

TITLE: Man Vs Environment Vs Livelihood

Solomon Ports Mangrove Restoration and Livelihood Project

Introduction

Solomon Islands Ports Authority 2024 WPSP project captures, and merge two major themes integrated.

WPSP THEME captures.

Two of the main WPSP themes integrated in this project are:

1. Environmental Care
 - the topic covered includes:
 - Protecting Habitats and enhancing biodiversity,
2. Community Building
 - the topic Covered includes:
 - Community and social engagement programmes
 - Education and employment initiatives
 - Gender Equality.



Executive Summary

Man, Vs Environment Vs Livelihood

Solomon Ports Mangrove Restoration and Livelihood Project

Mangroves are vital ecosystems that protect coasts, store carbon, and support biodiversity, but they are threatened by human activities and climate change.

Solomon Ports embarked on a project to restore and regenerate a depleted mangrove forest in one of the remote islands in the Solomons where this ecosystem previously existed. This restoration project is grounded in the discipline of restoration ecology, which aims to assist the recovery of resilience and adaptive capacity of ecosystems that have been degraded, damaged, or destroyed due to human activities.

This project aims to restore the natural functions and values of degraded mangrove areas, using ecological principles and local knowledge through a project that support people's livelihood in order to prevent humans resorting to mangroves as they primary mode of survival in this small atoll in the Langalanga lagoon, Solomon Islands

This project will focus on:

Community Engagement through Environmental Care: Solomon Ports prioritizes working closely with local communities residing near critical mangrove ecosystems. Awareness campaigns have been conducted to educate residents on the importance of mangroves and empower them to participate actively in restoration efforts. This collaborative approach fosters a sense of ownership and ensure the long-term success of the project as they understand the importance of mangroves in their own living environment.

Strategic Planting: Through careful ecological assessments based on collective experiences within the community, Solomon Ports have identified areas in dire need of mangrove rehabilitation. Native mangrove species have been identified and chosen specifically for their suitability to the local environment, maximizing their growth potential and ecological impact.

Long-Term Monitoring: Solomon Ports understands that planting mangroves is just the first step. To ensure their survival and thriving, a dedicated monitoring program has been established. This involves regular inspections to track growth progress, identify potential threats, and implement necessary corrective measures. Also, Invested in Livelihood initiatives like Beekeeping, raised bed vegetable gardens and seaweed farming to prevent the community resorting into mangroves as a source of income when they cut and dry in the sun as firewood for local sale.

By combining Solomon Ports commitment with the knowledge and stewardship of local communities in the Langalanga lagoon, this mangrove reforestation project has the potential to create a significant positive impact not only to a focused community but also on the Solomon Islands' environment. The restored mangroves will act as a natural barrier (nature-based solution) against coastal erosion, provide vital habitat for marine life, and contribute to a healthier and more sustainable future for the islands in the future.

Main Topic: Mangrove Restoration and Livelihood Initiatives

Building a sustainable community

The Langalanga Lagoon people's way of life presents a powerful case for collaboration between environmental initiatives and economic development.

Solomon Ports' (SIPA) long term- decarbonization efforts connects with mangrove restoration and align with broader sustainability goals are as follows:

