

Policy challenges in the coastal fisheries management of the Marshall Islands

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Abstract

Traditionally, the ownership of the coastal resources of the Republic of the Marshall Islands has always lain with the coastal communities. The coastal resources management, by law, requires the national authority to take measures for the management and development of local fisheries, including in internal waters and within five miles (which is the local jurisdiction) of the baselines from which the territorial sea of any atoll or island is measured. However, before any measures are taken, the national authority should consult with the Local Government Council affected by the proposed measures and, as appropriate, convene public hearings. However, jurisdiction, power and responsibility of traditional landowners with respect to Biodiversity resources are ambiguous. Different atolls have different traditions as to where land and marine ownership is claimed. Some claim ownership from the land to the ocean as far as the eye can see; others claim ownership of marine resources and reefs that may be on the opposite side of the atoll from the land. Although powers and responsibilities associated with ownership are not formally defined in law (or tested in the court system), traditional resource owners hold considerable power over the use of the resources, *de facto*. In this sense, policy challenges in the management of the coastal fisheries is analysed.

1. INTRODUCTION

1.1 Description of the fishery

Marshall Islands fishery is defined into two major subdivisions: coastal and oceanic fishery. The oceanic fishery includes living and non-living resources; it is governed and managed by the state on behalf of the people of the Marshall Islands. The rights to access for resources in the 200 nautical miles (NM) Exclusive Economic Zone (EEZ) is held by the government and, in the case of Marshall Islands, the Marshall Islands Marine Resources Authority (MIMRA). The management regime implemented by the state is the rights-based/zone-based approach in the form of the Vessel Day Scheme (VDS) for Purse Seiners of the skipjack fishery. The Longline VDS is being implemented, and full implementation is a work in progress.

The Coastal fishery, which is the case study of this paper, on the other hand, consists of subsistence, artisanal, including aquaculture, and small-scale commercial fishery, which is managed and governed by the government. The local government has jurisdiction within the five miles of the baseline from which the territorial sea of any atoll or island is measured. The target species in most of the outer islands are grouper, unicorn fish, rabbit fish, sea cucumber, lobster and turtles. There is a limit to turtles and a sea cucumber regulation for the harvest and export of sea cucumber. There are fish bases in the outer islands that are managed by MIMRA. MIMRA sends its boats to these fish bases, where the local communities supply stocks they had harvested for MIMRA to bring them to the capital to be sold at the domestic market. There are more than ten landing sites altogether in the Marshall Islands.

Most of the boats are owned by local fishermen who are involved in the fishing activity, either in small-scale or for subsistence purposes. On average, less than 12 meter-long, motorized boats are used with outboard engine. There are between 21 and 100 boats. The nature of the fishing operation is either owned by families or cooperative groups. Anchored fishing aggregated devices (FADs) are used which has been deployed around the two main islands, Majuro and Kwajalein. These FADs are supplied by

MIMRA with the help of the Secretariat of the Pacific Community (SPC), to assist fishers and game fishing activities in the Marshall Islands.

Women are generally involved in the fishing activity, including owning fishing gear and participating in the management. The fishing trips, on average, take place between 100 meters and 10 kilometres from the shoreline/high water mark. These trips are mainly a 6-24 hour duration. Since the fishery is still 70 percent subsistence catch, there has rarely been a conflict between stakeholders. The rest of the 30 percent, which is commercial on a smaller scale, is enforced and managed by the government agency.

1.2 Economic contribution and social implications of the fishing activity

There have been changes in the Marshall Islands over the last decade, as studies are conducted with improved data collection. In a study by Echigo (2010), coastal fisheries production was estimated to be around 4 500 metric tonnes (mt), comprised of catch for both subsistence and commercial purposes. The study, however, did not include exported fishery products such as aquarium fish, sea cucumber and trochus.

Species such as grouper, unicorn fish and rabbit fish are mostly sold in the domestic market, whereas species like sea cucumber are sold in the international market. There is a moratorium on turtles, which can only be harvested based on special requests, and it is illegal to harvest turtles when beaching. Lobsters are either harvested for household consumption or sold in the domestic market for monetary payment. Some of these species, including rabbit fish, go through value-adding in the post-harvest processing mostly for human consumption. Almost all of the catch is destined for human consumption as the general population depend heavily on fish for protein.

