowing to sustain operations.

This scheme responds to these challenges by integrating existing fisheries activities into a **local food security and livelihood system**, where anchovy production supports fish fattening, and both contribute to improved income stability and reduced dependency on external inputs. The approach aligns with ASEAN ENMAPS project priorities by strengthening fisheries sustainability, enhancing local value chains, and linking livelihood improvements with conservation outcomes.

Table 30. Implementation roadmap for strengthening small-scale fish fattening and market linkages through BUMDes-based fisheries model

Phase	Key Activities	Milestones
Short Term (0–1 year)	Map existing anchovy production, fish fattening activities, and roles of households involved in anchovy drying, processing, and marketing.	Baseline understanding of anchovy production and fish fattening activities established.
	Improve basic drying and handling of anchovy through simple training involving <i>bagan</i> fishers and households responsible for drying and processing.	Improved drying quality and reduced spoilage of anchovy.
	Establish informal coordination between <i>bagan</i> fishers, BUMDes, and community members involved in anchovy processing and fish fattening activities.	Initial coordination between actors established.
	Strengthen simple record-keeping on production, feed use, and sales at household and BUMDes levels.	Basic production and sales records maintained.
Medium Term (1–2 years)	Stabilise supply of anchovy for fish fattening through improved coordination between <i>bagan</i> fishers, processors, and BUMDes.	Anchovy used consistently as local feed for fish fattening.
	Improve fish fattening practices including feeding schedule, cage maintenance, and survival rate management.	Increased fish growth and survival rates.
	Strengthen engagement with collectors and traders for both fresh fish and dried anchovy products.	More stable market linkages established.
	Introduce simple financial tracking and transparency mechanisms at BUMDes level involving participating households.	Improved financial monitoring and income tracking.
Long Term (2–3 years)	Expand production scale through additional cages where feasible and supported by market demand.	Increased production capacity for fish fattening.
	Develop differentiated products such as graded fish and improved-quality dried anchovy for market sales.	Higher-value products introduced to the market.
	Strengthen direct linkage with buyers in Ampang, Luwuk, or Makassar through collector networks and BUMDes coordination.	Integrated local production and marketing system functioning.
	Promote household participation in anchovy processing and local seafood supply chains linked to tourism and local markets.	Increased household income and improved bargaining position with buyers.

Operational Pathway

1. Strengthening the anchovy supply as a local feed system

Anchovy production in Pulau Enam already exists through *bagan* fishing, but its role in supporting local aquaculture remains informal and unstructured. Strengthening this linkage requires organising anchovy as a reliable and consistent feed source for fish fattening activities.

Rather than introducing new production systems, the focus should be on improving handling, drying, and allocation of anchovy for dual purposes: market sales and local feed use. Simple improvements in drying techniques and storage can significantly reduce spoilage and increase usability as feed. At the same time, coordination between *bagan* fishers and BUMDes can ensure that a portion of anchovy production is prioritised for local use, reducing dependence on external feed sources.

Key Actions

- Improve anchovy drying and handling practices
- Establish informal agreement between *bagan* fishers and BUMDes for feed supply
- Introduce simple storage practices for dried anchovy

Potential Partners

Table 31. Potential partners for strengthening small-scale fish fattening and market linkages through BUMDes-based fisheries model

Institution	Role
BUMDes Pulau Enam	Coordination of feed use and aquaculture activities
<i>Bagan</i> fishers	Anchovy production and supply
Village government	Facilitation and support
District Fisheries Office	Technical guidance on processing and handling

2. Improving fish fattening efficiency and value

Fish fattening activities (particularly *bubara*) have already been initiated through village-level efforts, but remain limited in scale and efficiency. Strengthening this component focuses on improving survival rates, optimising feeding practices, and ensuring consistent production cycles.

Using locally sourced anchovy as feed reduces operational costs and improves economic feasibility. At the same time, better coordination and basic technical improvements can enhance growth rates and product quality, allowing fish to be sold at higher grades.

Key Actions

- Feeding Practices (Core Improvement)
 - Establish a fixed feeding schedule (2 times per day – morning and late afternoon)
 - Use chopped or portioned anchovy to ensure easier consumption and reduce waste

- Apply a simple feeding ratio (e.g., $\pm 5\text{--}10\%$ of estimated fish biomass per day, adjusted visually)
- Avoid overfeeding by observing leftover feed in cages
- To address potential environmental impacts from fish waste accumulation, the system can explore the integration of simple multi-trophic aquaculture approaches, where species such as seaweed or filter feeders are used to absorb excess nutrients. This approach can help improve water quality while creating additional livelihood opportunities, without requiring complex system changes.
- Cage Management and Monitoring
 - Conduct daily visual checks on:
 - ✓ fish behaviour (active vs weak)
 - ✓ water clarity
 - ✓ presence of dead fish
 - Remove dead fish immediately to prevent disease spread
 - Clean cage nets **every 1–2 weeks** to maintain water flow
 - Avoid overstocking (start with low density to reduce risk)
- Production Planning
 - Record basic data:
 - ✓ number of fish stocked
 - ✓ estimated size at stocking
 - ✓ feeding frequency
 - ✓ mortality
 - Define **target harvest size** (based on market preference, e.g., >1.5 kg for *bubara*)
 - Plan harvest timing based on:
 - ✓ fish size
 - ✓ buyer demand
 - ✓ weather/logistics conditions
- Post-Harvest Handling (Value Improvement)
 - Coordinate with collectors before harvest to ensure **immediate pickup**
 - Use **ice immediately after harvest** to maintain quality
 - Separate fish by size (basic grading) before sale