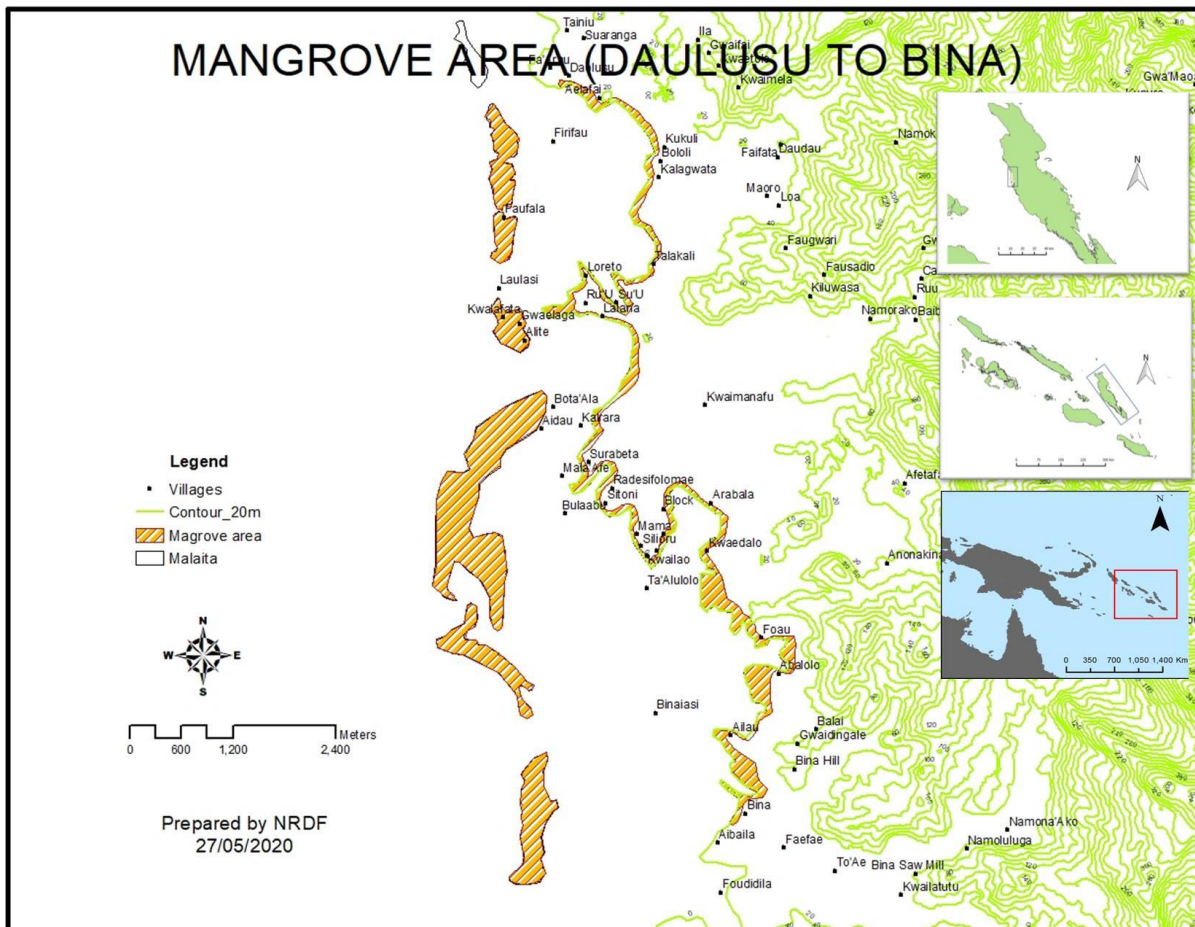
Collaboration for Sustainability: Solomon Port's goal towards a greener port and the call for shipping decarbonization has steered our course to a mangrove restoration project in the Langalanga Lagoon region. Reduced carbon emissions from shipping translate to less air and water pollution, creating a healthier environment for the lagoon's ecosystem. This, in turn, benefits the Langalanga people by ensuring the continued abundance of fish, shellfish, and the raw materials needed for their shell money production at a sustainable and long-lasting traditional practice.

SDGs in Action: This collaborative effort directly addresses several Sustainable Development Goals (SDGs) set by the United Nations. Protecting the Langalanga Lagoon's ecosystem aligns with **SDG 14** (Life Below Water) and **SDG 13** (Climate Action). Reduced emissions from shipping contribute to SDG 3 (Good Health and Well-being). By supporting the Langalanga people's livelihood, the project contributes to SDG 8 (Decent Work and Economic Growth) and SDG 10 (Reduced Inequalities) through gender equality as this project is a women driven initiative through Langalanga Women in Business Association.

Alignment with IAPH: The International Association of Ports and Harbors (IAPH) strongly advocates for environmental responsibility. Solomon Ports' decarbonization efforts and the mangrove restoration project directly resonate with IAPH's environmental stands as an associate. This initiative showcases how ports, despite their size whether big or as small as SIPA can take a proactive role in protecting ecosystems and supporting sustainable practices within their communities. This successful collaboration can serve as a model not only for communities around the Solomon Islands but also for other port authorities around the world.

Project Site, Population, size

The focus area is in Malaita Province, Langalanga lagoon, a home to about 11,000 people capturing Five (5) pilot communities that are taking ownership of seeing this project comes to fruition.



