

## Solomon Islands marine resources overview

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Marine resources are probably more important to local communities in Solomon Islands than anywhere else in the world—Solomon Islanders eat more fish per capita than anybody else. But poor management has led to the over-exploitation of six commercially important species. Wild stocks need to be managed sustainably and aquaculture must not be mistaken as a substitute for management. The government must put greater emphasis on awareness and educating rural people on sustainable use and management.

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Solomon Islands lies in the southwest Pacific, to the east and south of Papua New Guinea. The country consists of two roughly parallel island chains with six major island groups—Choiseul, Isabel and Malaita are found in the northern group and New Georgia, Guadalcanal and Makira in the south. The central archipelago of islands lies between latitudes 5° S and 12° S and longitudes 152° E and 163° E.

Solomon Islands is the second largest archipelago in the South Pacific, incorporating some 992 islands that collectively have a land area of nearly 30,000 square kilometres distributed over 1,280,000 square kilometres of sea.

About 80–88 per cent of the land and marine resources of Solomon Islands is owned by family groups or clans. The land and marine tenure system dictates that family groups or clans have strong legal rights over ownership and decision making concerning their forest and near-shore marine resources—their livelihood is dependent on the continuation of these resources.

The fisheries sector accounted for an estimated 6.7 per cent of GDP in 1993 and had increased to about 12 per cent by 1998. The domestic tuna industry is the largest employer in Solomon Islands. Fish was the country's major export in 1998 but fell behind log exports in 1999. Marine product exports, including tuna, accounted for SI\$159 (US\$32.9) million in 1999.

Coastal resource exports peaked at SI\$16.6 (US\$5.7) million in 1992 but fell to SI\$10.6 (US\$2.2) million in 1999. The annual production from subsistence and artisanal fisheries of 11,150 tonnes has been estimated to have a nominal value of more than SI\$60 (US\$12.4) million.

The reliance of Solomon Islanders on marine resources is reflected in one of the highest per capita seafood consumption rates in the world. A survey conducted by the Japan International Cooperation Agency (JICA), the Development Study on the Improvement of Nationwide Fish Marketing System in Solomon Islands, estimated per capita consumption of fish in Honiara was 47.9 kg

in 1992. A family of 6.5 persons consumes 2.5 kg of fish per meal, four times a week. Shellfish consumption appeared to be concentrated in the Western Provinces (Skewes 1990).

Inshore marine resources play a significant role in the lives of Solomon Islanders and are critical to the economy. However, few management controls are in place to ensure that harvests remain at sustainable levels.

The increasing high demand for marine resources is a growing concern. Determining current levels of utilisation is far from easy, due to the lack of information about the volume of domestic and international trade.

As the population grows and the monetisation of fisheries resources increases, production to satisfy increasing demand will encourage the widespread use of more efficient and often destructive fishing methods. Marine resources that are potentially renewable if exploited sustainably are currently under threat. In addition to the damage caused by destructive fishing, Solomon Islands reefs and fishing grounds are subject to a variety of other assaults resulting from land-based human activities.

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**Trochus.** *Trochus niloticus* is a gastropod shellfish whose meat is eaten while the shell is used to make button blanks. It had an export value of over SI\$1 million (US\$303,000) in 1994 but exports have been decreasing steadily since. Recent surveys have shown that even with a legal size limit of between 8 and 12 centimetres, *trochus* is showing signs of over-exploitation. However, many communities in Solomon Islands practice some form of 'tabu' (periodic closure) to allow replenishment. In 1997, an enhancement effort called the Atoll Project was funded by the Overseas Fishery Cooperation Foundation (OFCF).

**Bêche-de-mer.** Of the 23 *bêche-de-mer* species occurring in Solomon Islands, 15 species are

commercially harvested. Recent high prices have led to a rapid decline in this resource. Apart from an export ban on one species of Sandfish (*Holothuria scabra*), there are no regulations to control exploitation of this resource. Although the International Center for Living Aquatic Resources Management–Coastal Aquaculture Center (ICLARM–CAC) has begun a hatchery-based reseedling program, success will take a lot of money and effort. One community in Ontong Java is practicing traditional management in the form of seasonal closures.

**Giant clams.** There are six species of giant clams in Solomon Islands. The smallest, *Tridacna crocea*, bores into coral heads and is well distributed throughout. *Hippopus hippopus* is found on the reef rubbles near sheltered reefs and inside lagoons and atolls and does not attach to the bottom strata. *Tridacna squamosa* is found on coral reefs and lagoons and has wings like petals at its sides and grows to about 40 centimetres. The fourth and second smallest clam, *Tridacna maxima*, attaches in a manner similar to the smallest but can live on the windward side of flat hard reefs and other exposed areas. The fifth clam, *Tridacna derasa*, can grow up to 60 centimetres, and the biggest, *Tridacna gigus*, can grow to more than one metre.