The approximate number of fishers involved in the fishery is around 700, including shore-based processing and vessel support (EPPSO, 2017). Amongst these, less than 25 percent are women fishers. This equates to about less than 25 percent of income derived from fishery participation. In the Marshall Islands, being a fisher is a full-time job and, in the absence of a well-established tourism industry, most fishers spend almost all of their time fishing. There are, however, alternative livelihoods in the form of agriculture, farming (crop/livestock), processing (including post-harvest), restaurants and bars, recreational fisheries, and retail.

2. MANAGEMENT OF THE FISHERY AND RIGHTS-BASED APPROACH

In the coastal fisheries, there are many stakeholders involved in the harvest of the resources. The right to exploit the fisheries resources lies, in many cases, with the land-owners. The following figure illustrates the definition of customary ownership of the resources, which is also recognized by the law and the various jurisdictions in coastal fisheries management:

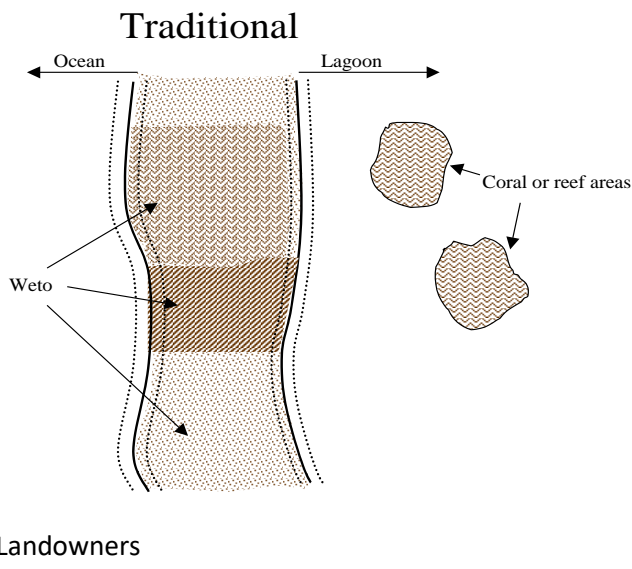


Figure 1.
 Source: OEPPC, 2004

Jurisdiction, power and responsibility of traditional landowners with respect to Biodiversity resources is ambiguous. Different atolls have different traditions as to where land and marine ownership is claimed- some claim ownership from the weto on land to the ocean as far as the eye can see, and to the centre of the lagoon. Others claim ownership of marine resources and reefs that may be on the opposite side of the atoll from the land-based weto.

Although powers and responsibilities associated with ownership are not formally defined in law or tested in the court system, traditional resource owners hold considerable de facto power over the use of the resources. Local communities may be more likely to take direction over the use of the resources from traditional landowners, than they are from laws and regulations that are difficult to enforce.

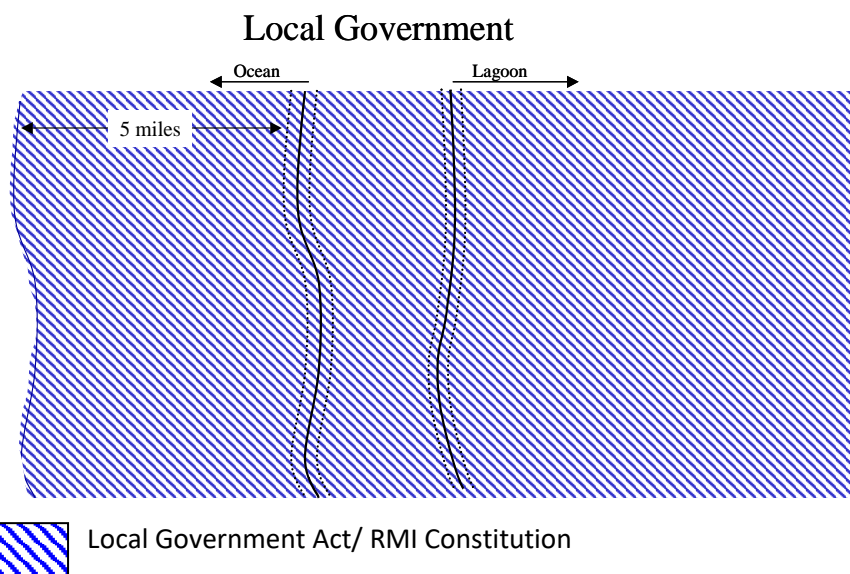


Figure 2.
 Source: OEPPC, 2004

Local Government Act/Constitution

Act describing the establishment and governance of local governments.