Potential Partners

Table 32. Potential partners for improving fish fattening efficiency and value

Institution	Role
BUMDes Pulau Enam	Management of fattening operations
District Fisheries Office	Provide simple technical guidance (feeding ratio, cage density, health monitoring)
Local collectors (Pak Memet, Pak Gusman)	Coordinate harvest timing and market linkage for harvested fish
Balai TNKT	Ensure alignment with TNKT zonation and conservation practices

3. Strengthening market linkages while maintaining existing collector system

The fisheries market system in Pulau Enam is already functional, with collectors playing a central role in aggregating and transporting products to Ampana, Luwuk, and Makassar. Rather than bypassing this system, the scheme strengthens it by improving product quality, consistency, and coordination.

Collectors such as Pak Memet and Pak Gusman can be engaged as partners in promoting better handling practices and ensuring that higher-quality products receive better pricing. Over time, this can improve trust and reduce delays in payment, while maintaining a system that is already familiar and accessible to fishers.

Key Actions

- Improve product grading and handling for both fish and anchovy
- Engage collectors in quality-based pricing discussions
- Strengthen consistency of supply to reduce transaction risks

Potential Partners

Table 33. Potential partners for strengthening market linkages while maintaining existing collector system

Institution	Role
Local collectors (Pak Memet, Pak Gusman)	Aggregation and market access
PT Inti Jaya Bahari Luwuk	Regional fish trading
PT Chen Woo Fishery	Processing and export linkage
Hamparan Segara Niaga Group	Cold chain and logistics support

4. Integrating food security and livelihood resilience

The integration of anchovy production and fish fattening creates a localised food system that enhances both household income and food security. By reducing dependence on external feed and improving value capture at the village level, the scheme increases resilience to market fluctuations and logistical disruptions.

At the same time, the approach reduces pressure on reef fisheries by shifting part of the value generation from direct extraction to controlled fattening and improved post-harvest handling. This contributes to conservation objectives while maintaining livelihood opportunities.

Key Actions

- Promote use of locally sourced feed to reduce external dependency
- Strengthen coordination between fisheries and village development planning
- Align activities with sustainable fishing practices

Potential Partners

Table 34. Potential partners for integrating food security and livelihood resilience

Institution	Role
Village government	Integration into village development planning
BUMDes	Livelihood implementation
Balai TNKT	Conservation alignment
ASEAN ENMAPS Project	Facilitation and coordination

5. Market expansion strategy

Market expansion for Pulau Enam should focus on strengthening value, consistency, and positioning of both anchovy and fattened fish products, rather than increasing production volume.

Table 35. Market expansion strategy for Pulau Enam

Phase	Positioning (What we are selling)	Product Development (What is offered)	Market Access (How markets are reached)
Short-Term	Position products as fresh, locally sourced island fisheries products	Improve drying quality of anchovy and grading of fish	Strengthen existing collector relationships
Medium-Term	Position fattened fish as higher-quality, better-sized product	Introduce basic product differentiation (size, quality)	Build stronger linkage with Ampara, Luwuk, Makassar buyers
Long-Term	Develop identity as reliable small-scale fisheries production hub	Develop consistent supply for specific buyers	Explore stable buyer agreements

6. Role of the ASEAN ENMAPS Project in facilitating partnerships

The ASEAN ENMAPS initiative can play a key role in facilitating coordination between fisheries actors, village institutions, government agencies, and private sector partners to strengthen the integrated food security system in Pulau Enam.

Key Roles for the ASEAN ENMAPS Project

- Facilitate coordination between BUMDes, fishers, and collectors to strengthen the anchovy–fattening linkage
- Support capacity building on simple processing, handling, and aquaculture practices
- Facilitate engagement with District Fisheries Office for technical support
- Strengthen linkages with private sector buyers and logistics providers
- Support integration of the scheme into broader MPA management and livelihood strategies

5.2.4 Comparative feasibility assessment of proposed livelihood schemes in TNKT

To support decision-making by Balai TNKT and relevant stakeholders, a comparative feasibility assessment was conducted across the three proposed livelihood schemes. This assessment is intended to provide a practical overview of the relative strengths, readiness, and implementation requirements of each scheme, and to support prioritisation for pilot implementation under the ASEAN ENMAPS initiative.

The assessment is based on key criteria derived from field findings and Outputs 1 and 2, including **community readiness, market potential, conservation contribution, institutional complexity, and investment requirements**. These criteria reflect both implementation feasibility and alignment with MPA management objectives.