ICLARM–CAC has established a clam hatchery at Aruligo and has grow-outs at Nusatupe in the Western Province and Marau Sound in Guadalcanal.

These shells have been overharvested due to their high demand. Restrictions on commercial use have been established to protect the resource for local subsistence use only. The only shells allowed to be marketed commercially are those that are farmed.

**Crayfish/lobster.** There are three main species of crayfish/lobster (*P. penicillatus*, *P. versicolor*, *P. femoristiga*)—and two other relatively rare species (*Penulirus ornatus* and the slipper lobster) forming a very important commercial resource that has already been overexploited despite the fact that there is a size restriction (8 centimetres carapace

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length). A significant volume was harvested in 1995, with 22,894 kilograms exported.

**Pearl oysters.** Pearl oysters have been heavily harvested—26,007 kilograms of Blacklip (*Pinctada margaritifera*) and 1,196 kilograms of Goldlip (*P. maxima*) were harvested in 1993, and 11,476 kilograms of Brownlip (*Pteria penquin*) were harvested in 1991.

Harvesting of these three species was banned in 1994 due to overexploitation. A vision to establish pearl farms to increase value is slowly surfacing—the ICLARM/SIG pearl farm demonstration project seeded and harvested some 800 specimens in 1999, and the outlook for future commercial operations is positive.

**Greensnails.** Greensnails (*Turbo marmoratus*) are a valuable resource but stocks have almost become extinct in Solomon Islands. The Overseas Fisheries Cooperation Foundation (OFCF) of Japan (under the Atoll Project Solomon Islands) is promoting the restocking of its resource. Restocking started in 1999 and will hopefully expand in the near future.

**Turtles.** There are three common species of turtles—Green (*Chelonia mydas*), Hawksbill (*Eretmochelys imbricata*) and the Leatherback (*Dermochelys coreacea*), with the biggest weighing about 500 kilograms.

Three thousand Hawksbill turtles were exported in 1989. The grave need to protect the species led to the establishment of the Arnavon Management Conservation Area (AMCA) in August 1995.

A new regulation enacted in 1998 protects turtles during the peak nesting periods, June–July–August and November–December–January. Locals can only eat turtles from February to May and during September and October.

**Crocodiles.** The harvesting of crocodiles (*Crocodylus porosus*) has been banned since October 1989. But ten years later, crocodile attacks on domestic animals are on the rise. This year the Conservation Department and the Fisheries Division will together organise a survey prior to considering whether to

reopen the market. Interest in crocodile farming has been expressed and there is potential for this activity. However, CITES regulations have to be observed and the Solomon Islands' government must take steps to join in order to secure a market for the product.

**Coconut crab.** The coconut crab (*Birgus latro*) lives mostly on land but sheds its eggs into the sea. Coconut crabs grow to approximately 1 kilogram, but very slowly—a 600 gram crab would be about 15 years old. A limit of 9 centimetres for the carapace length and an export quota of about 1 ton, which the Minister has to approve has been imposed to protect the species. Coconut crabs can still be found on the menus of hotels and restaurants in Solomon Islands.

**Coral trout and groupers.** There is growing regional interest in these live reef fish, especially with the ACIAR project, which includes the Southern Cross University, GEF/ADB interests, SPC/TNC support and Solomon Islands Ministry of Agriculture, Lands and Fisheries through the Fisheries Research Section. The purpose of the project is to promote the protection of the resource, to study its biology and its impact on the socioeconomy, and to develop marketing and management strategies. To do this certain rules have been applied, such as the banning of exports in 1999, avoiding destructive fishing practices and monitoring fishing operations during the spawning seasons.

**Aquarium fish.** No management strategy has yet been established for this resource, but it has picked up rapidly in importance. Corals, sea urchins and sea anemones are also collected for trade. There is a need to regulate the market and support of transportation is needed to encourage the export market.

**Reef fish.** Fresh fish are caught and stored in chilled ice to be transported to the urban centres and sold in open markets. Fish is very popular and demand is high in all urban centres. Prices range from SI\$10–16 per

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kilogram in Honiara and SI\$5–10 per kilogram in Gizo in the Western Province.

## Aquaculture

**Seaweed.** *Eucheima* seaweed was introduced to Solomon Islands (first to Munda and Rarumana in the Western Province) in 1985. Growth rates in Solomon Islands farms were better than on Fiji farms but they were closed due to market collapses. With prospects for new markets in the Philippines and Europe, Solomon Islands would like to restart the old farms and expand trade to other potential sites.

**Prawns.** Two commercial farms have been successfully producing three crops annually of (*Penaid monodon*) shrimps. An association was formed in 1998 in the hope of expanding to other provinces but was put off when the Guadalcanal Militants raided and destroyed the farms. It is hoped to continue this venture in the near future.