Powers

Local government has the power to make any ordinances, as long as they are not inconsistent with any Act or with any other legislative instrument that has the force of law in the Marshall Islands (such as regulations formed by MIMRA or EPA, for example).

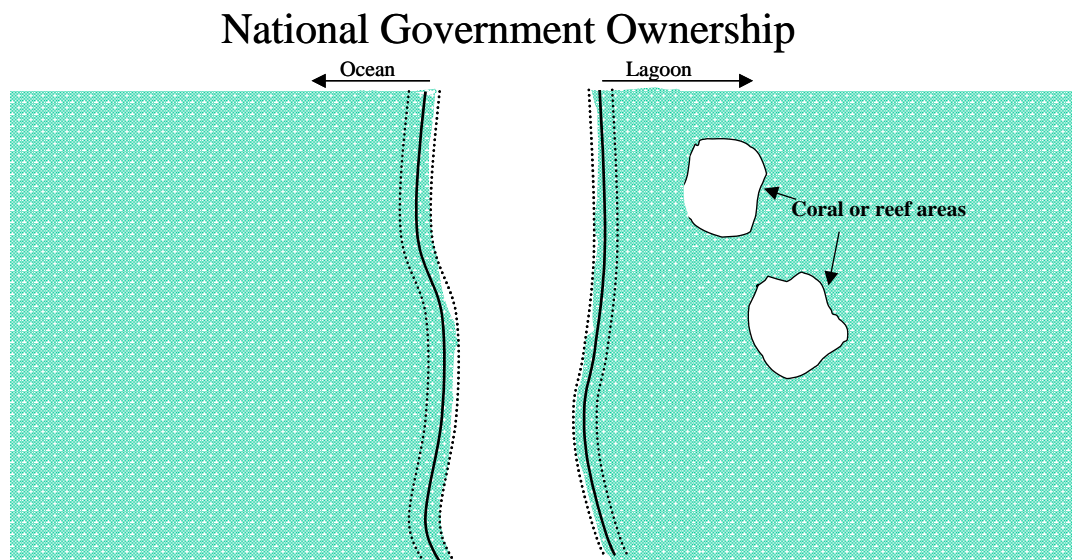


Figure 3.

Source: *OEPPC, 2004*

Public Lands and Resources Act

This Act defines ownership over areas by the government of the Republic of the Marshall Islands. It takes the basic definition of public lands as those owned or maintained by the Japanese government during the Japanese administration. Specifically, all marine areas below the high-water mark belong to the government, with the following exceptions:

- Fish weirs and traps and the right to erect these as recognised by customary law;
- Fishing rights on, and in water over reefs where the general depth of water is less than 4 feet at low tide, as recognised by customary law;
- The traditional and customary right of the individual landowner, clan or municipality to control the use of and materials in marine areas below the high-water mark (subject to the inherent rights of ownership of the government); and
- Any legal interest in or title to such marine areas.