Table 36. Feasibility assessment of proposed livelihood schemes in TNKT

Criteria	Integrated Community-Based Fisheries and Eco-Tourism (Kadoda–Pulau Papan)	Sustainable Reef Fisheries through Market-Based Incentives (Kabalutan)	Integrated Anchovy–Fish Fattening Livelihood Scheme (Pulau Enam)
Community Readiness	High – Existing homestays, active fisheries group, women’s products, and tourism assets already in place	Medium – Strong fisheries dependence, but weaker organisation and more challenging social and infrastructure conditions	High – Existing fisheries system, bagan anchovy production, active collectors, and early BUMDes initiative already operating
Market Potential	Medium–High – Tourism demand exists and can be strengthened, while fisheries can supply both local and external markets	High – Strong demand for reef fish through existing collector routes and access to Luwuk/Makassar buyers	High – Existing demand for both anchovy and fattened fish, with established routes to Ampana, Luwuk, and Makassar
Conservation Contribution	High – Links open–close fisheries management, tourism awareness, and waste reduction	Very High – Directly incentivises better fishing practices and improves sustainability of reef fisheries	High – Reduces pressure on wild stocks through feed integration and controlled fattening, while improving efficiency in the fisheries system
Institutional Complexity	Medium–High – Requires coordination across fisheries groups, homestays, village government, Japesda, and tourism actors	Medium – Requires coordination among fishers, collectors, village government, and buyers, but remains focused on one sector	Medium – Requires coordination between bagan fishers, BUMDes, collectors, and district fisheries office, but within an already functioning fisheries system
Investment Requirement	Medium – Waste management improvements, public space repairs, packaging, and tourism product development	Low–Medium – Mainly handling improvement, simple incentives, and coordination with buyers	Medium – Requires operational support for fattening, improved drying/handling for anchovy, and simple production management
Time to Impact	Medium – Tourism integration and village cleanliness improvements need time to generate visible returns	Short–Medium – Better handling and incentive-based sales can improve prices relatively quickly, but practice change takes time	Short–Medium – Anchovy improvements can generate quick gains, while fish fattening needs one or more production cycles before returns are realised
Scalability Potential	Medium–High – Can be replicated in other tourism-ready villages, but depends on market access and local organisation	High – Can be adapted to other fishing villages facing similar market and sustainability challenges	High – Strong potential for replication in other fisheries-dependent villages with anchovy/feed linkages and small-scale grow-out potential
Risk Level	Medium – Depends on sustained visitor demand, coordination, and village-level environmental improvements	Medium – Depends on fisher compliance, collector participation, and sustained buyer interest	Low–Medium – Builds on existing practices, but fish fattening still carries operational and biological risks

Interpretation for pilot implementation

The assessment indicates that all three schemes are feasible for implementation, but with different entry points and levels of complexity.

- The **Integrated Community-Based Fisheries and Eco-Tourism Scheme in Kadoda–Pulau Papan** provides the most diversified livelihood model, combining tourism, fisheries, local food systems, and environmental management. Its feasibility is supported by existing homestays, active groups, and a functioning open–close system. However, because it depends on coordination across multiple sectors and on sustained tourism demand, it is more suitable as a demonstration pilot for integrated livelihood development rather than as the simplest entry point.
- The **Sustainable Reef Fisheries through Market-Based Incentives scheme in Kabalutan** offers the strongest direct contribution to conservation objectives, as it seeks to improve fishing practices through economic incentives and better market access. However, it also requires more careful facilitation due to weaker infrastructure, more sensitive social conditions, and the need to influence fishing behaviour within an existing informal market system. This makes it suitable as a strategic pilot with high conservation value but moderate implementation complexity.
- The **Integrated Anchovy–Fish Fattening Livelihood Scheme in Pulau Enam** presents the most practical entry point for pilot implementation. It builds on an existing fisheries system, already has active collectors, anchovy production, and an early BUMDes initiative, and offers relatively clear market pathways. Although fish fattening requires some operational discipline, the overall scheme remains grounded in existing practice and can generate visible livelihood benefits within a manageable timeframe.

Overall, the three schemes are complementary and can be positioned within a phased implementation strategy:

- **Pulau Enam** → practical, fisheries-based pilot with relatively quick livelihood gains
- **Kabalutan** → conservation-linked fisheries transition with strong strategic value
- **Kadoda–Pulau Papan** → integrated fisheries–tourism model for longer-term livelihood diversification

This combination provides a balanced portfolio of pilot interventions that address livelihood improvement, market access, food security, and conservation outcomes within Togeian Islands National Park.

Box 3. Relevant experiences from community-based livelihood initiatives in MPAs

Experiences from several marine protected areas in Indonesia and the ASEAN region provide useful insights into how livelihood initiatives can be aligned with conservation objectives.