Problem Identified by this project.

The Langalanga Lagoon people, also known as "saltwater people," have a unique and resilient culture built around their island environment. Forced by historical conflicts to flee inland Malaita, they constructed their lives on small, artificial islands within the lagoon. Fishing and, notably, shell money production are their backbones of survival. Shell money, made from various shells and a vital part of their social and economic life, thrives due to the lagoon's rich biodiversity.

However, this way of life faces challenges. Depletion of mangrove forests, crucial for maintaining the lagoon's health, threatens the fish and shellfish populations. Climate change, with rising sea levels and more extreme weather events, further disrupts their delicate balance. The Langalanga people's future depends on adapting to these environmental threats while preserving their sustainable practices and cultural heritage.

Project Activities and Output.

Project activities include two major initiatives, they are mangrove restoration and livelihood initiative. To effectively have a successful mangrove restoration plan, we took the human-centric approach by creating and encouraging livelihood incentives and alternative streams of economic growth. The main objective of Solomon Port's intervention is to increase production, enhance accessibility to resources and promote sustainability of the people of Langalanga. These activities identified on site includes:

1. Mangrove Restoration: (9 Months Process Early stages)

- Conducted community consultations to identify degraded mangrove areas and suitable sites for restoration (UNSDG 13: Climate Action, UNSDG 17: Partnerships for the Goals). About 100 hectares of deforested, depleted mangroves were identified.
- Selecting native mangrove species suitable for the local environment (UNSDG 15: Life on Land). Planting will use a variety of mangrove species: Bruguiera, Lumnitzera, Rhizophora, and Ceriops.
 - Species were planted in areas that best suit them, mimicking their natural distribution.
- Established mangrove nurseries to cultivate seedlings (UNSDG 12: Responsible Consumption and Production).
 - Seedlings were collected from existing Langalanga Lagoon forests and other provinces for genetic diversity.
- Organized community planting days to promote ownership and participation (UNSDG 13: Climate Action).
- Implementing monitoring and maintenance programs to ensure seedling survival (UNSDG 15: Life on Land).

2. Livelihood Initiatives:

- **Beekeeping:**
 - Train community members on beehive construction, management techniques, and honey harvesting (UNSDG 8: Decent Work and Economic Growth). Solomon Ports have identified and increased the beehive boxes from current 1 beehive to multiple beehives per community to increase production. These bee type farmed here are call the Italian Bee which creates some of the quality tastes of organic honey in the Solomon Islands. It has now been survived for almost 30 years in the Solomon Islands since it first introduced and still thrives in the mangrove forest environment.
 - It has been established that Six honeybee hives (one in each 6 communities) in the project site in LLL with a production capacity of 240 liters of honey per annum. Increasing these beehives in this ongoing initiative multiplies these productions
 - Integrate beehives within the restored mangrove forests, creating a natural food source for the bees and promoting pollination (UNSDG 15: Life on Land).
 - Establishing a cooperative system for honey production and marketing, creating a sustainable income source (UNSDG 8: Decent Work and Economic Growth). Potentially earning SBD\$57,000.00 for the bee keeping families in the project sites per annum projected an increase by end of this year.
- **Seaweed Farming:**

- Training the communities on seaweed aquaculture techniques, including selecting appropriate seaweed strains and building low-cost mariculture structures (UNSDG 2: Zero Hunger, UNSDG 4: Quality Education). Seaweeds nurseries are transported from inter islands from the Northern part of the Island of Malaita and Western Province to help with regrowth and selected species.
- Identified suitable locations within the lagoon system for seaweed farms, ensuring minimal interference with traditional fishing grounds within the boundaries of the mangrove zones (UNSDG 14: Life Below Water).
- Establishing a network for processing and marketing dried seaweed products, creating economic opportunities (UNSDG 8: Decent Work and Economic Growth).
- **Vegetable Gardening in Low Atolls:**
 - Introducing techniques for vertical gardening and hydroponics suitable for limited land spaces (UNSDG 2: Zero Hunger, UNSDG 11: Sustainable Cities and Communities).
 - Training participants on selecting resilient vegetable varieties and organic gardening practices (UNSDG 12: Responsible Consumption and Production).
 - Establishing community gardens to promote food security and potentially create surplus for local markets (UNSDG 2: Zero Hunger).

