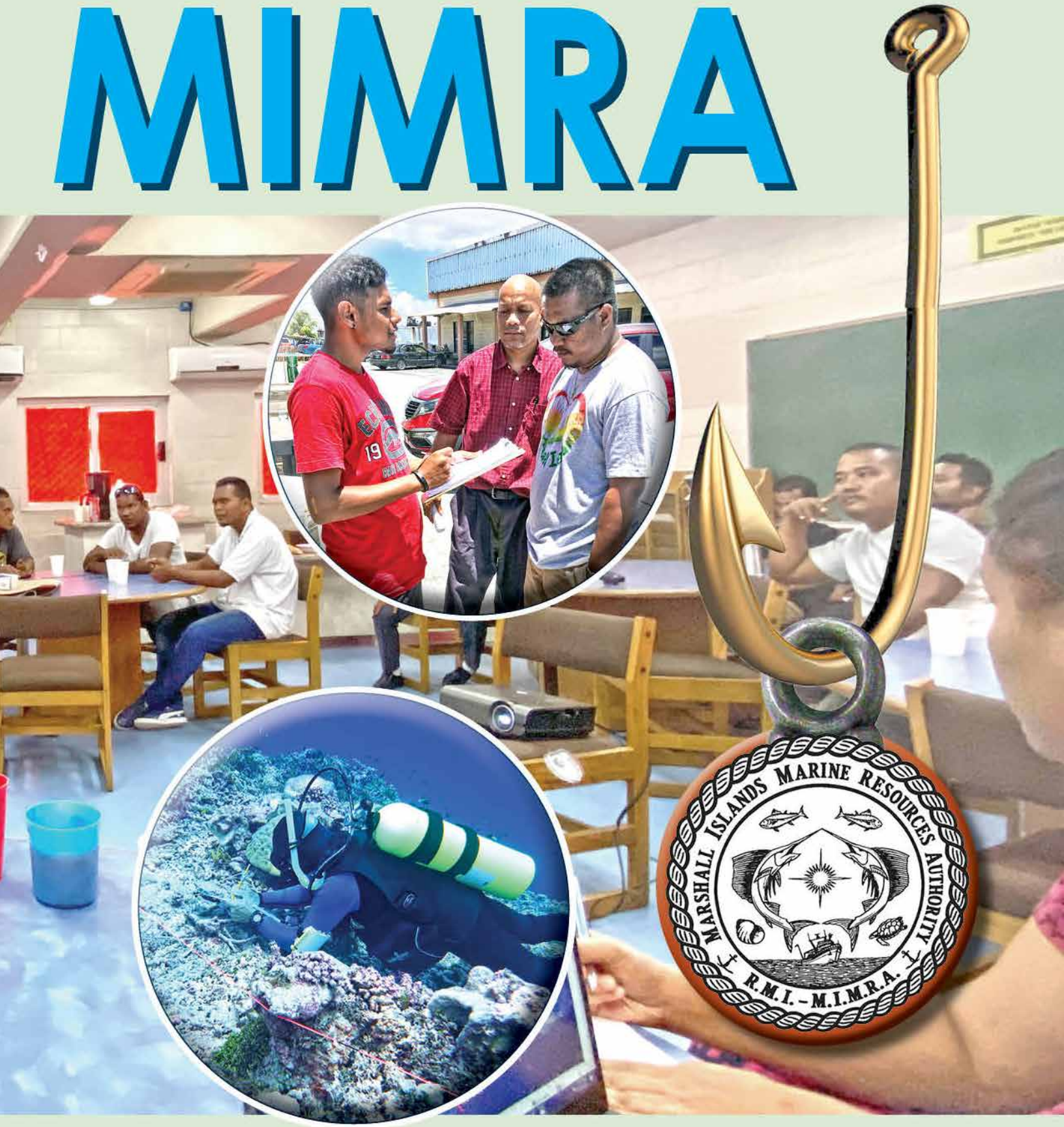
MIMRA



Marshall Islands Marine Resources Authority

Annual Report FY2019

Marshall Islands Marine Resources Authority

ANNUAL REPORT 2019

Marshall Islands Marine Resources Authority, PO Box 860, Majuro, Marshall Islands 96960
Phone: (692) 625-8262/625-5632 • Fax: (692) 625-5447 • www.mimra.com