In Raja Ampat Marine Protected Area (Indonesia), community-based tourism has become an important livelihood strategy supporting conservation outcomes. Local communities operate homestays, provide guiding services, and participate in marine tourism activities linked to coral reef protection. Revenue generated from tourism contributes to local income while reinforcing incentives for reef conservation and community compliance with marine management regulations. The Raja Ampat model demonstrates how tourism can be integrated with conservation governance and local economic development.

In Apo Island Marine Reserve (Philippines), community-based fisheries management helped restore coral reefs and fish populations, which later supported the development of marine tourism as an important livelihood for the local community. Fishers and community members actively participate in managing and enforcing the marine sanctuary, strengthening compliance and stewardship of marine resources. Tourism, particularly scuba diving, has since become a major source of income, with visitor fees collected by the local government contributing to conservation programmes and enforcement. However, the Apo Island experience also highlights that tourism can create pressures on ecosystems and local communities if not carefully managed.

These experiences highlight several lessons that are reflected in the ENMAPS pilot schemes proposed in this report: strengthening community participation in livelihood initiatives, improving product quality and market access, linking tourism development with environmental management, and creating economic incentives that reinforce sustainable resource use within marine protected areas. Effective governance measures such as regulating diving activities, limiting access to sensitive fishing grounds, and addressing issues such as waste management, carrying capacity, and cultural considerations are therefore essential to ensure that tourism supports rather than undermines marine conservation.

6 SITE-SPECIFIC INTEGRATED FINANCING AND IMPLEMENTATION PATHWAYS

6.1 Togean Islands National Park: Short-term Operational Financing and Coordination Pathway

6.1.2 Context and operational focus

As outlined in Output 1 and Output 2, TNKT operates under a fisheries-dominated economy, with limited tourism activity and strong dependence on informal market systems. Financing constraints are less about the absence of funding sources, and more about limited access, weak coordination, and low operational integration across actors.

In this context, sustainable financing for TNKT should focus on:

- improving access to existing financing channels,
- strengthening coordination across key actors, and
- aligning livelihood activities with both market systems and conservation objectives.

The proposed livelihood schemes—particularly in **Kabalutan (reef fisheries)** and **Pulau Enam (anchovy–fish fattening)**—serve as practical entry points to operationalise this approach.

6.1.3 Operational financing and coordination actions

Table 37. Operational financing and coordination actions for TNKT

Action	Lead	Supporting Actors	Financing Source	Expected Output
Prepare TNKT pilot action sheet (2–3 priority schemes: Kabalutan, Pulau Enam)	Balai TNKT	Bapperida, DKP, Village Gov, NGO (e.g., Japesda)	APBN / ASEAN ENMAPS	Clear pilot plan with roles, needs, and financing options
Establish and update active livelihood registry (focus on ready groups only)	Balai TNKT	Village Gov, NGOs	APBN / ASEAN ENMAPS	List of priority groups with needs, buyers, and readiness level
Coordinate roles across agencies for each pilot (DKP, village, Balai, collectors)	Balai TNKT	DKP, PMD, Village Gov	Existing government programmes	Agreed division of roles per scheme
Engage collectors and buyers (e.g., Pak Memet, Pak Gusman, regional buyers)	Balai TNKT + ASEAN ENMAPS	Collectors, PT Inti Jaya Bahari, others	Private sector	Initial agreement on supply, quality, and purchase

Action	Lead	Supporting Actors	Financing Source	Expected Output
Align pilot activities with district/provincial programmes (DKP, transport, village fund)	Balai TNKT	Bapperida, DKP, PMD	APBD / Dana Desa	At least one agency support per pilot
Develop 1–2 simple proposals for CSR/NGO support (e.g., drying racks, fish handling, small equipment)	Balai TNKT + ASEAN ENMAPS	NGOs, private sector	CSR / donor	Targeted funding support secured
Facilitate basic technical improvements (handling, drying, fattening practices)	DKP + ASEAN ENMAPS	BUMDes, fishers	APBD / ASEAN ENMAPS	Improved product quality and production consistency

Note: APBD = Anggaran Pendapatan dan Belanja Daerah (Regional Revenue and Expenditure Budget)
APBN = Anggaran Pendapatan dan Belanja Negara (State Revenue and Expenditure Budget)
CSR = corporate social responsibility
DKP = Dinas Kelautan dan Perikanan (Department of Marine Affairs and Fisheries)
PMD = Pemberdayaan Masyarakat Desa (Village Community Empowerment)

6.1.4 Link to financing pathway

These actions operationalise the TNKT financing pathway by:

- using **APBN** primarily for coordination and facilitation,
- leveraging **APBD and village funding (Dana Desa)** for complementary support,
- engaging **private sector buyers** as the main market-based financing mechanism, and
- using **ASEAN ENMAPS and partners** to fill targeted gaps.

Rather than introducing new financial instruments, the approach focuses on **making existing systems work more effectively at the site level**.

The medium- and long-term financing strategies for TNKT, including exploration of environmental funds, performance-based financing, and institutional strengthening are detailed in **Output 1 (Section 6.5.2)**.

