THEORY OF CHANGE FOR THE ARAFURA AND TIMOR SEAS ECOSYSTEM ACTION PHASE II (ATSEA-2) PROJECT

This report was prepared by Michael Mikov for The Arafura and Timor Seas Ecosystem Action Phase 2 (ATSEA-2) Project.
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EXECUTIVE SUMMARY

The ATSEA-2 project is the second phase of the GEF/UNDP/PEMSEA supported Arafura and Timor Seas Ecosystem Action (ATSEA) program and is designed to enhance the regional collaboration and coordination across the Arafura and Timor Seas (ATS) region, which is composed of Australia, Indonesia, Papua New Guinea, and Timor-Leste.

The project focuses on supporting the implementation of the 10-year (2014-2024) ATS Strategic Action Programme (SAP) that was endorsed through a Ministerial Declaration in 2014. The long-term objective of the SAP is "to promote the sustainable development of the ATS region to improve the quality of life of its inhabitants through restoration, conservation and sustainable management of marine and coastal ecosystems."

ATSEA-2 is a 5-year (2019-2024) project that supports the implementation of the following governance and environmental objectives of the SAP: (i) Strengthening of ATS regional governance; (ii) Recovering and sustaining fisheries; (iii) Restoring degraded habitats for sustainable provision of ecosystem services; (iv) Reducing land-based and marine sources of pollution; (v) Protecting key marine species; and (vi) Adaptation to the impacts of climate change.

The project was developed and approved before the preparation of a Theory of Change (ToC) was prescribed as part of the GEF project development process. The regional inception workshop and the 1st Regional Steering Committee (RSC) meeting in November 2019 recognised the importance of a ToC to help facilitate: a) better articulation of the result logic between the various project activities, outputs and outcomes and the targets in the SAP; b) effective communications about the project and its results; and c) clear identification of roles of all related partners and stakeholders. The 2nd RSC meeting in November 2020 further underscored the value of having a ToC for the project, including its value in developing the monitoring system for the SAP.

In response to the RSC recommendations, the Regional Project Management Unit (RPMU) engaged an international consultant to support the development of a ToC for the ATSEA-2 Project. Under the guidance of the Regional Project Manager (RPM) and in close cooperation with the Policy and Result-based Management Specialist - the scope of work included the development of a series of ToCs for the project that clarifies the causal relationships between the project results and SAP targets, roles and responsibilities of stakeholders (regional and country-level implementation), and a set of potential indicators at both the programme and project level.

The process for developing the ToC was undertaken virtually - through a series of presentations, email exchanges, and stakeholder feedback that included the national focal point in Australia, in-country project representatives (National Coordination Units - NCUs) from all three implementing countries, and the ATSEA-2 Regional Programme Management Unit.

Key documents consulted included the Transboundary Diagnostic Analysis (TDA, 2011), ATS Strategic Action Programme (ATS SAP, 2012), ATS Indonesia and Timor-Leste National Action Plans (NAPs, 2012/2013), and the UNDP ATSEA-2 Project Document (PRODOC, 2017).

The visual representations were developed using the Miradi conservation planning tool (miradi.org) and based on the principles and practices of the Open Standards for Conservation (conservationstandards.org).

The diagrams developed for each element of the ToCs are accompanied by brief explanatory narratives that guide audiences through the causal relationships and results presented in the diagrams and help communicate 'how and why' project activities are expected to lead to the project outcomes.

Collectively there are nine diagrams that represent:

1. the high-level conceptual model - a summary of the Trans-boundary Diagnostic Analysis (2011) that identified the root causes of biodiversity loss, contributing factors or indirect drivers, sectoral drivers, and the direct threats impacting on the conservation, ecosystem services, and human well-being;
2. the high-level theory of change (results chain) for the ATS Strategic Action Programme - a summary of the ATS strategy currently being implemented and expected results to be achieved that aim to reduce the impacts of key direct threats to the region and lead to the improved status of the conservation targets - provision of associated ecosystem services and ultimately the human well-being targets;
3. separate ToCs (results chains) for each of the project's 3 component strategies (Governance, Improving LME Carrying Capacity & Knowledge Management) - provide a summary of the project's outputs and outcomes - as defined in the Project Document - and arranged to demonstrate how the project activities will deliver the specific outputs required to achieve the planned project outcomes. Due to the complexity of component 2 - separate ToCs have been developed for each thematic area - fisheries, marine pollution, habitat, species, and integrated coastal management.

In addition to the ToCs, a set of potential indicators have been developed to support the evolution of a region-wide monitoring and reporting system. Indicators are set at both the SAP programme level and project level targets. Together with the ToCs, indicators will be used to monitor progress and adaptively manage the implementation and help identify areas of concern, what works and what doesn't, and minimise risks. Lessons learned will be shared across the region and support the scaling up and multiplication of successful interventions where possible.

CONTENTS

LIST OF DIAGRAMS

ABBREVIATION LIST

ATS	: Arafura and Timor Seas
ATSEA	: Arafura and Timor Seas Ecosystem Action Programme
CC	: Climate Change
CCA	: Climate Change Adaptation
CITES	: Convention on International Trade in Endangered Species
CMS	: Convention on Migratory Species
EAFM	: Ecosystem Approach to Fisheries Management
FAO	: Food and Agriculture Organisation (UN)
FIP	: Fisheries Improvement Project
GEF	: Global Environment Facility
ICM	: Integrated Coastal Management
IDN	: Indonesia
IUU	: Illegal, Unreported and Unregulated (Fisheries)
IW:LEARN	: International Waters Learning Exchange and Resource Network (GEF)
LME	: Large Marine Ecosystems
LMMA	: Locally Managed Marine Areas
M&E	: Monitoring & Evaluation
MCS	: Monitoring, Control and Surveillance
MPA	: Marine Protected Area
MSC	: Marine Stewardship Council
MSP	: Marine Spatial Planning
NAP	: National Action Plan
NBSAPs	: National Biodiversity Strategies and Action Plans
NCUs	: National Coordination Units
NIMCs	: National Inter-Ministerial Committees
NPBs	: National Project Boards
PEMSEA	: Partnerships in Environmental Management for the Seas of East Asia
PES	: Payments for Ecosystem Services
PNG	: Papua New Guinea
RCC	: Regional Coordination Committee
RMU	: Regional Management Unit
RPMU	: Regional Project Management Unit
RPOA	: Regional Plan of Action
RSC	: Regional Steering Committee
SAP	: Strategic Action Programme
SMART	: Specific, Measurable, Achievable, Realistic, and Timely.
SRF	: Strategic Results Framework
TDA	: Trans-boundary Diagnostic Analysis
TL	: Timor-Leste
ToC	: Theory of Change
UNDP	: United Nations Development Programme

INTRODUCTION

ATSEA-2 is the second phase of the GEF-financed, UNDP-supported ATSEA programme and is designed to enhance regional collaboration and coordination across the Arafura and Timor Seas (ATS) region, which is composed of Australia, Indonesia, Papua New Guinea, and Timor-Leste.

The project focuses on supporting the implementation of the 10-year ATS Strategic Action Programme (SAP) and corresponding National Action Programmes (NAPs), with the long-term objective "*to promote sustainable development of the ATS region to improve the quality of life of its inhabitants through restoration, conservation and sustainable management of marine and coastal ecosystems*."

In particular, this 5-year ATSEA-2 project supports the implementation of the following governance and environmental objectives of the SAP:

- Strengthening of ATS regional governance
- Recovering and sustaining fisheries
- Restoring degraded habitats for sustainable provision of ecosystem services
- Reducing land-based and marine sources of pollution
- Protecting key marine species and,
- Adaptation to the impacts of climate change.

Purpose

The project was developed and approved before the preparation of a Theory of Change (ToC) was prescribed - as part of the GEF project development process. The regional inception workshop and the 1st Regional Steering Committee (RSC) meeting in November 2019 recognised the importance of a ToC to help facilitate:

- Better articulation of the result logic between the various project activities, outputs, and outcomes and the targets in the SAP
- Effective communication about the project and its expected results and,
- Clear identification of roles of related partners and stakeholders, including the proposed ATSEA regional governance mechanism (RGM), ensuring its relevance and alignment with current regional/national policies and regulatory frameworks.

The ToC, once formulated and endorsed by the RSC, is also envisioned to provide guidance in the updating of the ATS SAP as well as in the development of the ATS SAP Monitoring and Reporting System.

