CORAL TRIANGLE INITIATIVE

State of the Coral Triangle Report

HIGHLIGHTS

SOLOMON ISLANDS

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Executive Summary

The Solomon Islands National Plan of Action (SI-NPOA): Coral Triangle Initiative on Coral Reefs, Fisheries, and Food Security (CTI-CFF) provides visionary guidance for the management of coral reefs and related ecosystems in the Solomon Islands (Ministry of Environment, Climate Change, Disaster Management and Meteorology and Ministry of Fisheries and Marine Resources, 2010). It is consistent with the CTI Regional Plan of Action (RPOA), but also incorporates local situations and circumstances. Related national initiatives, such as the Strategy for the Management of Inshore Fisheries and Marine Resources (Ministry of Fisheries and Marine Resources, 2010), complement the actions outlined in the SI-NPOA. Another important national initiative that complements the CTI NPOA is the National Biodiversity Strategic and Action Plan 2009.

Physical Geography

The Solomon Islands form a double-chained archipelago of approximately 990 islands, occupying a total land area of 28,000 km^2 and a total ocean area of 1,340,000 km^2. The six main islands are Choiseul, New Georgia, Santa Isabel, Guadalcanal, Malaita, and Makira. They are mostly rugged and mountainous with deep internal valleys and steep slopes that descend immediately into the depths of the oceans. All the main islands are volcanic in origin and are surrounded by barrier, patch, lagoonal, and fringing reefs. Thus, the smaller islands are mostly raised coral islands and atolls.

The **climate** in the Solomon Islands is characterized by a wet and a dry season. The mean **temperature** experienced all year round is 27°C (80°F), but with a few extremes of warm and cold temperatures. The southeast trade winds (*ara*) blow continuously with varying intensity during April to November, while winds blow from west to northwest (*koburu*) from November to April. Tropical cyclones and consequent strong winds are likely to occur from November to April.

Biodiversity of coastal and marine ecosystems

The Solomon Islands have one of the most diverse coral reef systems in the world. Such diversity is attributed to the highly varied marine habitat types present throughout the islands.

Coral reefs and associated ecosystems. Coral reefs are mainly fringing and intermittent around all the islands, although areas north and south of Guadalcanal appear to have no coral patches along the main island. Some of the largest coral reef areas occur where large lagoon complexes are protected by volcanic islands, raised islands, sand cays, and barrier reefs. On the other hand, long barrier and expansive intertidal reef flats are

For the people of Boe Boe in Choiseul , making the 3D model of their island motivated them to "take the initiative on community issues and ensure our traditions and customs are not compromised by development pressures or outside forces such as climate change." Credit: James Hardcastle/TNC

Key Statistics

BIOPHYSICAL AND DEMOGRAPHIC CHARACTERISTICS	
Total land area	28, 000 km^2
Total sea area	1,340,000 km^2
Total coral reef area (NPOA, 2010)	3,591 km^2
Total mangrove area	65,000 ha
Total seagrass area	10,000 ha
Population (2011)	550,000
Annual growth rate (2009)	2.3%
Fish consumption	33 kg/ year (90% fresh fish)

uncommon. At least 485 coral species belonging to 76 genera have been observed in the Solomon Islands, with new species being described. The archipelago may be second only to Raja Ampat in Indonesia in terms of coral diversity.

There are 1,019 **fish species** belonging to 82 families reported in the Solomon Islands. Fish community composition and diversity are believed to be influenced by habitat type and food availability. Majority of sites with rich fish species diversity are observed in the western part of the country.

Information on **marine invertebrates** like molluscs, sea cucumbers, and sponges is limited to their culture or economic value. Interest in sea cucumber species, for instance, is largely due to their high market value. Sea cucumber is an important commodity in the Solomon Islands, and a significant income earner for people living in rural areas. Products are processed and exported to Asian markets, where they are sold for nearly the same prices as shark's fin. However, the lucrative market has contributed to the decline of sea cucumber species in the islands. In a benthic survey of macro-invertebrates, only 17 of the 19 recorded species of sea cucumbers in the Solomon Islands were observed, and those which command high prices were only observed in deep locations.

Mangrove forests are well-distributed across the Solomon Islands and occupy a total area of about 65,000 ha. There occur 31 species, representing almost half of the world's mangrove species. Communities in the Solomon Islands rely on mangroves for food and wood, which is typically used for kindling and construction.

Seagrass beds are significant coastal habitats in the Solomon Islands, occupying about 10,000 ha and including at least 10 species, which represent 80% of the known seagrass species in the Indo-Pacific region. Local communities depend on seagrass beds for specific fisheries, as observed in Lau Lagoon in Malaita, where annual spawning aggregations of rabbitfish occur on seagrass beds.