6.1.5 Operational coordination approach

To ensure effectiveness, coordination should focus on **producing concrete outputs within a defined timeframe**, such as:

- a short list of priority pilot activities,
- a clear assignment of roles across agencies, and
- identification of financing sources for each activity.

Coordination meetings should therefore result in **decisions and agreed actions**, rather than general discussions.

6.2 Wakatobi National Park: Short-term Operational Financing and Coordination Pathway

6.2.1 Context and Operational Focus

Wakatobi presents a more mature system, with established tourism activity, existing livelihood groups, and broader engagement with external partners. However, as identified in Output 2, the main challenge lies in **fragmentation of efforts, weak coordination across sectors, and limited linkage between economic activities and conservation outcomes**.

In this context, the focus shifts from system establishment to:

- consolidating existing initiatives,
- improving coordination and division of roles, and
- strengthening value capture and reinvestment mechanisms.

The proposed schemes—particularly **tourism and waste management** and **responsible fisheries supply chain**—provide entry points for this consolidation.

6.2.2 Operational financing and coordination actions

Table 38. Operational financing and coordination actions for TNW

Action	Lead	Supporting Actors	Financing Source	Expected Output
Identify and prioritise 2–3 pilot groups (reef fish + tourism villages)	Balai TNW	DKP, Tourism Office, Village Gov	APBN	Clear pilot focus areas
Prepare TNW pilot action sheet (reef fish + tourism–waste schemes)	Balai TNW	NGOs, community groups	APBN/ASEAN ENMAPS	Defined roles, needs, and financing gaps
Assign roles across actors (UPI, DKP, tourism groups, village gov)	Balai TNW	DKP, Tourism Office	Existing programmes	Clear division of responsibilities per scheme
Engage seafood buyers and UPI (e.g., Padalleang Sama) for reef fish supply	ENMAPS + DKP	UPI, exporters	Private sector	Initial supply coordination and quality agreement
Facilitate training on fish handling, grading, and traceability	DKP	UPI, fisher groups	APBD/ASEAN ENMAPS	Improved product quality and consistency
Develop culinary tourism packages linked to local	Tourism groups	Village Gov, ASEAN ENMAPS	Private sector	Structured tourism products

Action	Lead	Supporting Actors	Financing Source	Expected Output
seafood and village experience				
Establish basic waste management system in tourism zones	Village Gov	Environmental Agency, NGOs	Dana Desa/APBD	Improved cleanliness and reduced marine litter
Introduce local reinvestment mechanism (tourism → waste management support)	Village Gov + tourism groups	Balai TNW	Local revenue	Basic circular financing practice established
Strengthen linkage with tourism operators and travel agents	Tourism Office + ENMAPS	Homestay groups, operators	Private sector	Increased visitor flow and integration into itineraries
Document performance (income, visitor numbers, fisheries compliance)	Balai TNW	Community groups, NGOs	APBN	Evidence base for scaling and funding justification

6.2.3 Link to financing pathway

These actions operationalise the TNW financing pathway by:

- using APBN primarily for coordination, facilitation, and performance monitoring,
- leveraging APBD and village funding to support tourism development, waste management systems, and fisheries quality improvement,
- engaging private sector actors, including seafood buyers, UPI, and tourism operators as the main market-based financing mechanism, and
- utilising the ASEAN ENMAPS project and partners to address targeted gaps in capacity building, coordination, and pilot implementation.

In addition, local reinvestment mechanisms—particularly through tourism activities—can support basic environmental management functions such as waste management and village cleanliness, strengthening the sustainability of the system at community level.

Rather than introducing new financial instruments, the approach focuses on strengthening value capture from existing fisheries and tourism systems, while improving coordination and reinvestment to support conservation outcomes at site level. The medium- and long-term financing strategies for TNW, including performance-based financing, environmental funds, and potential institutional flexibility, are detailed in **Output 1 (Section 6.5.3)**.

6.2.4 Operational coordination approach

To ensure effectiveness, coordination should focus on **producing concrete outputs within a defined timeframe**, such as:

- a short list of priority pilot activities,
- a clear assignment of roles across agencies, and
- identification of financing sources for each activity.

Coordination meetings should therefore result in **decisions and agreed actions**, rather than general discussions.

6.2.5 Institutional harmonisation and inclusive coordination mechanism

A key mechanism to support institutional harmonisation and effective implementation of livelihood and financing pathways is the operationalisation of a **site-level coordination platform**, which functions as a practical interface between conservation management, livelihood development, and financing.

In TNKT, this can build on the existing UNESCO Biosphere Reserve coordination forum, while in TNW it can be implemented through a light, output-oriented coordination arrangement building on existing informal collaboration mechanisms.

Rather than focusing on coordination as an end in itself, the platform should be structured around **clear and tangible outputs**, while ensuring **inclusive and participatory engagement across stakeholder groups**, including women, youth, Indigenous Peoples and Local Communities (IPLCs), and other marginalised or underrepresented groups.