Project Outcomes:

- A diverse and healthy mangrove ecosystem will be re-established using a variety of native species.
- Planting mimics natural distribution patterns for optimal growth and survival.
- Increased genetic diversity will be achieved by collecting seedlings from multiple sources. More than 100 hectares of depleted mangroves replanted with variety of species.
- Creating a valuable resource for the local community and contributing to climate change mitigation.
- Increased the quantity of carbon sink through mangrove restoration which captures 100x than any other plant species.

Appendix

Picture highlights of human activities and factors resulting in Mangrove depletion. (Note: More detail pictures in link provided with this report)







Figure above shows the depleting mangroves due to increased population, land clearing and human activities. Used as firewood for cooking, reselling, house footings, beams, and flooring and boat building sheds.



Above figure shows impacts of coastal erosion and sea level rise in the Langalanga lagoon.




Results of outcomes

Initiative Component 1: The mangrove planting process and life cycle.


	<p>Seedlings nursery, cross breeding creating sizeable edible mangroves and transplanting.</p>
	<p>3 to 4 months of nursery in one of the nursery beds now sprouting leaves ready to be transplanted to site</p>
	<p>6 months of seedlings planted along the coastlines and in between stone walls of habitats, more than a 1000 mangrove plants have been distributed and planted in designated coastal regions.</p>
	<p>Historically, this mangrove species tree is about 20 years old in of the sites that this project is striving to achieve. These types of species can be grown in the wetland and swampy areas just inland of the coastlines and its fruit is edible to the people.</p>

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Initiative Component 2: Beekeeping Farm

	<p>Beehive wax in one of the boxes ready to be removed and showcased.</p>
	<p>One of the community women and consultant Mrs. Esther Suti, showcasing honey being already being replenish just after a week of harvesting.</p>
	<p>One of the community member and consultant Mr. Stephen Suti, showcasing the organic honey from one of the wax extracted by hand and extracting tools.</p>

Initiative Component 3: Seaweed Farming for Exports

	<p>Seaweed being farmed and extracted to other sites and for drying to be exported</p>
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Seaweed allocated for exporting. Picture showcases the process as its being dried and ready for packaging.
Market value of SBD\$14/kg (US\$0.14/kg)

Initiative Component 4: Vegetable raised bed in seawalls.





Fresh cabbages and other root crops been boxed and raised in stonewall islands surrounded by saltwater. Hydroponics techniques shared and rolled out as an ongoing pilot project by upgrading and supplied with Seeds and materials.



Cabbages seedlings have been distributed and planted. Women shows first ever harvest since initiated. Cabbage seedlings harvested within 60 days (2 months), which enables women within the community a quick turnaround to replant, resell and buy for basic needs for their family.



Initiative Component 5: Sustaining the traditional practices of Shell Money making to facilitate to empower women through women associations savings club and ceremonial events.

	<p>Women of the Langalanga lagoon of this project briefly showcasing how shells are been crushed to make shell money, necklaces, ornaments, and cultural attires.</p>
	<p>Examples of products by shell making in the Solomon Islands. Picture inserted source: internet web picture by springer link</p>

Component 6: Community Awareness on Environment Care Mangrove significance



Solomon Ports conducting Awareness on the importance of Mangrove Forest and its significance to Climate action, the marine ecosystem and the communities' livelihoods.

Conclusion

This comprehensive mangrove restoration project by Solomon Ports, in collaboration with the community engagement and long-term monitoring, has the potential to significantly restore Solomon Islands' coastal ecosystems. By combining environmental protection with livelihood initiatives, the project fosters a sustainable future for both the islands and their inhabitants. This project's success can serve as a model for other port authorities around the world working towards environmental sustainability. The IAPH and the WPSP members can learn valuable lessons from this initiative and promote its replication in other regions. Healthy mangroves contribute to a more resilient maritime industry by protecting coastlines from erosion, storms, and floods, ensuring safe and efficient port operations. By supporting mangrove restoration projects, SIPA is not only benefiting its local community but also contributing to the global health of the maritime industry its commitment to climate action and sustainability best practices.