Cetaceans, sirenians, reptiles. Large marine vertebrates, including whales, dolphins, dugongs, and turtles, occur in the Solomon Islands. Eight whale species, nine dolphin species, and one dugong species, as well as five species of turtles and one species of crocodile have been reported in the archipelago.

Governance

In the Solomon Islands, there are substantive policy documents that provide the framework for national strategies in support of inshore fisheries management, conservation, climate change adaptation, and ecosystem approaches to resource management. The country is a party to several regional and international environmental agreements, which oblige it to protect, sustainably utilize, and manage coral reefs and marine resources.

Laws, such as the *Fisheries Act* (1998), the Wildlife Protection and Management Act (1998), the *Shipping Act* (1998), the *Environment Act* (1998), and the *Protected Areas Act* (2010), provide the legal basis for marine environmental protection, sustainable utilization, and management of marine natural resources. However, despite the existence of laws and regulations, local compliance remains a challenge. Poor compliance at the community level is attributed to various factors such as the need to meet daily subsistence demands and the desire to generate a cash income. Other factors include poor enforcement as well as a deficiency in science-based decision-making.

Social and economic importance of marine resources and ecosystems

In 2011, Solomon Islands had a **population** of 516,000 and an annual population growth rate of 2.3% (Solomon Islands National Statistics

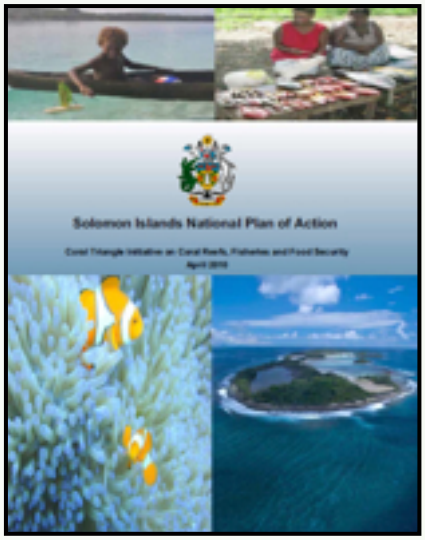
Family members sell skip jack tuna at the Honiara market, Solomon Islands. Credit: Greenpeace

Office, 2011). The population in the urban areas appears to be growing faster than that in the rural areas, primarily because of the rural-urban drift. Only 15.7% of the population is employed, while the rest are categorized as either subsistence or unpaid workers. About 80% of the population lives in rural areas; majority of the communities are found along the coast, while others are situated inland but have access to the sea.

A **subsistence economy** prevails in rural Solomon Islands, with coastal fisheries playing a vital role. There are no figures on the actual extent of fishing activities in the country, let alone subsistence fishing, but it is estimated that nearly half of all women and 90% of men fish. In most rural households, at least one member of each household is involved in fishing. Most rural fishers sell their catch solely to address household needs, but there are also fishers who sell their catch in urban areas.

Commercial fisheries, particularly for tuna, generated an average annual revenue of US$4.5 million for the government from the licensing of domestic and foreign fleets over the last decade. The highest catch for domestic fleets (29,615 tons)since 2000 was recorded in 2006. On the other hand, foreign fleets recorded the highest catch of 89,275 tons in 2008. Total catch increased in this decade with the growth in the number of foreign fleets. On the other hand, there has been a decrease in the size of the domestic fleet. Tuna catch over the past decade has been dominated by skipjack and yellowfin tuna, mostly caught by foreign fleets.

The main **mechanisms for traditional marine resource management** are: (i) access control through customary marine tenure (CMT); (ii) articulation of traditional ecological knowledge (TEK) for resource management; (iii) prohibition of access and exploitation of resources within culturally significant geographical areas; and (iv) prohibition of the consumption of certain species. As CMT regimes are inextricably linked to the social and cultural contexts from which they emerge, traditional practices relating to access control and/or prohibitions vary within and across locales. These may be influenced by



traditional belief systems and/or customs.

The growing population, the shift from a subsistence to a cash economy, and changing beliefs have significant impacts on the fisheries of the Solomon Islands.

Threats, vulnerabilities, and emerging issues

Major threats to coral reefs in the Solomon Islands are **overfishing and destructive fishing**. Issues expected to make substantial impacts on the marine environment are pollution, runoff of excessive nutrients, and coastal development. The Solomon Islands are also prone to natural disasters, such as earthquakes, volcanic eruptions, and tropical cyclones. The occurrence of threatened species, such as whales and dolphins, also calls for management and protection.