Core Functions of the Coordination Platform

1. Site-level pilot action plan (3–5 years)

The platform should develop a practical action plan that:

- identifies priority livelihood schemes (as outlined in Chapter 5);
- links these schemes to existing government programmes and financing sources; and
- clarifies roles across Balai TN, DKP, tourism agencies, village governments, and partners.

Inclusion considerations:

The action plan should ensure that:

- livelihood roles of different groups (e.g., fishers, women's groups, youth, processors, tourism actors) are explicitly recognised;
- IPLCs and local community groups are included as both beneficiaries and implementers; and
- planning processes allow representation of diverse groups, including those who may not typically participate in formal decision-making.

2. Operational business planning for pilot implementation (1–3 years)

The platform should support development of simple operational and financing plans that:

- estimate costs of pilot schemes;
- identify funding sources (APBN, APBD, Dana Desa, private sector); and
- define resource mobilisation strategies.

Inclusion considerations:

Financial planning should consider:

- access to finance for small-scale and informal actors, including women-led and youth-led enterprises;
- allocation of support for activities involving different community roles (e.g., fishing, processing, tourism services); and
- equitable benefit-sharing mechanisms across participating groups.

3. Spatial and thematic alignment of livelihood activities

The platform should:

- ensure that livelihood activities are aligned with zoning and conservation objectives; and
- identify suitable areas for fisheries, tourism, and supporting activities.

Inclusion considerations

Spatial planning discussions should:

- consider access of different groups (including IPLCs, women, and youth) to livelihood areas and resources; and
- ensure that zoning or restrictions do not unintentionally exclude certain groups from economic opportunities or participation.

4. Registry of ongoing and proposed livelihood activities

The platform should function as a simple clearing house by:

- documenting existing livelihood initiatives and pilot schemes;
- identifying overlaps, gaps, and opportunities for scaling; and
- supporting knowledge sharing across stakeholders.

Inclusion considerations

The registry should include:

- participation of different social groups (e.g., men, women, youth, IPLCs);
- types of roles performed (production, processing, services, management); and
- identification of groups that may require targeted support to participate more effectively.

5. Packaging of pilot schemes for external support and partnerships

Based on the action plan and registry, the platform should:

- package priority initiatives for submission to government programmes, development partners, CSR schemes, and private sector actors; and
- improve readiness for financing by clarifying objectives, roles, and expected outcomes.

Inclusion considerations:

Project packaging should:

- highlight inclusive and participatory elements as part of proposal design;
- ensure that benefits reach diverse community groups, including those traditionally underrepresented; and
- align with social safeguard principles and donor requirements.

6.3 Participation and Governance Approach

To ensure effectiveness, the coordination platform should adopt a **participatory and inclusive governance approach**, where:

- community representatives, including fisher groups, women's groups, youth, IPLCs, and tourism actors are actively involved in discussions and decision-making;
- facilitation methods are designed to enable meaningful participation (e.g., appropriate timing, local language use, small-group discussions where needed); and
- decision-making processes are transparent and based on clearly defined roles and responsibilities.

This approach helps strengthen local ownership, improve compliance with conservation measures, and ensure that livelihood benefits are distributed more equitably across communities.

Furthermore, the implementation of livelihood and financing pathways under ASEAN ENMAPS will be supported by a dedicated safeguards process led by the programme. This report does not replace that process but highlights key considerations to ensure that proposed interventions are aligned with the Strategic Environmental and Social Assessment and Social and Environmental Standards of the United Nations Development Programme.

Given the nature of the proposed pilot schemes, key considerations include:

- ensuring that livelihood activities remain aligned with conservation objectives and zoning regulations;
- considering practical limits to resource use (e.g., carrying capacity for tourism and aquaculture), access arrangements for space-based activities, and alignment with environmental permitting requirements;
- promoting inclusive participation of diverse community groups, including women, youth, and IPLCs; and
- avoiding unintended environmental or social impacts through phased implementation and regular monitoring.

These considerations are integrated into the design of the pilot schemes and the coordination mechanisms described in this report. Detailed safeguards screening, risk assessment, and mitigation planning will be undertaken separately through the ASEAN ENMAPS safeguards process.

6.4 Monitoring and Learning

Monitoring should be **simple, practical, and directly linked to decision-making**, rather than designed as a complex reporting system. The focus is on tracking key changes in livelihoods, environmental conditions, and implementation progress, while enabling continuous learning and adjustment.

In line with the institutional harmonisation and inclusive governance approach described above, monitoring should also support:

- coordination across institutions; and
- inclusive participation of diverse stakeholder groups in tracking and reflecting on progress.

Monitoring framework

Indicators are designed to be simple, observable, and based on information that can be recorded through routine coordination and field activities. Short verbal feedback recorded in notes is sufficient.