TABLE OF CONTENTS

Message from MIMRA Board Chairman Minister Sandy Alfred
Page 3

Message from MIMRA Director Glen Joseph
Page 4

Coastal and Community Affairs
Page 6

Oceanic
Page 26

Legal Affairs
Page 44

Finance and Corporate Affairs
Page 48

Atoll Survey 'Milestone'
Page 52

Photos: Francisco Blaha, Emma Kabua-Tibon, Lyla Lemari, Erin Feinblatt, Melba White, Kalena deBrum, Alicia Edwards, Marshall Islands Conservation Society, Eve Burns, Giff Johnson, Hilary Hosia, Karen Earnshaw.

Front cover photos: (Main photo) Coastal Division outreach session on Wotje Atoll as part of the Reimaanlok Process for development of a resource management plan; inset, top: Fish market survey completed in 2019 in partnership with Marshall Islands Conservation Society and University of Guam; inset, bottom: Reef survey at Ailinglaplap Atoll.

Back cover photos: Inset, left: Fish market survey completed in 2019 in partnership with Marshall Islands Conservation Society and University of Guam; inset, right: Aquaculture tanks for growing seaweed and other aquaculture products at MIMRA's hatchery on Majuro.

Regional, local growth

Message from Sandy Alfred, Chairman of the MIMRA Board of Directors and Minister of Natural Resources and Commerce.

In the Marshall Islands, MIMRA brings together a unique blend of domestic, regional and international issues and needs that involve management, monitoring, conservation and development of our precious marine resources. Underpinning the ongoing work of MIMRA in every area is a focus and commitment to sustainable use of our resources, whether it is coastal fisheries involving subsistence fishing or domestic commercial fishers, or oceanic fisheries involving the multi-billion dollar tuna industry that operates in Parties to the Nauru Agreement (PNA) waters and beyond. Our commitment to sustainable marine resources development and use is the foundation for ensuring that our next generations can enjoy the fruits of the marine environment as we do today.

Important work in 2019 that will have long-term benefits for improving management and sustainability of our resources included:

• The Marshall Islands was the first island nation to sign an agreement with the Forum Fisheries Agency to implement aerial fisheries surveillance through a program funded by Australia and managed by the FFA for the region. Increased aerial surveillance is essential to monitoring the vast exclusive economic zone (EEZ) of the Marshall Islands.

• MIMRA moved into its new, state-of-the-art headquarters building, giving a boost to all programs within MIMRA.

• MIMRA supported a groundbreaking initiative by the FFA to protect crewmembers on commercial fishing vessels. The initiative strengthened harmonized minimum crew requirements for vessels to attain fishing licenses.

• Oceanic Division staff updated both MIMRA's strategic plan and its tuna management plan with the support of Fisheries New Zealand.

• At the Pacific Islands Forum annual Leaders Meeting in Tuvalu, the Marshall Islands joined with regional entities such as the FFA and the Western and Central Pacific Fisheries Commission in promoting the Marshall Islands call for an end to illegal, unregistered and unreported (IUU) fishing by 2023.

• MIMRA planned and carried out the first survey of two uninhabited northern atolls, Bikar and Taongi, to document marine life and biodiversity. This was a major effort of the Coastal Division that is paying dividends in educating the public about virtually unknown atolls, informing MIMRA coastal management work, increasing collaboration with local and international partners who participated in the survey, and setting the stage for ongoing outer islands survey work to establish baseline data on coastal marine resources in the Marshall Islands.

• The Marshall Islands joined with FFA members to gain endorsement of a landmark resolution on climate change at the Western and Central Pacific Fisheries Commission annual meeting in Papua New Guinea. It is the first recognition of climate impacts within the WCPFC framework.

• The Marshall Islands continued to benefit from its partnership with the PNA, which altogether netted an estimated $493.6 million for the nine participating islands in 2019, the second highest-ever annual revenue figure from the VDS. Participation in PNA's Vessel Day Scheme (VDS) helped to drive MIMRA's revenues to a new record, totaling over $35 million. The $29.1 million contributed to the national budget of the Marshall Islands from VDS fishing revenue accounted for approximately 13 percent of the nation's fiscal year revenues.