Theory of Change

ToC Definition (GEF): "*the process and product of developing an explicit account of how and why an intervention is expected to achieve its intended outcomes and impact goal, based on outlining a set of key causal pathways arising from the activities and outputs of the intervention (whether at program or project level) and the assumptions underlying these causal connections.*"

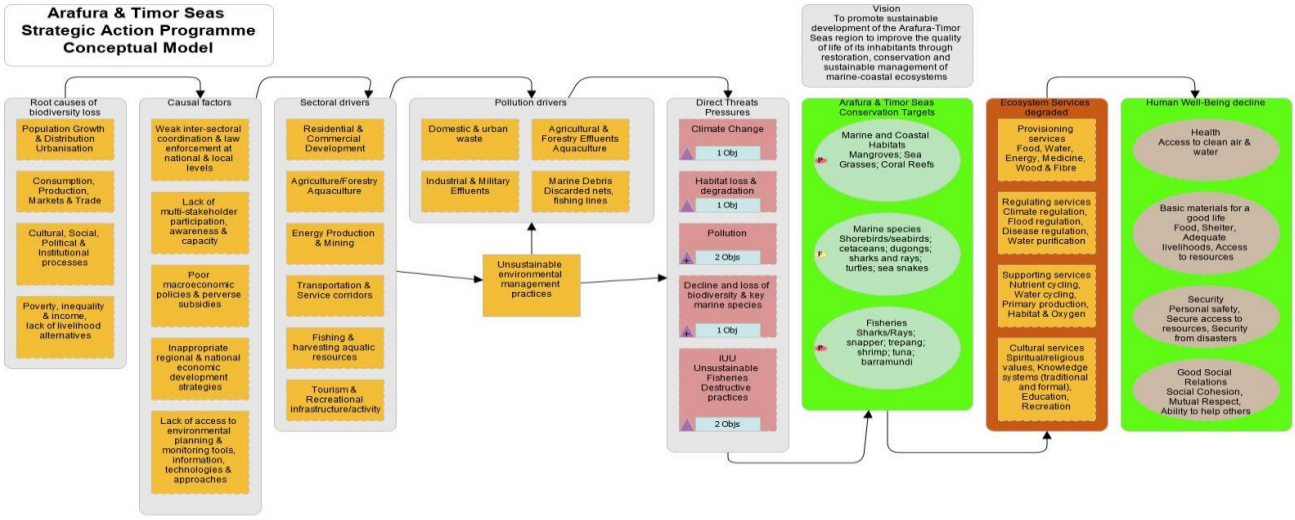
The following diagrams and accompanying narratives have been developed to explain the context in which the project is operating - through a series of models that capture and summarise:

1. The ATS SAP environmental concerns - identified through the Transboundary Diagnostic Analysis, (TDA, 2011) and confirmed by the recent issue-specific assessments - the direct and indirect drivers of change, and impacts to ecosystem services and the human well-being of the region;
2. The ATS SAP strategy that identifies the regional level priority actions and expected results to be achieved; and
3. The Strategic Results Framework (SRF) describes the activities, outputs, outcomes, and intended impacts of the project.

CONCEPTUAL MODEL (SITUATION ANALYSIS)

Definition: *A conceptual model is a tool for visually depicting a set of causal relationships - the context within which a project is operating - and the major forces that are influencing the conservation and human well-being outcomes at the site.*

Diagram 1. ATS SAP Conceptual Model



Legend Table	
Conservation Target	Direct Threat
Human Well-being Target	Contributing Factor

Conceptual Model Narrative

The ATS Transboundary Diagnostic Analysis (TDA) identified 5 priority environmental concerns:

1. Unsustainable fisheries and decline and loss of living coastal and marine resources;
2. Modification, degradation, and loss of coastal and marine habitats;
3. Marine and land-based pollution;
4. Decline and loss of biodiversity and key marine species; and
5. Impacts of climate change.

The conceptual model presents the current situation analysis across the region and highlights the main direct and indirect threats and related drivers that are negatively impacting on the priority conservation targets identified through the TDA - marine and coastal habitats, key marine species, and capture fisheries.

The loss and/or degradation of all conservation targets are reducing their ability to provide the necessary ecosystem services – provisioning, regulating, supporting, and cultural - and threaten the human well-being benefits of all ATS communities such as food and nutrition, clean water, and adequate livelihoods that are critical to the long-term sustainable development of the region.

The rationale for developing interventions to reduce the impacts of the main threats to the region are based on the assumption that by addressing each threat and related driver(s) - the

status of all conservation targets will be improved - including their ability to provide the necessary ecosystem services that ultimately support the human well-being priorities across the region.

Direct Threats or Pressures (See Diagram 1)

Illegal, Unreported, and Unregulated fisheries (IUU) & Unsustainable/Destructive fishing practices

The main causal factors impacting the productivity of all ATS fisheries (industrial and small scale) are related to a combination of IUU fishing, over-exploitation/over-harvesting, unsustainable and destructive fishing practices, and the impacts of fisheries bycatch or accidental mortality.

The increasing number and capacity of fishing boats together with new and improved technology have depleted fish stocks across the region. Priority fish stocks include pelagic fisheries (shark and rays, snappers & barramundi; trepang, shrimp and tuna), as well as coastal reef fisheries (groupers, trepang and barramundi). Key marine species and critical habitats are lost due to both industrial scale (trawl and long line) and traditional/artisanal fisheries which employ destructive practices such as blast and cyanide fishing, (TDA, 2011).

Habitat Loss and Degradation

The primary causes of lost or degraded habitats are attributable to a combination of urban development and infrastructure (both residential and commercial), pollution from mining and energy production (oil & gas drilling, seismic testing), and transportation (roads & shipping).

In marine environments, bottom trawling and destructive fishing practices (blast fishing, cyanide, and destructive gear) degrade coral reefs, mangroves, and seagrasses that provide critical habitat for many commercial and threatened species. On land, urban development (residential & industrial), transport infrastructure (roads, ports), forestry, and agriculture/aquaculture all contribute to major land clearing - particularly mangrove habitats - with associated pollutants (nutrient loading, toxic chemicals, and sediments) degrading habitats.

Pollution

The pollution issues across the region are varied and multi-sectoral. Sources of pollution identified in the TDA are driven by a combination of poor catchment practices (mine tailings and agricultural runoff), offshore oil & gas exploration (oil spills, noise), and the effects of fisheries, including marine debris (discarded fishing nets & plastics).

Coastal developments introduce nutrients and sediments from garbage and solid and liquid waste into marine ecosystems. Land clearing and poor practices from agricultural, forestry, and the aquaculture industry introduce effluents that contain nutrients, toxic chemicals (herbicides & pesticides), and sediments.

Decline and Loss of Biodiversity & Key Marine Species

ATS fishery activities, including illegal harvesting, traditional indigenous harvest and fisheries by-catch (ghost nets, trawling and long-lines), heavily impact key marine species - particularly globally threatened marine species (turtles, dugongs, seabirds/shorebirds, sea snakes, sharks and rays).

The loss of habitat, declining water quality from pollution and climate change related impacts (temperature & acidification), impact heavily on the population and distribution of many endangered, threatened and protected species.

Climate Change

The coastal and marine environments of the ATS region are particularly vulnerable to the impacts of climate change. Coral bleaching from rising temperatures, ocean acidification and sea level rise impact both habitats and species and intensify the impacts of other direct threats to the region. Increasing severe weather events cause more frequent droughts and flooding of coastal areas. And runoff from flooding mobilise sediments and pollution that degrade coastal habitats and the viability of species (including fisheries).

Sectoral Drivers (See Diagram 1)

Each of the direct threats or pressures identified in the conceptual model are linked to the activities of one or more sectors largely through unsustainable management practices. The TDA identified six major sectors that need to employ more sustainable policy and management practices to reduce their impacts on the region. The key sectors and associated impacts are:

- Residential and commercial development - housing and urban infrastructure, commercial/industrial infrastructure (e.g., port facilities), that remove or degrade coastal habitats and introduce solid and chemical wastes into nearshore areas.
- Agriculture/Forestry and aquaculture - resulting in deforestation and land clearing for food, fiber, fuel, or other uses and marine/freshwater aquaculture that removes mangrove habitats for fish or seaweed farming.
- Energy production and mining - oil and gas extraction as well as mining and quarrying that pollute sensitive habitats from oil spills and marine debris.
- Transportation and service corridors - roads, utility and service lines, shipping lanes that result in habitat damage and pollution from transport/shipping activities, noise pollution from ship machinery/propulsion systems, groundings, and an increase of invasive species from ship ballast.
- Capture fisheries and harvesting aquatic resources - harvesting aquatic wild animals or plants for commercial, recreation, subsistence, research, or cultural purposes, including accidental mortality/bycatch from commercial trawling and longline fisheries, artisanal fishing, turtle product collection, blast and cyanide fishing.
- Tourism - recreational infrastructure development, pollution (plastics), and disturbance to biota.

Causal Factors - Indirect Drivers (See Diagram 1)

The direct threats to the region are related to a broad set of sectoral, social, economic, and political drivers that collectively act as the root causes of biodiversity loss and increasing human ecological footprint. Population growth and consumption choices are fundamental drivers of human environmental impacts leading to the ever-growing demand for natural resources such as energy, food, water, and wood. Collectively these indirect drivers have degraded many ecosystems that provide the necessary ecosystem services for human well-being.

The project will not specifically address issues of population, economic growth, or consumption choices that are root causes of biodiversity loss; however, their impact can be minimised if the institutional and sectoral drivers are managed for sustainability. The project will focus on strengthening the institutional mechanisms and stakeholder participation, awareness, and capacity to establish more coordinated region-wide actions to address the environmental concerns raised in the TDA.