Table 39. Monitoring framework

Monitoring Area	What to Monitor	How to Monitor	Who is Responsible	Frequency	Use of Information
Livelihood Performance	• Number of participating households/groups • Volume and value of products (fish, tourism services) • Market access (buyers, tourism flows) • Participation of different groups (e.g., women, youth, IPLCs, small-scale actors)	• Simple group records (sales, production) • Homestay/visitor logs • Basic reporting during coordination meetings	• Community groups (daily records) • Balai TNKT/TNW (review) • Community representatives (including diverse groups) contribute to reporting	Monthly (group level) Quarterly (review)	• Assess income improvement • Identify market constraints • Adjust support to groups
Environmental Outcomes	• Compliance with sustainable fishing practices • Reduction of visible waste in key areas • Basic reef/coastal condition (where feasible)	• Field observation (Balai, community) • Spot checks in fishing and tourism areas • Community feedback	Balai TNKT/TNW Community groups Village government	Quarterly	• Ensure alignment with conservation objectives • Identify environmental risks early • Adjust practices if needed
Implementation Progress	• Effectiveness of coordination platform (e.g., number of joint activities, conflicts resolved by coordination) • Functionality of coordination (e.g., number of coordination meetings conducted & percentage of action points implemented) • Adoption of improved practices (e.g., number of groups participating) • Effectiveness of partnerships (e.g., number of agreements established, transaction frequency)	• Coordination meeting notes • Progress tracking against pilot action plan • Feedback from partners	Balai TNKT/TNW ENMAPS District agencies	Quarterly	• Identify bottlenecks in coordination • Improve role clarity • Strengthen partnerships
Financial Flow and Sustainability	• Stability of buyer relationships • Tourism revenue trends • Use of village funds and reinvestment practices • Distribution of benefits across participating groups	• Buyer engagement tracking • Tourism income records • Village financial reporting (simple)	Balai TNKT/TNW Village government ENMAPS	Quarterly / Bi-annual	• Assess financial viability of schemes • Identify funding gaps • Support scaling decisions

Learning and adaptation

Monitoring results should be used for **regular reflection and adaptive management**, rather than reporting only. Key learning processes include:

- periodic review during coordination meetings (e.g., quarterly),
- identification of what works and what does not in pilot implementation, and
- adjustment of approaches (e.g., market linkage, community engagement, technical practices).
- reflection on inclusiveness of participation and benefit distribution across stakeholder groups

Lessons learned from pilot implementation should be documented by the ASEAN ENMAPS Project and Balai TN to support:

- replication in other villages within TNKT and TNW;
- knowledge sharing across the MPA network; and
- strengthening of MPA network-level learning on integrated governance, livelihood, and financing approaches.

7 CONCLUSIONS

This report examined the governance, institutional arrangements, and livelihood conditions surrounding the management of Wakatobi National Park (TNW) and Togean Islands National Park (TNKT). Drawing on the policy and governance analysis in Output 1, the stakeholder mapping in Output 2, and field consultations conducted in both sites, the report identifies key opportunities to strengthen the link between marine conservation objectives and community livelihoods.

A central finding of the study is that sustainable MPA management requires stronger alignment between conservation policies, local economic activities, and institutional coordination mechanisms. While both TNW and TNKT already host a variety of community livelihood initiatives, many of these remain fragmented, limited in scale, or constrained by weak market access, limited coordination among stakeholders, and insufficient financial sustainability. Strengthening these livelihood systems therefore represents an important pathway not only for improving community welfare but also for reinforcing the long-term effectiveness of MPA management.

The pilot livelihood schemes proposed in this report aim to build on existing economic activities within the two marine national parks rather than introducing entirely new sectors. In Wakatobi National Park, the proposed initiatives focus on strengthening the seaweed seed supply system, improving responsible reef fish supply chains, and developing community-based tourism integrated with waste management initiatives. In Togean Islands National Park, the schemes emphasise integrated fisheries–tourism systems, sustainable reef fish supply chains, and the strengthening of anchovy-based value chains linked with fish fattening activities. These initiatives are designed to enhance product quality, improve market access, strengthen local institutions, and create stronger economic incentives for sustainable resource use.

Importantly, the proposed livelihood schemes are not intended as standalone economic interventions. Instead, they are designed to operate within the broader Short-term Operational Financing and Coordination Pathways proposed for TNW and TNKT. These pathways focus on improving coordination among key institutions, including the Marine National Park authorities, local governments, community groups, private sector actors, and supporting organisations. Through improved coordination and clearer institutional roles, these pathways can help mobilise and align multiple funding sources that exist within the current governance framework.

In the short term, financing for livelihood initiatives and supporting activities can be mobilised through existing public funding channels such as national government budgets (APBN), provincial and district budgets (APBD), and village funds (*Dana Desa*). These funding sources can support community capacity building, small-scale infrastructure improvements, coordination activities, and early-stage livelihood development. At the same time, partnerships with NGOs, development partners, and private sector actors can provide additional technical support and catalytic funding to pilot new approaches.

Over time, the livelihood schemes are expected to contribute to more sustainable financing arrangements by strengthening economic activities that are compatible with conservation objectives. Improved fisheries value chains, sustainable aquaculture practices, and community-based tourism can generate local income while reducing pressure on marine ecosystems. As these activities mature and become more organised, they may also create opportunities for additional financing mechanisms, such as co-operative-based business models, partnerships with seafood buyers and tourism operators, or conservation-linked market initiatives.