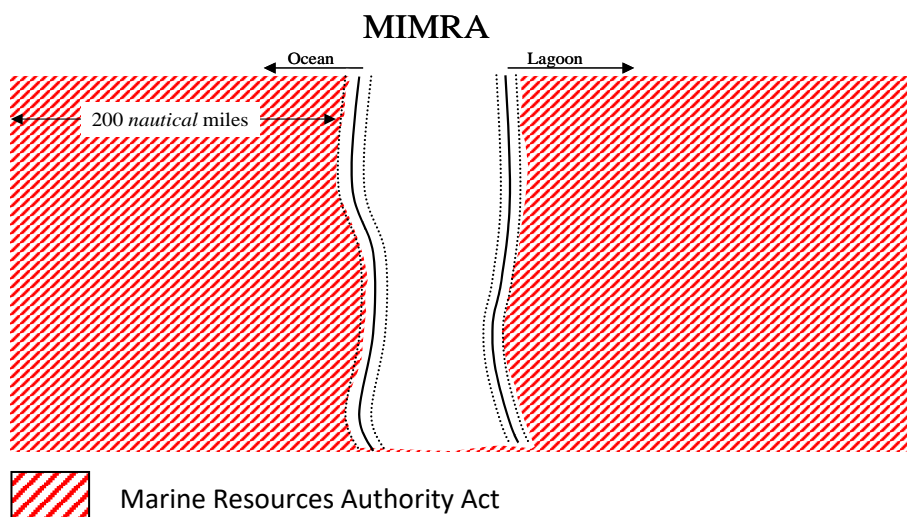


Figure 4.

Source: OEPPC, 2004

Marine Resources Authority Act (MIMRA)

MIMRA establishes the Marshall Islands Marine Resources Authority.

Responsibilities

MIMRA's duties related to Biodiversity conservation include:

- To conserve, manage and control exploration and exploitation of all living resources in the Fishery Waters (all water within the EEZ measured from the baseline of each atoll)
- To issue fishing licenses
- To negotiate and conclude foreign fishing agreements (with the final approval by Cabinet)
- To participate in the planning and execution of programs related to fisheries or fishing
- To appoint authorised enforcement officers and observers.

Powers

MIMRA has the power to carry out its duties. In addition, MIMRA may:

- Develop local fisheries, in consultation with the Local Government Councils
- Issue local fishing licenses for commercial and non-commercial fisheries
- Make regulations with respect to:
 - the conservation, management and protection of fish and other aquatic organisms
 - use of fishing gear and equipment
 - terms and conditions of licenses
 - pollution of fishery waters
- Give rewards for information leading to the conviction of foreign fishing vessels.

- Inventory of all estuarine or wetland areas with an indication of significance as fisheries or wildlife habitat;
- Coastal zone management plans including consideration of living resources; and
- Environmental impact assessment process.

2.1 Management of the fishery

Under the legal framework, the people of every populated atoll or island that is not part of an atoll shall have the right to a system of local government which shall operate in accordance with any applicable law, whereby the local government system in each case extends to the sea and the seabed of the internal waters of the atoll or island and to the surrounding sea and seabed, to a distance of 5 miles from the baseline from which the territorial sea of that atoll or island is measured. The law also recognizes that the whole of the land and sea areas to which any system of local government extends, shall lie within the jurisdiction of a local government. Where there is more than one local government, the land and sea boundaries of their respective jurisdictions shall be defined by the law.

Under the broader legal framework, MIMRA as the national fisheries government agency is responsible for the conservation, management and development of the coastal fisheries. The Title 51 gives powers to MIMRA to take measures for the management and development of local fisheries, including in internal waters and within five miles (which is the local jurisdiction) of the baselines from which the territorial sea of any atoll or island is measured. However, before any measures are taken, the national authority should consult with the Local Government Council affected by the proposed measures and, as appropriate, convene public hearings.

The development of the local fishery is mainly through aquaculture, aquarium trade, sea cucumber harvest, trochus, giant clams and the sale of reef fish in the local market.

2.2 Rights-based approach: allocation and characteristics

The current system of rights-based coastal fishery in the Marshall Islands is described as customary ownership and indigenous rights to resources. This is also the traditional form of ownership of coastal resources in the Marshall Islands. The chief or landowners of the atoll or community hold the power to grant or restrict access to the resources.

The allocation of the customary or traditional fishing rights for this fishery is controlled by the chiefs, who are also community leaders and landowners. The rights allocated are based solely on the chief's preference; he or she grants the rights to the communities because they play a role in providing for the chief and his or her family and the participant's family. The rights also play an important role in managing the fishery, whereby specific fishing gear type is allowed to harvest a particular species. These are based on the season - because some species are seasonal, certain gears are used to reduce bycatch, and certain gears can only be used on special occasions.