The high-level conceptual model cannot present every interaction resulting in direct threats to the region. Rather the conceptual model will focus on those causal factors or indirect drivers that inadvertently allow sectoral management practices to operate in an unsustainable way. The main factors tend to broadly relate to public and private sector policies and practices, financial flows (both public and private investment), and market behaviour.

The lack of a strong regional mechanism for collective action and transboundary management makes inter-sectoral coordination affecting natural resource management decisions difficult to achieve. Where appropriate policies exist, a lack of enforcement has prevented effective implementation of policies and led to poor natural resource management outcomes.

Inappropriate regional and national development strategies and poor macro-economic policies-including perverse subsidies tend to favour industry more than the environment. Private and public sector finance that heavily influence development and infrastructure decisions do not take into account the value of biodiversity and have led to unsustainable natural resource use with related impacts to habitats, key marine species, and fisheries across the region.

Governance agencies and the private sector - especially for major extractive industries such as fisheries, forestry, and mining - need to be guided by appropriate environmental planning and monitoring tools, information, technologies, and approaches and develop a ecologically and socially sustainable framework practices.

ATS STRATEGIC ACTION PROGRAMME (SAP) THEORY OF CHANGE

The ATS SAP conceptual model summarises the main threats to the region and related causal factors that were identified during the TDA. Population and economic growth, consumption choices, and a lack of alternative livelihoods are driving increasing market demand (both domestic and international) for ATS natural resources. Poverty and inequitable access to resources leave local communities vulnerable with no choice but to depend on the coastal and marine resources for basic needs.

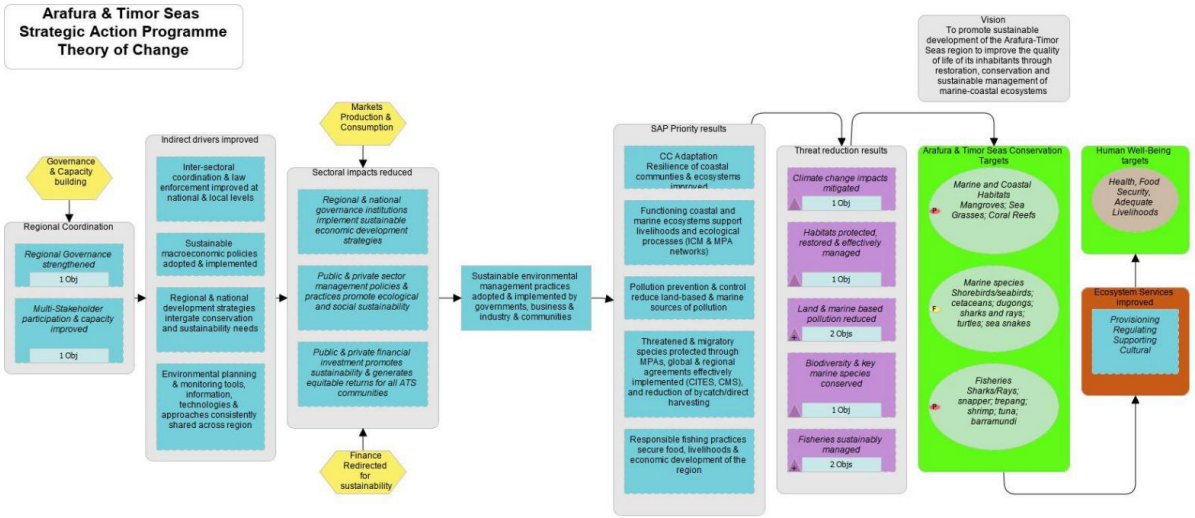
To capitalise on increasing demand for housing, food and energy, as well as economic opportunities, both private and public sector practices are lacking an ecosystem-based approach to development and investments.

Regional and national governance has been difficult to coordinate. And without proper monitoring and enforcement of legal frameworks, production sectors have tended to operate without adhering to sustainable policies and standards resulting in the over-exploitation of natural resources, habitat loss and degradation, and increasing pollution across the region.

ATS SAP Theory of Change (Results Chain)

Definition: *A results chain is a diagram that depicts the assumed causal linkage between an intervention and desired impacts through a series of expected intermediate results (Foundations of Success, 2009).*

Diagram 2. ATS SAP Theory of Change (Results Chain)



Legend Table			
Conservation Target	Threat Reduction Result	Strategy	Objective
Human Well-being Target	Intermediate Result	Indicator	

To effectively achieve the SAP priority results, inter-sectoral coordination, economic development strategies, and environmental planning and monitoring approaches will be strengthened to ensure sustainability needs are integrated with biodiversity conservation. The following strategies will guide regional and national actions to minimise the effect of the indirect drivers identified through the TDA.

Governance and Capacity building

An agreed and formal regional governance mechanism - supported by a more inclusive multi-stakeholder forum - will aim to build capacity, encourage public-private sector partnerships, and support coordination of regional and national plans of action.

By widening the scope of stakeholder engagement, to include business and communities (e.g., extractive industries such as mining and energy); public sector agencies including national and local governments (e.g., ministries responsible for energy, mining and petroleum); academic and research institutions and experts; international, national and local NGOs and donor funding institutions, this theory of change aims to establish co-management arrangements and shared priorities across the region and ensure practices and management adequately incorporate the environmental costs of production. In particular, marginalised and/or vulnerable communities will be given a voice to ensure economic benefits are distributed equitably through rights-based approaches that provide adequate livelihoods as well as access to resources and markets (SDG14b).

Markets - Production and Consumption

Supported by improved environmental planning and monitoring tools, shared access to information, technologies and approaches - national policies will provide the regulatory environment needed to encourage production sectors to be more sustainable and socially responsible.

As the availability of more sustainable products increase (e.g., MSC certified seafood) the theory of change assumes that consumption patterns will also shift to eco-friendly products.

Through rights-based approaches and the implementation of payments for ecosystem services (PES) the livelihoods of dependent communities will be improved, in addition to generating a sustainable financing mechanism to protect and maintain impacted ecosystems.

Finance Redirected for Sustainability

By ensuring financial investment - both public and private - incorporate the environmental costs of production, environmental impacts will be reduced as well as generate equitable returns for local communities and investors. Funding flows that prioritise sustainable development needs, meet market demands and support livelihoods could lead to a transition to a "Blue Economy" across the ATS Region.

By effectively implementing these strategies, the SAP theory of change expects to result in a significant reduction of the main threats and ecological footprint across the region leading to long term sustainability of ecosystem services, health and livelihoods of regional communities.

The expectations are that each of the priority environmental results will be achieved through a concerted and collaborative effort of all ATS countries and stakeholders.

SAP Priority Results and Threat Reduction (see Diagram 2)

This theory of change assumes that sustainable environmental management practices will be adopted and implemented across the region by creating a more supportive environment for business and communities in the context of stable and effective regional/national legal and policy frameworks.

The priority results include specific, measurable, and achievable outcomes (SMART) that collectively mitigate the environmental concerns identified through the TDA process. Indicators of progress are in development that will enable the assessment of outcomes and impacts at local, national, and regional scales.

All ATS countries have endorsed the SAP targets, and implementing countries have embedded similar targets and actions into their respective national action plans (NAPs).

Please see Annex 1 for a complete list of SAP Targets (objectives) and associated indicators.

ATSEA-2 PROJECT THEORY OF CHANGE

The ATSEA 2 project, the second phase of the ATS Programme, is designed to support the implementation of the overarching ATS Strategic Action Programme (SAP). The project will specifically focus on establishing the enabling conditions necessary to deliver the SAP priority actions.

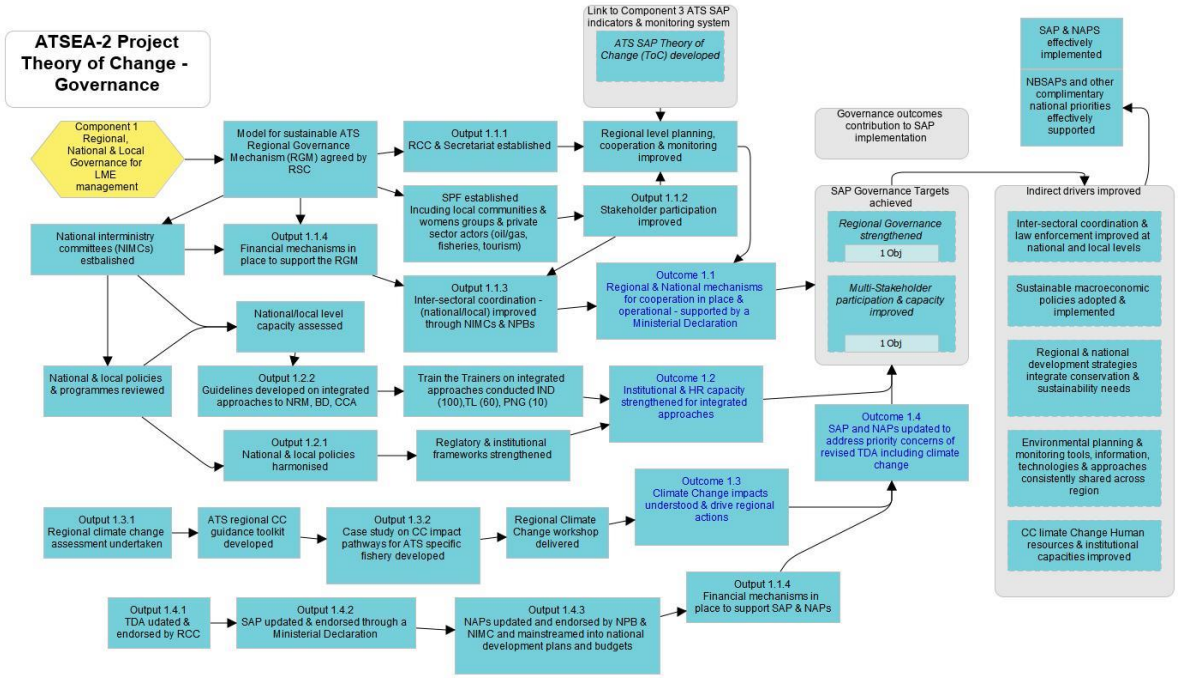
Three "Component Strategies" have been developed that collectively aim to:

- Enhance regional/national coordination, collaboration, and stakeholder participation;
- Contribute to the management and improvement of fisheries and other coastal resources;
- Identify priority conservation areas to protect habitat and species and support the development of a planned network of marine protected areas (MPAs) and a regional plan of action to protect marine turtles;
- Build capacity to effectively respond to marine pollution events - particularly oil spills;
- Improve understanding of climate change impacts to marine and coastal resources and response strategies at regional, national and local levels;
- Demonstrate the benefits of Integrated Coastal Management (ICM) that incorporates both climate change and ecosystem-based adaptation strategies to vulnerable communities; and
- Improve the monitoring of SAP and NAP implementation for adaptive management and continuous learning.

The following diagrams have been prepared to help demonstrate the causal relationships between the project's activities, outputs, and desired results - the project level theory of change. Each component strategy and associated outcomes are linked to the overarching SAP priority results and demonstrate how the project interventions will help support the longer-term delivery of the ATS Strategic Action Programme.

Component 1 - Governance

Diagram 3. ATSEA-2 Project Theory of Change (Results Chain) for Component 1 - Governance



Legend Table	
Intermediate Result	Objective
Strategy	

Component 1 has the objective to strengthen the regional and national governance of the Arafura and Timor Seas management. The theory of change implies that by developing an agreed model for a Regional Governance Mechanism (RGM), a Regional Coordination Committee (RCC), supported by an expanded Stakeholder Partnership Forum (SPF) and Regional Secretariat, would create the preconditions necessary for improved regional and national coordination.

The assumption is that National Inter-Ministerial Committees (NIMCs) would be created by each implementing country to act as national coordinating bodies across the various government portfolios relevant to the implementation of the SAP. National Coordinating Units (NCUs) have been established by the project that will act as liaisons to the NIMCs and assist in the harmonisation of local and national policies that effectively align SAP priorities at local, national and regional scales.

Institutional and human resources capacity will be assessed and strengthened supported by secure financial arrangements to ensure integrated approaches to the SAP priorities can be sustained in the longer term. Through improved planning and coordination, the TDA, SAP, and NAPs will be updated to address the changing contexts in the region in light of emerging issues and priorities, including climate change.

To improve understanding on climate change, the project will conduct climate change analysis and develop decision-making tools and climate change case studies for managing marine and coastal ecosystems.

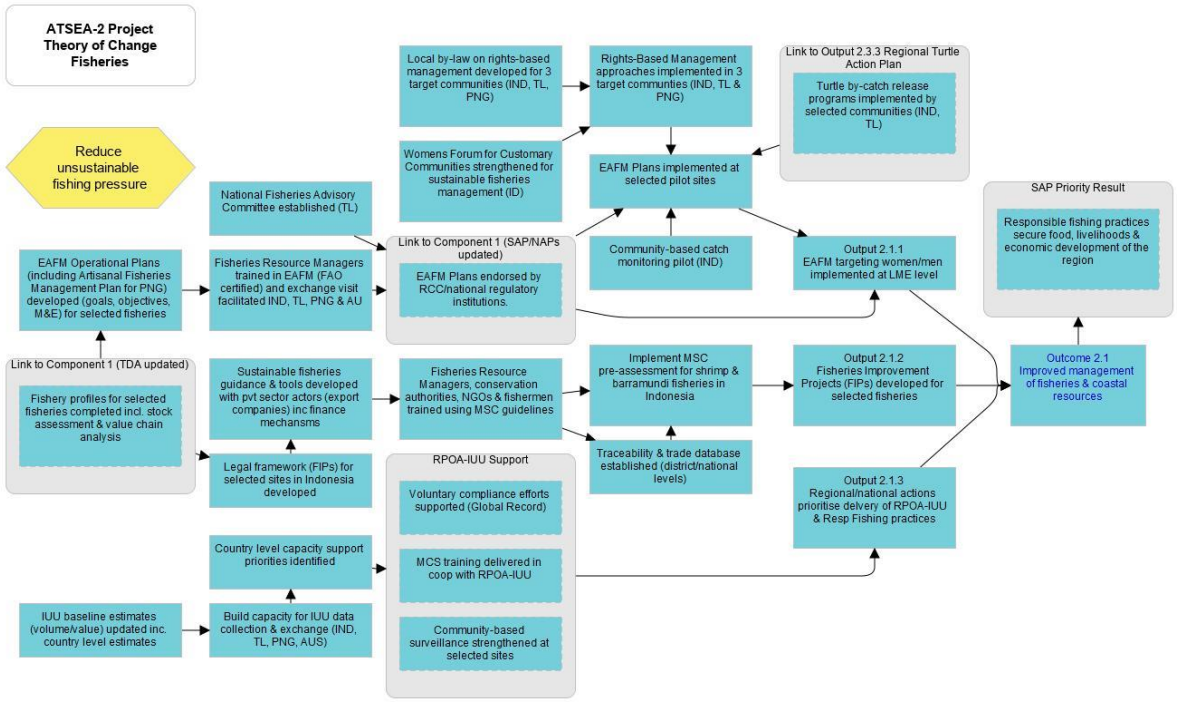
Component 2 - Improving LME Carrying Capacity to Sustain Provisioning, Regulating and Supporting Ecosystem Services

Component 2 aims to support the maintenance of ecosystem services and livelihoods by implementing actions that collectively reduce the direct threats to the region. The theory of change suggests that by implementing strategies and actions to improve fisheries management, protect habitat and species, reduce marine pollution and implement an integrated coastal management approach or ICM, the environmental concerns identified by the SAP TDA will be reduced.

Given the number of outcomes (4) contained within component 2, each outcome has been separated for clarity and summarised with individual theory of change diagrams.

Fisheries

Diagram 4. ATSEA-2 Project Theory of Change (Results Chain) for Component 2 - Fisheries



Legend Table	
Strategy	Intermediate Result

Fisheries management improvements will be established through three streams of work:

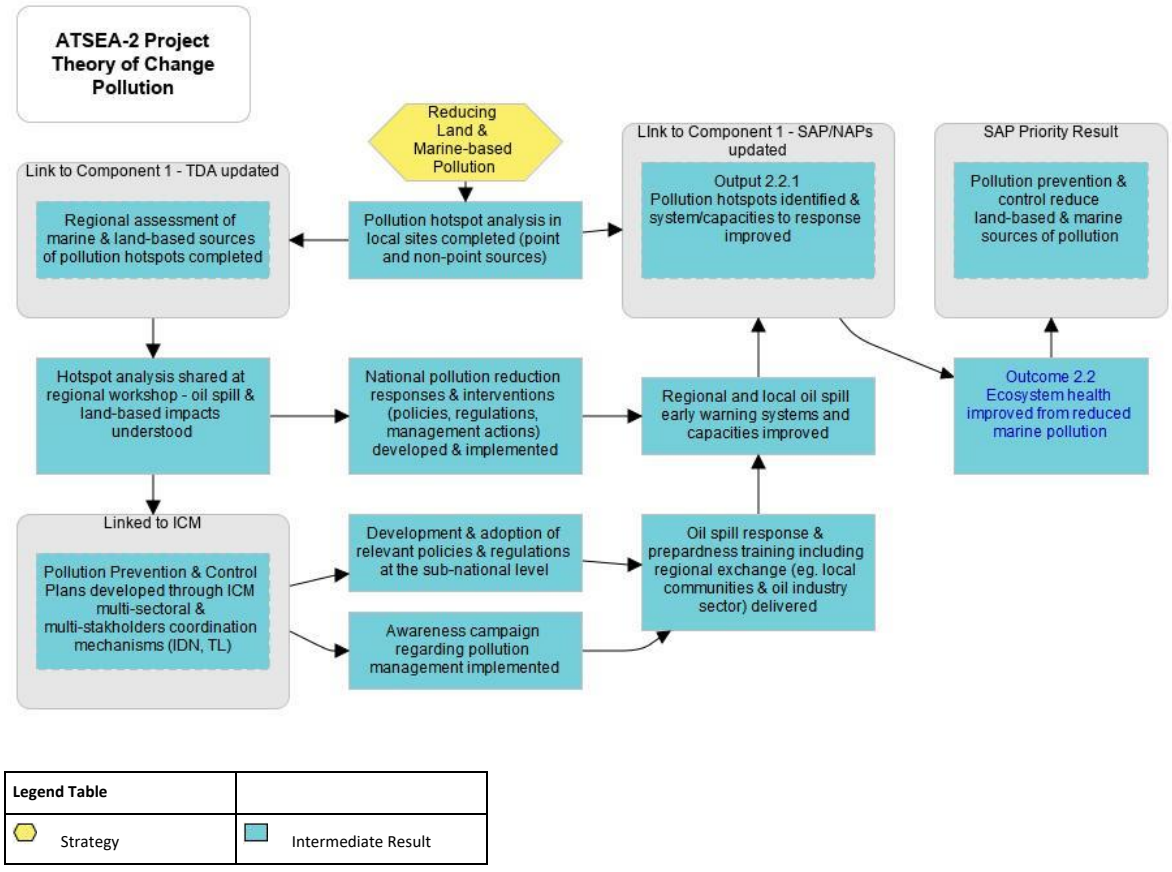
1. Adoption of an Ecosystem-based Approach to Fisheries Management (EAFM) - while also acknowledging rights-based fisheries management;
2. Supporting regional and national efforts to combat illegal, unreported, and unregulated (IUU) fishing; and
3. Supporting fisheries improvement projects (FIPs).