The implementation of these schemes should also be guided by principles of participatory governance, gender inclusion, and environmental safeguards. Ensuring that women, youth, and diverse community groups can participate in livelihood initiatives and decision-making processes will help strengthen social sustainability and local ownership of conservation efforts. In addition, alignment with the Strategic Environmental and Social Assessment and the Social and Environmental Standards of the United Nations Development Programme will help ensure that livelihood interventions contribute to positive environmental and social outcomes.

Ultimately, strengthening the connection between conservation and livelihoods represents a critical pathway toward more effective and resilient MPA management. **By supporting community-based economic activities that are aligned with sustainable resource use, the proposed initiatives can help reinforce incentives for conservation while improving the well-being of coastal communities.** Through coordinated implementation, the proposed financing and coordination pathways provide a practical framework for translating these opportunities into concrete actions within both marine national parks.

Under the ASEAN ENMAPS initiative, the proposed pilot schemes offer an opportunity to test and refine integrated approaches to livelihood development, institutional coordination, and sustainable financing in marine protected areas. Lessons generated from these pilots may inform future efforts to strengthen MPA networks across Indonesia and the wider ASEAN region.

APPENDIX

Appendix Table 1. Participatory feasibility scoring exercise (15 April Consultation)

Kriteria	Penjelasan	Catatan	WAKATOBI		
			Perbaikan rantai pasok ikan berkelanjutan (gurita & laut dalam)	Penguatan pengolahan rumput laut dan stabilisasi akses pasar	Pengembangan paket wisata komunitas dan pengelolaan sampah
			<i>Wangi-Wangi? Kapota-Mola Raya-Liya</i>	<i>Desa Liya Bahari? Kaledupa</i>	<i>Pulau Tomia (Kulati & Kollo Soha)? Kapota</i>
Kesiapan Masyarakat	Keaktifan dan pengalaman kelompok target: - Apakah sudah ada kelompok masyarakat yang aktif terkait kegiatan ini? - Apakah kelompok tersebut sudah memiliki pengalaman atau kegiatan serupa sebelumnya? - Apakah masyarakat menunjukkan minat untuk	Lokasi Potensial	4	3	3
		Biaya produksi rumput laut masih cukup tinggi jadi harga pemasaran menjadi mahal, gangguan bibit/benih (perlu modal besar). Jadi biasanya dijual kering. Pariwisata danau Kapota, tapi masih belum banyak			

Potensi Pasar	Permintaan pasar atau pembeli yang jelas: - Apakah sudah ada pembeli atau pasar yang jelas untuk produk atau jasa dari kegiatan ini? - Apakah produk atau jasa yang dihasilkan memiliki permintaan yang stabil? - Apakah akses pasar relatif mudah dijangkau dari lokasi kegiatan?	Mola Raya sudah banyak yang sampai ekspor, Padaleang Sama. Kapota-Mola Raya-Liya, Komanangi sebagai mitra pendamping. Petani rumput laut kumpulkan ke pengepul lokal. Kalo gurita bisa lebih pendek supply chain.	4	3	3	
Kontribusi terhadap Konservasi	Sejauh mana skema mendukung pengelolaan kawasan konservasi dan praktik perikanan berkelanjutan: - Apakah kegiatan ini mendukung pemanfaatan	RL Produksi cepat, dapat mengurangi penangkapan ikan, tergantung juga cuaca buruk (panen raya 2x). Sampah	3	4	3	

	sumber daya yang berkelanjutan? - Apakah kegiatan ini dapat mengurangi tekanan terhadap sumber daya di kawasan taman nasional? - Apakah kegiatan ini sejalan dengan tujuan pengelolaan kawasan konservasi?	kebanyakan dari domestik & kiriman, masyarakat buang sampah ke laut. Pemda cukup menaruh atensi tinggi ke pengelolaan sampah.			
Kelayakan Kelembagaan	Kemudahan koordinasi antar instansi dan dukungan dari pengelola kawasan: - Balai TN bisa mendukung dengan programme yang sudah ada? - dinas terkait bisa terlibat? - koordinasi mudah?	Instansi lain mendukung. Mola Raya rencana KMP. Pariwisata: Perlu kolaborasi erat dengan transportasi.	4	4	4
Kebutuhan Investasi	Tingkat kebutuhan investasi awal untuk memulai kegiatan: - apakah perlu modal besar? - apakah bisa dimulai kecil? - apakah perlu fasilitas baru?	Modal kecil, harga yang perlu diperhatikan. Akses transportasi untuk pariwisata sulit, jadi infrastruktur	5	3	3

			pariwisata jadi terbengkalai.				
Potensi Replikasi	Kemungkinan untuk diperluas ke desa atau kelompok lain di masa depan	Bisa direplikasi di pulau lain. RL lebih sulit direplikasi karena tidak bisa tumbuh di lokasi tertentu (lebih ke arah biologis & ekologis)	4	2	4		
	TOTAL NILAI		24	19	20		