These rights are valid until the chief decides otherwise, including with the introduction of closure season as and when required. They also consider the cultural sensitivities of the community, dependence on basic livelihood needs and the sustainability and viability of the fisheries as a whole. The rights are transferable between the fishers as access is provided to the local communities equally. Therefore, fishers can transfer those rights to their family members, making it inheritable.

However, there are restrictions to commercial aspects of the fishery. Chiefs can either allow their fishery to be commercialized, or to be conserved and protected. Implementing marine protected areas (MPAs) can only be pursued with the authority of the chief. In terms of compliance, monitoring is a challenge due to the proximity of fishing grounds being scattered and the costly nature of enforcement. There may be cases of non-compliance such as poaching, however, reporting and documenting is a difficulty.

3. CONTRIBUTION OF THE RIGHTS-BASED APPROACH TO ACHIEVING SUSTAINABILITY

The customary rights-based nature of fishery in the Marshall Islands plays an integral role in the sustainability of the resources. The jurisdiction of the local government provides the basis for the resources to be managed sustainably. Economic viability depends heavily upon the sustainability of the resources. In addition, social equality reinforces the need for inclusion and mutual benefits, to improve the quality of life for individuals and the community as a whole.

3.1 Sustainable use of the resources

The target species in the Marshall Islands are grouper, unicorn fish, rabbit fish, sea cucumber, lobsters and turtles. There has not been a stock assessment conducted because of the lack of technical and financial capacity. The lack of these capacities has led to an albeit small increase in assistance, meaning there is some improvement in the data collection. However, this has not resulted in a stock assessment that is country-wide.

Nevertheless, a precautionary approach is being used to manage the fishery. In using this approach, a conservation plan was designed a little more than a decade ago, known as the Reimaanlok. Reimaanlok provides the basis for sustainable development and whilst it advocates for conservation, protection, it also encourages the provision of alternative livelihoods such as aquaculture. In implementing Reimaanlok, there are stages that every outer island communities need to go through.

Specifically, the Reimaanlok eight-step process, when triggered by an atoll community's leadership (Step 1), includes: a scoping and budgeting exercise (Step 2); site visits by Reimaanlok facilitators to build awareness on the need for resource planning by the target atoll community (Step 3); the gathering and analysis of various natural and social resource data parameters (Step 4) in order to design (Step 5) and ultimately legislate (Step 6) an integrated atoll resource management plan inclusive of programs to ensure ongoing monitoring and adaptive management (Step 7); and lastly, local commitment retention (Step 8).

Given the specific needs and unique circumstances of atoll municipalities, the Reimaanlok facilitation consortium known as the Coastal Management Advisory Council (CMAC) may follow these eight steps in a linear or iterative process. This helps foster a sense of trust and shared purpose within the community and of the Reimaanlok facilitators so that the process itself is an empowering experience for atoll communities and a vehicle for national cohesion and shared purpose among members of CMAC.

3.2 Economic viability of the fishery

The local communities depend heavily on the marine resources for sustenance and livelihood. According to Gillet (2016), who has written a report on fisheries in the economies of the Pacific Island countries and territories and commissioned by the South Pacific Community (SPC), the coastal fishery catch is attributable to about 30 percent commercial and 70 percent subsistence. The increase in commercialization from a study done in 2009 by Gillet is based on the improved data collected by MIMRA. Aquaculture also plays a significant role in the commercial activities of the coastal fishery:

Table 1. Annual Fisheries and Aquaculture Harvest in the Marshall Islands, 2014

Harvest Sector	Volume (mt, pcs where indicated)	Value (US\$)
Coastal Commercial	1 500	4 350 000
Coastal Subsistence	3 000	6 000 000
Aquaculture	10 000pcs	50 000
Total	4 500 mt and 10 000pcs	10 400 000

Source: Gillet, 2016

In the case of the coastal communities, MIMRA buys catch from outer islands and sells it to the local market. The reliable collection of the catches indicates that local communities in the outer islands have increased their catch over the past decade and that communities rely heavily on the national government to subsidize transportation due to the high cost associated with the intra-island sea transportation.