Project initiatives have been designed to demonstrate the benefits of responsible fishing practices to local communities and businesses as well as supporting local livelihoods. Local fisheries resource managers (both women and men) will be trained in EAFM and MSC processes. EAFM training will support the mainstreaming of EAFM across the ATS Region, while MSC training will support the development of FIPs for selected fisheries (red snapper, shrimp, barramundi), in Indonesia - and ultimately move these fisheries towards MSC certification.

Support for the Regional Plan of Action for IUU will include an assessment of IUU of both small and large-scale fisheries across the region, including stock levels and value chain data. The assessment aims to develop accurate IUU baseline information to support monitoring, control, and surveillance systems across the region.

Marine Pollution

Diagram 5. ATSEA-2 Project Theory of Change (Results Chain) for Component 2 - Marine Pollution

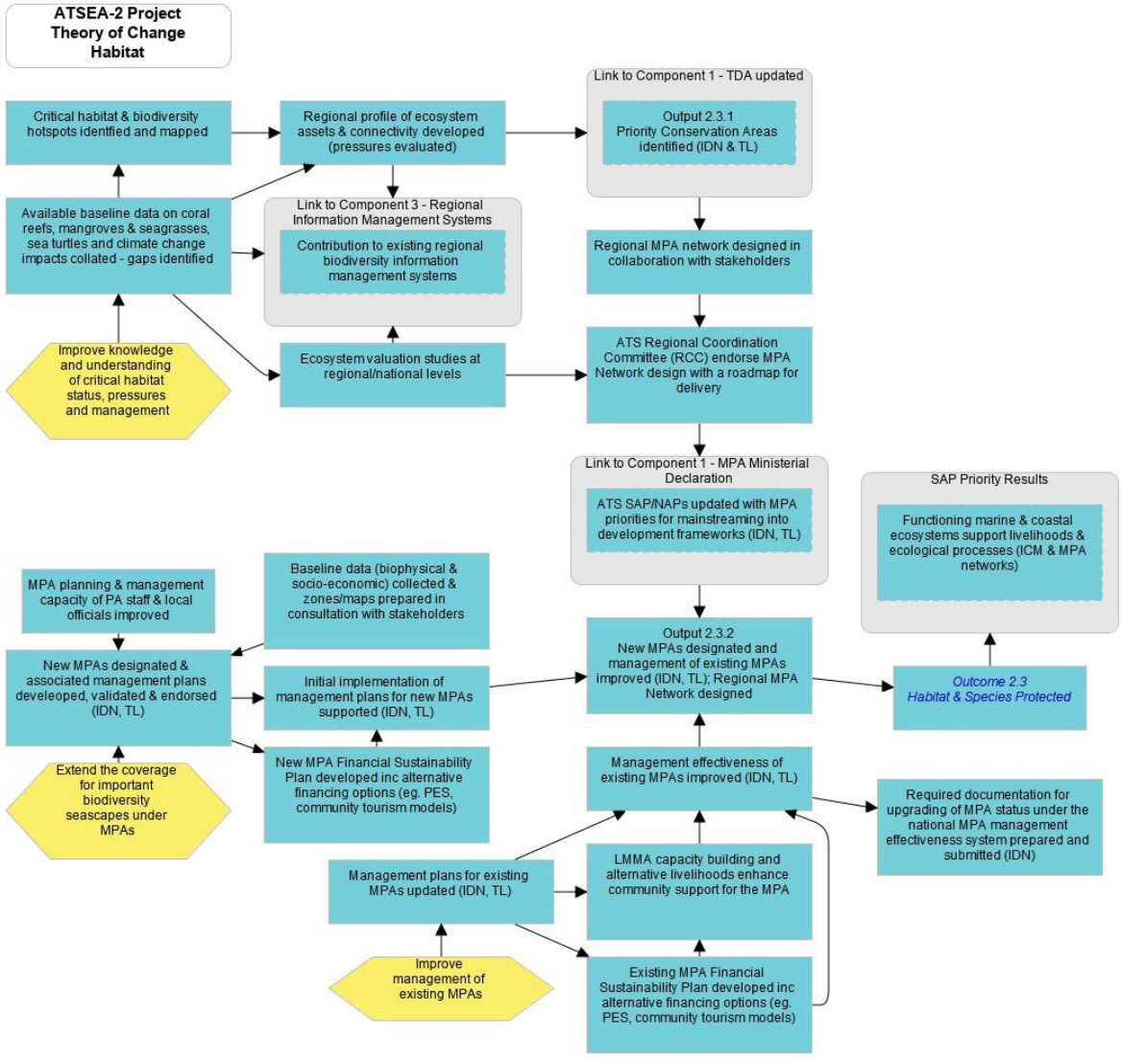


A regional and local pollution hotspot analysis will be undertaken to identify sources and sinks of contaminants. These results will inform the development of pollution prevention and control plans and ICM plans for selected communities in Indonesia and Timor-Leste.

At the national level, the hotspot analysis will support the development of national and sub-national pollution reduction strategies. Planned regional exchanges and training that include local communities and the oil industry sector aims to build capacity for oil spill preparedness and response, including the development of oil spill early warning systems at regional and national levels.

Habitat

Diagram 6. ATSEA-2 Project Theory of Change (Results Chain) for Component 2 - Habitat



Legend Table	
Strategy	Intermediate Result

The protection and restoration of marine and coastal habitats will be supported through three complimentary strategies:

1. Improving the knowledge and understanding of critical ATS habitats - to inform the development of a regional profile of ecosystem assets and connectivity - and identify key priority conservation areas across Timor-Leste and Indonesia;
2. Establish new MPAs that extend the protection for important biodiversity seascapes - with effective management and financial sustainability plans in place; and
3. Improve the management effectiveness of existing MPAs that are supported with adequate financing options.

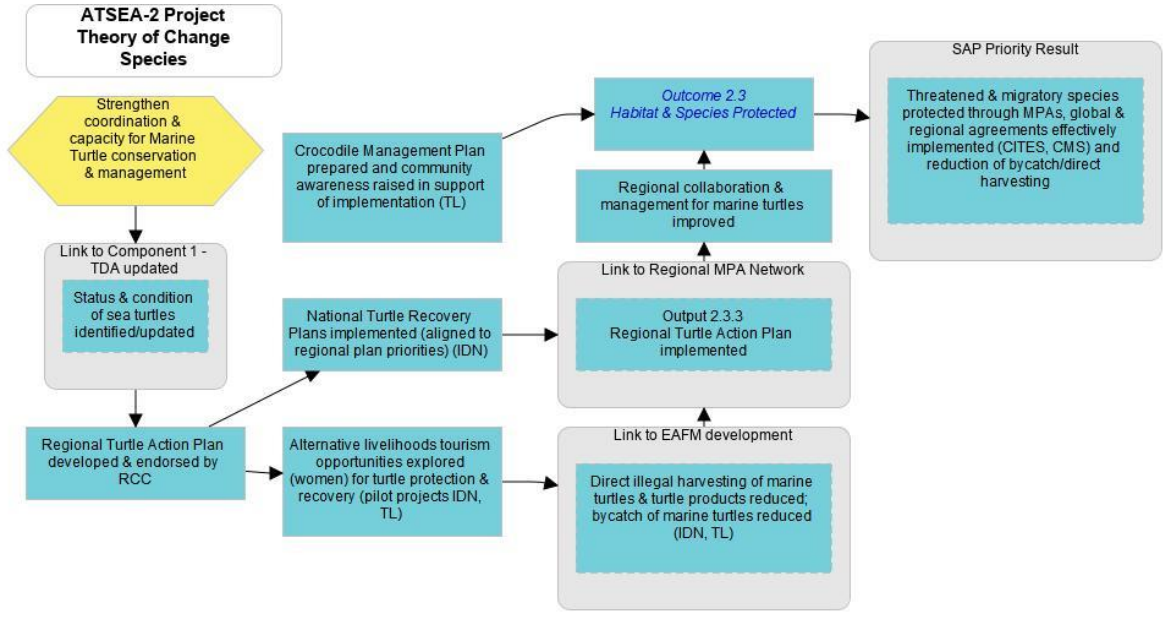
Updated profiles of marine ecosystems in the ATS region and an ecosystem valuation will help to identify high conservation value sites across the region and support the designing and endorsement of a planned network of marine protected areas (MPAs).