## Off-shore fishing

**Deep-sea snapper.** This offshore/pelagic resource is being utilised by the European Union through its Rural Fisheries Enterprises project to divert reef-fishing pressure from overfished reef stocks. Bigger boats designed in Vanuatu but locally-built boats are used with the Samoan fishing reel rather than the normal outboard motors on fibre glass canoes. However, with the limited stocks and high costs of operating the boats, fisherfolk are not enthusiastic about the operation.

**Tuna (skipjack, island bonito, yellowfin, albacore).** Tuna is abundant and Solomon Islands has two local-based fleets operating, providing substantial revenue and employment. US multilateral, Japanese bilateral and foreign fishing vessels, as well as distant water fishing nations, fish for tuna in Solomon Island waters. The tuna industry employs a large number of women in the Noro cannery.

**Sport fishing (sailfish and marlin).** Solomon Islands has not done much to promote sports fishing, however, there is investment potential for interested investors, and Solomon Islands could benefit in terms of information through the collected data, tourism promotion and bait collection for local entrepreneurs.

**Shark fins.** Shark fins are a high export value commodity, and many fishermen are engaged in this activity. The industry however is very small—no company survives solely on shark fins. There is fear of overexploitation but there are still no management measures or controls.

**Dolphins and whales.** Marine mammals such as dolphins and whales are very common in Solomon Islands. The Malaita people in Fanalei, Walande in the south and the Ata'a people in the north harvest dolphins for both their meat and teeth. A single tooth is valued at about SI\$2; dolphins have about 200 teeth. It is a traditional source of food and income to the Malaitans, but environmentalists have raised concerns. Dolphins are also predators of marine resources—if a school of dolphins sees a school of tuna on a long-line they will eat most of the catch before it is hauled.

## Threats to coastal resources

There are clear indications that overfishing, which has intensified during the past decade, is becoming the most significant threat to marine habitats. Coastal development, including logging activities, has also been perceived as a potential threat to marine habitats. Pollution (including sewage and upstream effects), coral reef degradation and destructive fishing methods all contribute to declining coastal resources.

The Solomon Islands community does not consider the outlook for marine resources to be bright. Few recognised that the downward trend was related to resource management—national regulations were not seen to be relevant at the local level.

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Where open access is practiced, communities have found it difficult to manage resources, and have expressed the need for external assistance.

Studies have shown that catalytic actions can be effective. This is best illustrated in the example of the ban on crocodiles. Although thought dangerous, crocodiles were not hunted when there were no buyers for the skin. A ban on the sale of crocodile skin has led to fewer being hunted, and numbers have increased.

Sanctuaries help increase community awareness. Sanctuaries usually arise where there is an external partner like an active non-government organisation or good extension worker. External partnerships should provide technical expertise on demand and support existing institutions, and be long-term, flexible and adaptive.

Governance in terms of the Tuna Management Plan and the Fisheries Act are not very practical, and Solomon Islands has lost out in terms of revenues. They are also not very investment friendly and are passive in activating the commercial harvesting of tuna species which is highly migratory.

## Conclusion

Marine resources are very important to the people of Solomon Islands. The lack of proactive management has already allowed six commercially important species to be overexploited.

Wild stocks must be managed and sustainably harvested. Aquaculture must not be mistaken as a substitute for management. The government must put greater emphasis on awareness and on educating rural people on sustainable use and management.

Community-based management of coastal resources in Solomon Islands is the *de facto* inshore management regime as village communities have ancestral-based customary tenure rights for 88 per cent of nearshore waters.

Investment should be always sought, especially in utilising the abundant tuna resources and nearshore seafood resources, while maintaining sustainability.

## References

- Batty, M. and Kile, N., 1990. *Report on the survey of goldlip pearlshell in the Kia area, Ysabel Province*, Fisheries Division, Honiara.
- Orihaka, E. et al., 1997. *Freshwater and Marine Aquatic Resources in Solomon Islands*, Honiara.
- Forum Fisheries Agency, 1999. *Tuna Management Plan*, Honiara.
- Gillet, Preston and Associates Inc., 2000. *Final Report of the ADB on Marine Resource Assessment*, Development and Management, Manila.
- Hirota, T., 1989. *Annual Report*, Fisheries Division, Honiara.
- McKeon, A., 1977. *Marine Turtles of Solomon Islands*, Ministry of Natural Resources Report, Honiara.
- Messel, H. and King, F.W., 1989. *Report on the CITES and Solomon Islands Government National Survey of the Crocodile Population of Solomon Islands*, Fisheries Division Report, Honiara.
- Nicholas, P. and Geen, G., 1982. A report on a fishing survey carried out around the Island of Ysabel, Fisheries Division, Honiara.
- Prescott, J., 1980. Report on the SPC Lobster Project in Solomon Islands, South Pacific Commission, Noumea.
- Skewes, T., 1990. *Marine Resource Profiles*, FFA Report 90/61, Honiara.
- Government of Solomon Islands, 1998. *Fisheries Act 1998*, Honiara.
- World Bank, 1999. *Voices from the Village: a comparative study of the coastal resource management in the Pacific Islands*, Washington, DC.