The increased commercialization of coastal fishery has led to a decline of some reef fish stocks and other marine resources, which now is being addressed through the national conservation plan (the Reimaanlok). The lack of good quality data such as vessel size, duration of each fishing activity, and the characteristics of the fishing vessels, does impact on the economic viability of the resources. Coastal fisheries are largely still an informal sector in the Marshall Islands.

3.3 Social equality

Since the resources are largely held in the form of customary rights, and the community members have access to these resources, social standards are difficult to measure. Fishing has been predominantly done by males, but in recent years, women too have become involved in fishing activities. Women are still mostly involved in the gleaning and post-harvest process.

There has also been an increase in migration from outer island communities, to either the capital or to the United States. Under the Compact of Free Association, Marshall Islands citizens are eligible to live and work in the US. This benefit has seen an increase in outward migration of most Marshallese citizens and it has impacted on the population in the outer islands. Communities have been on the decline, and some outer island communities have not been able to recover from population decline.

4. MAIN CHALLENGES AND WAY FORWARD

4.1 Challenges for the fishery

This section aims to discuss the challenges that this fishery as a whole – including fishers, processor, post-harvest stakeholders, managers, and others – has faced during the development and implementation of the current management and rights-based approach. It also discusses illegal, unregulated and underreported fishing activity.

The Marshall Islands coastal fishery is based on customary rights and is managed by taking into account the traditions and customs of resource ownership. There are many challenges being faced by the coastal communities. One of the key ones is the technical and financial capacity to conduct fisheries-related studies and assessments. Illegal, unregulated and underreported fishing activity is prevalent in the coastal areas. Issues related to geography, weather conditions and equipment play a major role in the monitoring, surveillance and control efforts.

Since the fishery is 70 percent subsistence-based, there has not been any major conflict with small-scale fishers and large-scale commercial. The fishers usually fish within a 3-mile zone from low-water mark for small-scale fishing. Conflicts have arisen during the implementation of the MPAs. The

conflicts have been between chiefs and families who have land abutting the protected areas. These are ongoing conflicts which have not been resolved.

For commercial activity, a license has to be permitted and issued by MIMRA. Since licenses are mostly for sea cucumber, aquarium trade, trochus and giant clams, monitoring and enforcement have improved. However, leakages persist. It is a major challenge for MIMRA to fully implement the laws and regulations as there are capacity issues and financial burden that MIMRA carries.

4.2 Improving fishery sustainability in the future

This section aims to provide our personal opinion about what, if anything, could be changed or improved in the management of this fishery in order to increase the fishery's sustainability, including the long-term sustainable use of the fisheries resources, economic viability, and social equitability.

The Marshall Islands coastal fisheries have many challenges and strengths, as well. Good relationships have been established between the local communities, local government and national government. This strength is drawn from the collaborative efforts of the stakeholders involved. The implementation of conservation plans have been a particular success in this regard.

However, there is a need to assess the socio-economic situation of the outer island communities in order to improve the decisions on policymaking at the national level. Investment in a technical capacity for stock assessments, fisheries economics, fisheries scientists, and - most importantly - the need to improve data collection build the foundation for thoughtful decision-making. The need to invest in alternative livelihoods such as aquaculture is mandatory, and building capacity is also a must. Research and development play a fundamental role in the coastal fisheries development. Therefore, the need to build capacity in these areas are extremely important.

Marshall Islands held the inaugural national oceans symposium in 2017, to harmonize the existing inter-agency framework and to assess and improve the issues related to oceans. A bottom-up approach was in the design to address the objectives of the oceans conference. In doing so, an oceans policy document known as the *Guiding Principles to sustain and be sustained by our Oceans and Coral Reefs*, which covers offshore and coastal fisheries management issues and socio-economic issues, has been drafted and approved by the government. An implementation plan has been designed to assist in the implementation process of the ocean policy. Work is still in progress, but there is much room for improvement in terms of achieving equitable benefits and managing coastal fisheries resources for the outer island communities.

ACKNOWLEDGEMENT

We would like to thank the staff of MIMRA for their inputs to this paper. We also would like to thank FAO and WB for funding our trips to Korea to present the findings of this paper.

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