The project will support capacity building of MPA staff and local officials together with the development of a baseline assessment and mapping that will assist in the designation of new MPAs and associated management plans. Financial sustainability plans for both new and existing MPAs will be developed and include alternative financing options such as payments for environmental services (PES) or community tourism models to provide secure alternative livelihoods.

Implementation of the plans will focus on engaging local communities in participatory management of both new and existing MPAs, as well as locally managed marine areas (LMMAs).

Species

Diagram 7. ATSEA-2 Project Theory of Change (Results Chain) for Component 2 - Species



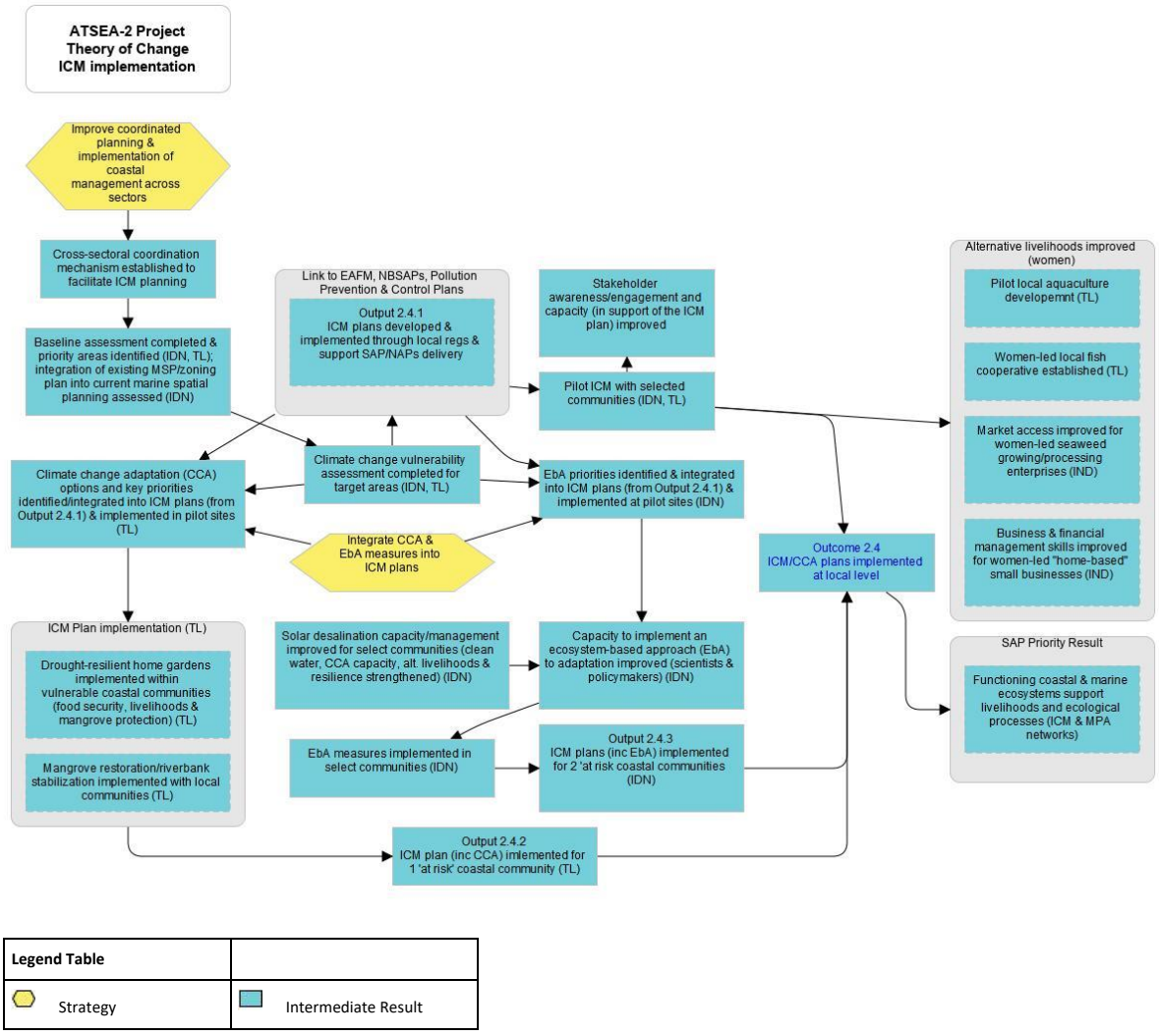
Legend Table	
Strategy	Intermediate Result

The project aims to improve regional collaboration and capacity for the protection of threatened, endangered and protected species. In particular, the status and condition of marine turtles will be assessed and inform the development of a Regional Turtle Action Plan. The action plan will support the recovery of marine turtles and include by-catch reduction measures and community projects in support of marine turtle conservation. The potential for establishing eco-tourism opportunities and associated alternative livelihoods is expected to lead to the reduction of illegal direct harvesting of marine turtles and turtle products.

Through improved regional collaboration and management of marine turtles, it is expected that global and regional agreements for turtle conservation (CITES, CMS) will be more effectively implemented.

Integrated Coastal Management (ICM) Plans

Diagram 8. ATSEA-2 Project Theory of Change (Results Chain) for Component 2 - Integrated Coastal Management (ICM) Plans



Legend Table	
Strategy	Intermediate Result

To accelerate the implementation of integrated coastal management (ICM) across the region, the project will employ two strategies aimed at improving the coordination and management of ICM across the relevant sectors and ensure that both climate change and ecosystem-based adaptation measures are incorporated into ICM planning.

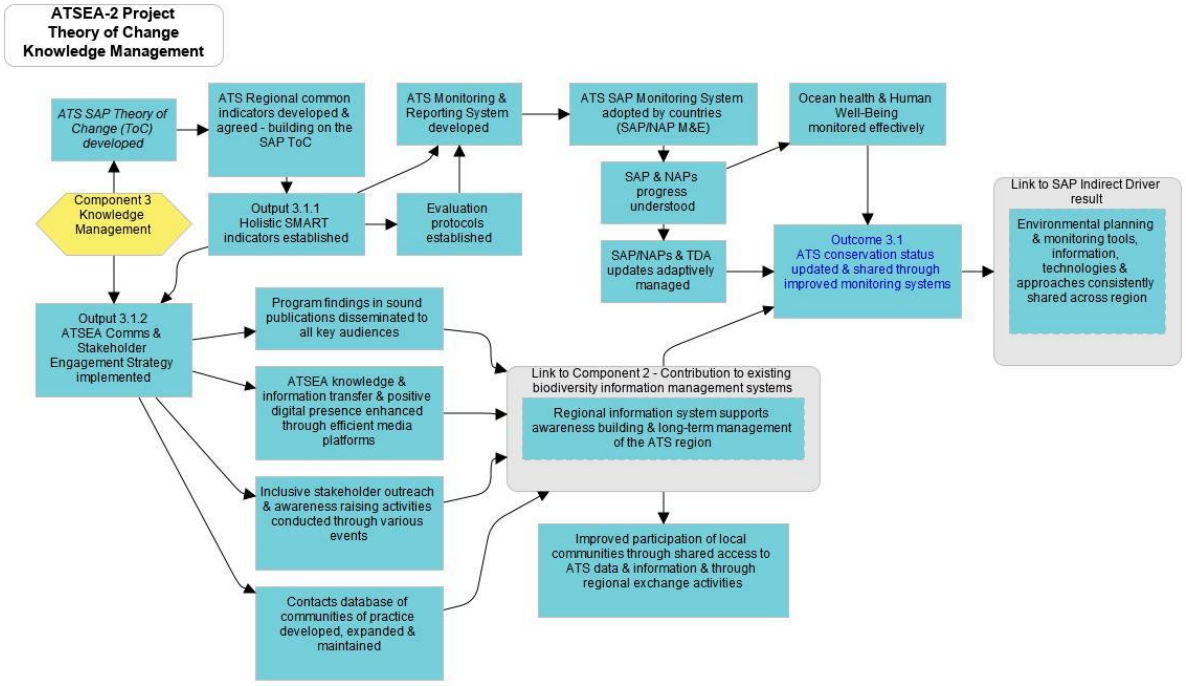
A cross-sectoral coordination mechanism will be created to secure the political and financial commitment to establish legally binding integrated coastal management plans. ICM plans will be developed and implemented through the adoption of local regulations and piloted with selected communities in Timor-Leste and Indonesia.