The **growing population** will likely increase pressure on fisheries in the archipelago. In highly populated areas and market centers, **heavy exploitation** has led to observable declines in certain species like parrotfish, sea cucumber, giant clam, and green snail. **Destructive fishing** involving both traditional and modern methods is concentrated within Nggela, Langalanga Lagoon (Malaita), and areas in Guadalcanal. Logging and industrial-scale plantations have been causing significant sedimentation and runoff of excessive nutrients into the marine environment. Logging operations, such as those occurring in Choiseul, Vella Lavella, Kolombangara, New Georgia, Malaita, Nggela, Guadalcanal, and Makira, are likely to

continue because they make substantial contributions to the national revenue. While coastal development for tourism is not as pronounced in the Solomon Islands as in the other CT countries, there is growing concern about **coral mining** (e.g, Porites corals are extracted from reefs to build coastal structures such as seawalls or seaward extensions).

Emerging concerns include **transboundary issues**, such as the transport of prohibited commodities across borders for sale and the lack of coordination in resource and species management for migratory species among countries. Mitigating against excesses in mariculture activities, harmful algal blooms (HABs), marine invasive species, and climate change hazards, like sealevel rise and increasing seasurface temperatures, are the other emerging issues.

The Solomon Islands National Plan of Action

The five-year SI-NPOA suggests a national strategy for CTI-CFF Implementation through community-based approaches in resource management with supporting themes of legislation and policy, data and information management, and education and awareness raising (Ministry of Environment, Climate Change, Disaster Management and Meteorology and Ministry of Fisheries and Marine Resources). The Ministry of Environment, Climate Change, Disaster Management and Meteorology (formerly known as MECM) and the Ministry of Fisheries and Marine

Priority Research Issues

- ☑ Application of a total economic value framework to coastal ecosystems
- ☑ Impacts of shift to cash economy on coastal resource exploitation
- ☑ Improvement of biodiversity assessment on land and sea
- ☑ Growth parameters of corals and implications on development of sustainable harvesting plan
- ☑ Studies on marine invasive species especially within ports, marinas and locations where logs are loaded onto ships

Resources are the lead agencies responsible for its implementation.

In relation to Goal 1, the Solomon Islands have prioritized the Bismarck-Solomon Seas Ecoregion (BSSE). A Memorandum of Understanding (MOU) was signed in 2006 declaring a transboundary partnership among Indonesia (Papua), Papua New Guinea (PNG), and the Solomon Islands. A regional action plan was developed to provide guidance in the conservation of the endangered leatherback turtle in the BSSE. The document engages the three countries in improving the conservation of the leatherback through information sharing, data exchange, and research.

There are presently no confirmed policies and regulations directly relating to ecosystem-based fisheries management (EAFM), but some EAFM principles are reflected in the *Fisheries Act* (1998) and in fisheries regulations and embodied within the management plans for specific resources.

In improving the management of MPAs, the SI-NPOA recognizes customary ownership of marine tenure. The use of locally managed marine areas (LMMAs) is widely accepted in the Solomon Islands, building on local and traditional strengths in resource management and capturing communities' perceptions of potential benefits. The Solomon Islands LMMA (SILMMA) was established to coordinate management of marine resources.

For climate change adaptation, the *National Adaptation Program of Action (NAPA)* was drafted in 2009 and identified key vulnerable sectors in agriculture and food security; water supply and sanitation; education, awareness, and information; human settlements; human health; waste management; fisheries and marine resources; infrastructure; and coastal protection. A number of climate change adaptation projects are currently in progress, coordinated and/or managed by churches, non-government organizations (NGOs) and various government agencies.

In improving the conservation status of threatened species, the Solomon Islands are guided by a number of national and international frameworks and strategies.

In the Solomon Islands, the growing population will likely increase pressure on the country's fisheries. Already, a decrease in catch among specific fisheries has been observed in highly populated areas and market centers. Such a declining trend has negative implications on food security for future generations. A study has shown that the estimated production from the entire national coastal fisheries resources may not be able to meet future demands of fish needed for food security, income, and good nutrition. However, regional and national initiatives, such as the CTI, have been developed to address the impacts on coral reefs and fisheries. For example, the SI-NPOA enumerates management actions consistent with the RPOA goals, aiming to conserve coral reefs to sustain ecosystem services, promote sustainable fisheries utilization, and assist in attaining food security.

Availability of Full Reports

This document is to be read as a supplement to the CD version of the complete State of the Coral Triangle Report.

Contact Information

Rosalie Masu
Deputy Director of Inshore Fisheries
Ministry of Fisheries and Marine Resources
Email: rmasu@fisheries.gov.sb

Agnetha Vave-Karamui
CTI National Coordinator
Ministry of Environment, Climate Change,
Disaster Management and Meteorology
Email: Vavekaramui_a@mecm.gov.sb or
Agnetha.vavekaramui@gmail.com

Solomon Islands have 485 known species of corals from 76 genera and possibly nine new species which brings the possible total number of coral species to 494. The photo above shows coral reefs encountered during the REA in 2004. Credit: TNC