• MIMRA's Coastal Division is involved in a range of monitoring and survey work for ongoing and emerging coastal resource management issues ranging from coral bleaching and ciguatera fish poisoning to radiological monitoring of ocean water and the toxic contamination of reef fish in urban locations in Majuro and Kwajalein atolls. In addition, as part of furthering the Reimaanlok (Looking to the Future) Process, the Coastal Division is developing the Protected Areas Network, continuing to assist outer island communities to develop their resource management plans, and assisting outer islands to develop and expand aquaculture-related initiatives.

Sandy Alfred

BOARD MEMBERS

Chairman Minister of Natural Resources and Commerce Sandy Alfred, Vice-Chairman Minister Jemi Nashion, Members Senator Atbi Riklon, Stevenson Kotton, William Reiher, Anjanette Kattil, and Moriana Phillip. *Outgoing Members:* Chairman Dennis P. Momotaro, Vice Chairman Bobby Muller, Members Thomas Kijiner Jr., Danny Wase, Saane Aho, Rina Keju, Moriana Phillip (returned).

Strategic changes show quality results

Message from Glen Joseph, Director, Marshall Islands Marine Resources Authority.

Coastal Division Chief Emma Kabua-Tibon and Aquaculture Development Advisor Melba White prepare for a research dive during a voyage to rarely visited Bikar and Bokak atolls in late 2019.

Investments — in capacity building, in fisheries development, in conservation management — are starting to pay off. Our younger staff is taking on bigger roles in the organization, with some achieving their graduate degrees in fields relevant to marine resources. We continue to encourage their education for long-term benefits of the organization, which translates into greater ability to manage our coastal and oceanic fisheries programs.

MIMRA's longstanding relationships with its many regional and international partners increase what we are able to accomplish. Our partnership with the Parties to the Nauru Agreement has changed the game in management of the purse seine fishery to the benefit of the island resource owners, increasing 10-fold the financial benefits to the Marshall Islands over the past decade and leading to implementation of PNA's effective, multi-layered management system known as the Vessel Day Scheme. Our work with the Forum Fisheries Agency, the Pacific Community (SPC), and the Western and Central Pacific Fisheries Commission has elevated conservation management practices for tuna resources to ensure catch levels remain at sustainable levels. Similarly, more recently and particularly in 2019, the World Bank, through its Pacific Islands Regional Oceanscape Project (PROP) has partnered with MIMRA to develop management and seafood safety programs. The PROP project is supporting long-desired development of a "Competent Authority." Momentum on this picked up in 2019 with the hiring of staff and consultants to move forward on this work that is needed to establish a seafood quality monitoring entity that is essential to long-term plans to export marine products to markets in the European Union.

During 2019, MIMRA revised and updated both its strategic plan and its tuna management plan — both essential guides for our work over the next five years and beyond. We are working to improve our data collection and management. This includes closing gaps in data collection. We have the region's busiest purse seine tuna transshipment operation ongoing in Majuro. There is still more to do to improve management of transshipment operations in Majuro, including collecting details on the species and weights. These and other refinements in data collection and analysis are ongoing and continued to improve in 2019.

> 'MIMRA expanded its networking internationally joining the International Monitoring, Control and Surveillance (MCS) Network and signing a cooperation agreement with the Department of Fisheries in Thailand.'

MIMRA expanded its networking internationally joining the International Monitoring, Control and Surveillance (MCS) Network and signing a cooperation agreement with the Department of Fisheries in Thailand. Both of these expand MIMRA's links with key players in the tuna management framework, providing both these partners and MIMRA with new opportunities to improve data collection and analysis, expand oversight, and close gaps in information needed to manage the fishery.

In the coastal fisheries realm, MIMRA deepened its collaboration with its non-government organization partners through the Coastal Management Advisory Committee (CMAC) and such organizations as The Nature Conservancy, the Universities of Hawaii and Guam, and many others. Most notably, these partnerships inject a wide-range of technical resources to support and enhance the work of MIMRA staff in many areas: island resources surveys, baseline studies of reefs and marine life, development of aquaculture, and perhaps most importantly, assisting communities on our remote outer islands to develop and implement their own resource management plans. This all comes under MIMRA's long-term Reimaanlok (Looking to the Future) strategy for sustainable use of coastal fisheries.