The plans aim to directly contribute to the development of alternative livelihood opportunities - particularly for women - through a range of initiatives such as local aquaculture development; a women's fish cooperative; establishing markets for women-led seaweed enterprises and supported through capacity building initiatives to improve the business and financial management skills of women.

The development of ICM plans is expected to integrate national action plan priorities, biodiversity conservation, climate change and ecosystem-based adaptation measures and result in improved resilience of local communities as well as strengthened climate-resilient ecosystems such as mangrove forests.

Component 3 - Knowledge Management

Diagram 9.ATSEA-2 Project Theory of Change (Results Chain) for Component 3 - Knowledge Management



Legend Table	
Strategy	Intermediate Result

Component 3 establishes a knowledge management platform to centralise and share all ATS-related information and contribute to other related regional and national information systems.

The development of an agreed set of 'common' indicators will create efficiencies in data capture at multiple scales (project, SAP, and NAPs) and provide the foundation for a region-wide ATS Monitoring & Reporting System.

Lessons learned during implementation will be used to adaptively manage regional/national implementation and drive the replication and scaling up of project interventions and best practices. Progress, key findings and good practices will be shared at relevant international and regional meetings and forums.

To maximise the opportunities for the successful adoption of lessons learned and best practices, a communications and stakeholder engagement strategy will be implemented to improve the participation and understanding of end users. By making information more easily accessible - local communities are likely to feel more empowered and lead to more meaningful participation in national and local planning and implementation processes.

The communication strategy implementation tools will include, but not limited to, an enhanced ATSEA website, social media, e-newsletter, publications, and videos in English and national languages, and contributions to IW:LEARN.

SUMMARY

The ATSEA-2 Project is designed to support the implementation of the wider ATS Strategic Action Programme (SAP) and related National Action Programmes (NAPs), with the long-term objective "*to promote sustainable development of the ATS region to improve the quality of life of its inhabitants through restoration, conservation and sustainable management of marine and coastal ecosystems.*"

The ToCs have been developed to demonstrate the linkages between the Transboundary Diagnostic Analysis (threats and drivers), ATS Strategic Action Programme (priority results), and the contribution of ATSEA-2 to regional and national level conservation and human well-being outcomes.

The project-level theories of change (ToC), and accompanying narratives, help provide a more succinct description of the project's strategic plan (PRODOC). The purpose is to help communicate 'how and why' the various project activities will lead to the expected results, what are the main outputs/outcomes, how are the results causally linked, and who are the key actors/stakeholders at the regional and national levels.

The ToCs together with the development of a monitoring and reporting system will help to assess progress towards specific outcomes and test the assumptions made in the project strategy. Adaptively managing the project - through a continuous learning process - will help to identify areas of concern, what works and what doesn't and minimise risks where possible. Lessons learned will be shared across the region and support the scaling up and multiplication of successful interventions.

REFERENCES

Arafura and Timor Seas Ecosystem Action Program (2012). Strategic Action Programme for the Arafura and Timor Seas Region.

ATSEA-2. 2021. ATSEA-2 Annual Report 2020: Adapt. Innovate. Deliver. Arafura and Timor Seas Ecosystem Action Phase II (ATSEA-2), Bali, Indonesia.

Guidelines on Core Indicators & Sub Indicators, Global Environment Facility, ME/GN/02, 2019.

IUCN - CMP Unified Classification of Direct Threats, version 3.2, 2012.

Millennium Ecosystem Assessment, 2005. Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.

Miradi - Adaptive Management Software for Conservation Projects. Copyright 2005-2018, Foundations of Success, Bethesda, Maryland on behalf of the Conservation Measures Partnership. (CMP).

National Action Programme Timor-Leste for the Arafura and Timor Seas Region (2012).

National Action Programme Indonesia for the Arafura and Timor Seas (2013).

Open Standards for the Practice of Conservation. Conservation Measures Partnership, version 4.0, 2020.

PRODOC: Implementation of the Arafura and Timor Seas Regional and National Strategic Action Programs (ATSEA-2), 2017.

Transboundary Diagnostic Analysis for the Arafura and Timor Seas Region, ATSEA (2012).

ANNEX 1 - ATS SAP TARGETS AND INDICATORS

SUSTAINABLE FISHERIES

Core Indicator(s) description (GEF): *Globally over-exploited fisheries moved to more sustainable levels (metric tons) area of marine habitat under improved practices to benefit biodiversity (hectares; excluding protected areas).*

- Number of fisheries that meet national or international third-party certification that incorporates biodiversity considerations

Target 1.1 - 15-20% reduction of IUU fishing

Potential Indicators:

- Adherence of ATS countries to international and regional commitments related to combating IUU fishing and sustainable fisheries (e.g., NPOA-IUU, FAO Code of Conduct for Responsible Fisheries, etc.)
- National policies and laws and enforcement mechanisms
- Incorporation of customary management into fisheries management plans
- Regional and national mechanism in support of RPOA-IUU and NPOA-IUU
- Reduced fishing pressure (harvest reduction; fleet size) from base year
- Reduced illegal fishing activities (incidents/apprehensions; value loss- tonnes US$; volume loss- tonnes) from base year
- Harmonized measures of regional and sub-regional initiatives related to IUUF and Monitoring, Control and Surveillance (MCS), and information sharing
- Awareness building on sustainable fisheries and provision of alternative livelihood

Target 1.2 - X % of small & industrial scale fisheries adopt and effectively implement EAFM

Potential Indicators:

- Adherence of ATS countries to international and regional commitments related to sustainable fisheries (e.g., FAO Code of Conduct for Responsible Fisheries, etc.)
- National policies and laws and enforcement mechanisms
- EAFM plan in place at the regional and local level (target sites) for specific/selected fish species
- Measures implemented for rebuilding or protecting fish stocks including alternative management approaches (e.g., MPAs/no take zones, seasonal harvest, mesh size, gears, area of marine habitat under improved practices to benefit biodiversity (hectares; excluding protected areas)
- Provision of alternative livelihoods (e.g., sustainable aquaculture)
- Over-exploited fisheries moved to more sustainable levels (metric tons) OR Number of over-exploited fisheries moved to more sustainable levels from base year
- Metric tonnes certified (fish, seafood) from base year
- Percentage market share (uptake) for key certified commodities from base year
- Endorsement of FIPs by MMAF DG

HABITAT LOSS AND DEGRADATION

Target 2.1 - At least 20% of marine & coastal habitats are protected and effectively managed (including mangroves, coral reefs and seagrass beds).

Core Indicator description (GEF): *Marine protected areas created or under improved and integrated management for conservation and sustainable use.*

Core Indicator description (GEF): *Area of seascapes under improved practices (hectares; excluding protected areas)*

- Area of seascapes under improved management to benefit biodiversity (qualitative assessment, non-certified)
- Area of seascapes that meet national or international third-party certification and that incorporates biodiversity considerations
- Area of landscapes under sustainable land management in production systems
- Area of High Conservation Value forest loss avoided

Potential Indicators

- Adherence of ATS countries to international and regional commitments related to biodiversity and habitat protection and conservation (e.g., CBD, Ramsar Convention, etc.)
- National policies and laws and enforcement mechanisms on biodiversity protection
- Total marine and coastal protected areas covered by legal status from base year (hectares)
- Total area of MPAs under improved management (measured through E-KKP3K, METT, etc.)
- Total area of new MPAs established from base year (hectares)
- Regional network of MPAs established (or % increase in connectivity of MPAs - for discussion with NCUs)
- Number of MPAs with financial sustainability plans in place
- Number of local sites incorporating MPA establishment/management in ICM plans
- Number of communities involved, and people trained on sustainable livelihoods, including alternative/ supplementary livelihoods (as part of integrated management of MPAs).

POLLUTION PREVENTION AND CONTROL

Core Indicator description (GEF): *Area of marine habitat under improved practices to benefit biodiversity (hectares; excluding protected areas)*

- Number of Large Marine Ecosystems with reduced pollution and hypoxia Amount of Marine Litter Avoided
- Number of countries with legislation and policy implemented to control chemicals and waste
- Number of low-chemical/non-chemical systems implemented, particularly in food production, manufacturing, and cities

Target 3.1 - X % reduction (from baseline) of nutrients in coastal waters

Potential Indicators

- Adherence of ATS countries to international and regional commitments related to land-based pollution reduction and prevention (e.g., Bali Declaration on the Protection of Marine Environment from Land-based Activities, etc.)
- National pollution and waste management policies and laws and implementation mechanisms
- Hotspots identified across ATS - for nutrients (N, P & BOD kg/yr); for solid waste (tonnage of waste generated, received in landfills/dumpsites, received at recycling sites, recovered and resold); for sanitation and domestic sewerage (access to improved sanitation, connection to septic tanks, septage collected or treated, public sewerage system, domestic wastewater generated, recycled & reused); for industrial, agricultural and hazardous wastes (volume generated, recycled, reused treated)
- Pollution management plans and implementation mechanisms in identified hotspot areas (with funding and trained personnel)
- Pollution monitoring & reporting programs in place in identified hotspot areas (pollution monitoring stations; frequency of monitoring & reporting;
- Capacity and awareness building programs/measures

Target 3.2 - X% (from baseline) reduction of marine based pollution

Potential Indicators

- Adherence of ATS countries to international and regional commitments related to marine pollution reduction and prevention (e.g., IMO conventions, etc.)
- National marine-based pollution management policies and laws and implementation mechanisms
- Sub-regional arrangements to facilitate coordination on oil spill preparedness and response, and marine debris reduction from land and sea-based sources
- National oil spill preparedness and response plan and implementation mechanisms in ATS member countries and in hotspot local sites (plan available, scope of plan, equipment/facilities available, monitoring program in place, early warning systems in place, budget and staff allocation)
- National marine litter plans and programs and in hotspot local sites (plan available, scope of plan, equipment/facilities available, monitoring program in place, budget and staff allocation)
- Marine debris monitoring & reporting programs in place at national and subregional levels (Reduction of marine debris compared to baseline; Reduction in amount of derelict fishing gear (DFG) in the ATS)
- Capacity and awareness building programs/measures

PROTECTING KEY MARINE SPECIES

Target 4.1(a) - 10 - 20% of critical habitat for threatened & migratory marine species are protected through formal mechanisms

Target 4.1(b) 20% reduction of direct/indirect harvesting of threatened & migratory species

- Adherence of ATS countries to international and regional commitments on the protection of key and endangered marine species (CITES, CMS, CTI, etc.)
- Regional and national actions and plans to conserve threatened or migratory species/ Regional and national biodiversity conservation plans in place (i.e., RPOA for Enhanced Protection of Marine Turtles in ATS Region, NBSAPs)
- National policies and laws and enforcement mechanisms
- Inclusion of conservation of threatened and migratory species in MPA design (Area allocated for the protection of rare and endangered species e.g., marine turtles, wildbirds, etc.) (km^2)
- Provision of alternative and supplementary livelihoods compared to baseline (increase in income)
- Capacity and awareness building programs/measures
- Reduce by-catch from base year
- Reduce direct harvesting from base year

CLIMATE CHANGE ADAPTATION

Target 5.1 - > 60% of at risk coastal communities & ecosystems have increased resilience to CC impacts

Core Indicator Description (GEF): *Greenhouse gas emissions mitigated (metric tons of carbon dioxide equivalent)*

- Carbon sequestered, or emissions avoided in the sector of Agriculture, Forestry and Other Land Use
- Emissions avoided outside Agriculture, Forestry and Other Land Use (AFOLU) sector
- Energy saved
- Increase in installed renewable energy capacity per technology

Potential Indicators

- Adherence of ATS countries to international and regional commitments related to climate change adaptation (e.g., UNFCCC, etc)
- National climate change adaptation and disaster risk reduction policies and laws and enforcement mechanisms
- Vulnerability assessments and risk analyses
- CCA and DRR plans and strategies and implementation mechanisms (i.e., incorporation of climate change concerns in existing plans like ICM, MPA, etc.)
- Early warning system and information/communication systems in place
- Capacity and awareness building programs and activities
- Climate-change resilient technologies/practices

- Provision of climate resilient livelihoods
- Monitoring and reporting system in place
- Increase in climate change resilience of ecosystems (e.g.presence of resilient species of mangroves, corals, seagrass? Improved species abundance/density/diversity?)
- Increase in climate change resilience of communities (e.g., increased natural coastal protection; reduction in social and economic losses during disaster events (economic losses, people severely affected, lives lost); climate resilient livelihoods (diversity of livelihood/income sources, multi crop systems, using resilient plant species, etc.)

Regional Governance

Regional collaboration on the transboundary issues depends heavily on the 'value-add' a regional governance mechanism brings to each of the four implementing countries. By strengthening regional cooperation, supported by appropriate and enforced legal and policy frameworks, the enabling environment necessary to stimulate financial and human resources investments (both public and private) will emerge and create efficiency in delivery of shared SAP and NAPs priorities.

STRENGTHEN THE REGIONAL GOVERNANCE OF THE ATS REGION

Target 6.1 - Establish a regional mechanism for cooperation

Core indicator description: *Extent to which a regional mechanism for cooperation ensures coordination and capacity building*

(1) Regional cooperation mechanism
Possible indicator: ATS regional governance mechanism, including a Regional Coordination Committee (RCC) convening (at least) on an annual basis, a Regional Secretariat to coordinate implementation of RCC decisions, and a Stakeholder Partnership Forum (SPF)to facilitate cross-sectoral representation and inputs to RCC, established formally thru a regional agreement.

(2) Support mechanisms at national level (i.e., interministerial, intersectoral)
Possible indicator: Number of countries with formally established national support mechanisms for ATS SAP and NAP implementation, including inter-ministerial/cross-sectoral committee(s) convening (at least) on an annual basis and supported by a national coordinator/secretariat.

(3) Common (updated) regional strategy and implementation plan
Possible indicator: 10-Year regional ATS SAP and implementation plan, guided by results and recommendations from SAP and NAP implementation assessments and an up-to-date TDA, formally adopted by member countries

(4) Corresponding national strategy and implementation plan
Possible indicator: Proportion of member countries with developed and adopted (updated) NAP and implementation plan aligned with SAP priorities and mainstreamed into national work/development and budget plans

(5) Policies/legislation in support of SAP or regional strategy
Possible indicator: Number of policies that support SAP/NAP implementation

(6) Financial mechanism or financial support for SAP & NAP implementation
Possible indicator: Amount and types of financing mechanisms or resources (funding and human) allocated to implement SAP/NAP priority actions/activities, as well as ensuring organizational and operational stability of the ATS regional governance mechanism

(7) Partnership building
Possible indicators: Number of partnership agreements developed and implemented, covering technical or in-kind and financial support, to strengthen SAP and NAP implementation (other regional initiatives, bi-lateral and multi-lateral, Private Public Sector Partnerships, Civil Society and Community-led management)

(8) Monitoring and reporting of SAP & NAP implementation
Possible indicators: Unified ATS SAP and NAP monitoring system adopted, and reporting and assessment carried out at the regional and country level on a 5-year and 10-year basis, providing up-to-date information on progress and impacts toward SAP and NAP objectives, key persistent and emerging regional priorities, financial support generated, and recommendations for adaptive management and improvement

Target 6.2 - Establish a Stakeholder Partnership Forum of experts and practitioners involved in research and capacity development activities relevant to the SAP and NAPs.

(1) SPF establishment
Possible indicators: SPF established and functioning as part of ATS regional governance mechanism with representation from LGUs, NGOs/COs (including vulnerable groups), private sector, and academe in each member country, convening (at least) on an annual basis

(2) **Support to development of SAP IP and progress review**
Possible indicator: SPF technical and policy advice submitted to RCC as inputs to SAP IP development and implementation, and inputs to periodic SAP and NAP progress monitoring and review

(3) Support to SAP and NAP implementation
Possible indicators: Number of partnerships generated and collaborative project proposals developed and submitted to RCC in support of SAP and NAP implementation

(4) Development of best practice community-based governance measures
Possible indicator: Knowledge/information and best practices on community-based coastal and ocean governance shared between countries through SPF events and reports.

GEF Output Indicators: Level of Regional Legal Agreements and Regional Management Institution(s) to support SAP implementation

Projects provide a rating on a scale of 1 to 4:
1 = No regional legal agreement, or neither institutional framework nor RMI in place
2 = Regional legal agreement under development
3 = Regional legal agreement signed and RMI in place
4 = Regional legal agreement ratified and RMI functional

Level of national/local reforms and active participation of Inter-Ministerial Committees
Projects provide a rating on a scale of 1 to 4:
1 = Neither national/local reforms nor IMCs
2 = National/local reforms in preparation, IMCs functional
3 = National/local reforms and IMCs in place
4 = National/local reforms/policies implemented, supported by IMCs.

Level of engagement in IW: Learn through participation and delivery of key products
1 = No participation
2 = Website in line with IW:LEARN guidance active
3 = As above, plus strong participation in training/twinning events and production of at least one experience note and one results note
4 = As above, plus active participation of project staff and country representatives at International Waters conferences and the provision of spatial data and other data points via project website.

GEF Indicator for Human well-being: *Number of direct beneficiaries disaggregated by gender as co-benefit of GEF investment*

Potential social outcome indicators
- Extent to which community-based governance institutions for the management of common-pool resources empower resource dependent people
- Level of conflicts and incidents reflecting competition around natural resources
- Proportion of user groups who have exercised rights to access natural resources

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