The purchase of a Majuro-based hatchery from Atoll Technologies of the Marshall Islands (ATMI) in late 2019 opens new opportunities for MIMRA to expand fisheries and aquaculture development with the satellite clam farms it supports at Arno and Likiep atolls, and beyond these to others engaged in fish farming, black lip pearl oyster growing, and other aquaculture ventures in the country. We are confident that acquisition of this hatchery will invigorate the aquaculture and fish farming industry, particularly on the outer islands. MIMRA will work with people on the outer islands by increasing production of spat (babies) at the hatchery, providing these for grow-out opportunities in the outer islands. Increasing the volume of giant clams, pearls and farmed fish will help stimulate great marketing and export opportunities.

> 'The milestone achievement of completing resource and mapping surveys at the uninhabited atolls of Bikar and Bokak in 2019 demonstrated MIMRA's ability to undertake valuable study work.'

The milestone achievement of completing resource and mapping surveys at the uninhabited atolls of Bikar and Bokak in the northern Marshall Islands in 2019 demonstrated MIMRA's ability to undertake valuable study work that will continue in other atolls. Ten years ago, MIMRA did not have this capacity. But with our Coastal staff capacity development and networking with key partners, MIMRA has showed it is now able to conduct this essential research work to document baseline information about our island habitats, which differ, often significantly, from island to island.

In all of our work, sustainability and Reimaanlok (Looking to the Future) are the guiding principles.

Glen Joseph

COASTAL

AND COMMUNITY AFFAIRS

A MIMRA team monitors the marine resources in Ailinglaplap as part of the Reimaanlok Process.

MIMRA officials hold a debut Reimaanlok consultation with residents of Namu Atoll at the Protestant Church.

‘Reimaanlok’ guides coastal management

The Coastal Division in 2019 expanded on the sustainable management foundation for marine resources use that has been developed in the Marshall Islands over the past 10 years. The work gained momentum in many areas following key ocean-related initiatives over the past decade:

• The establishment of the Reimaanlok Framework, an eight-step process established in 2008 for developing and nurturing community-driven resource management in remote atolls and islands. By 2019, a majority of local government jurisdictions were participating in this important process of developing sustainable resource management systems on remote islands.

• The initiation in 2019 of three new islands/atolls into the Reimaanlok process for developing locally designed and managed resource management plans. Jabat Island and Ailinglaplap and Namu atolls became the latest participants in this important multi-atoll, multi-year effort to sustainably manage resources at the community level.

> ‘The first Marshall Islands National Ocean Policy, focuses on four areas: sustainable fisheries, climate change impacts, marine pollution, and coral reefs and marine protected areas.’

• The National Oceans Symposium in 2017 that brought together hundreds of people: top national and local government leadership and representatives of all sectors of government, business, non-government organizations and the community to focus on the importance of sustainable management and use of marine resources. This produced the first Marshall Islands National Ocean Policy, which focuses on four areas: sustainable fisheries, climate change impacts, marine pollution, and coral reefs and marine protected areas.

• Adoption in 2018 by Nitijela (parliament) of essential amendments to the Protected Area Network (PAN) legislation first passed into law in 2015. The amendments established sustainable and effective management processes for ensuring the PAN program moves forward. These included establishing the MIMRA Board of Directors as the Board for the PAN program, formalizing the role of the Coastal Management Advisory Council (CMAC) for advice and technical assistance to the PAN process, and establishing value for areas that historically were protected through traditional management. A strategic plan was formulated during 2019 to guide the new Marshall Islands PAN office at MIMRA.

• Work as part of the Micronesian Association for Sustainable Development (MASA) to share knowledge, technical assistance and partner on aquaculture development projects. This four-nation organization in partnership with the UN Food and Agriculture Organization and the SPC, to develop and implement a project in 2019 known as: “Aquaculture Business Investment Planning and Development to Increase Resilience and Improve Food Security.” The aim is to carefully target species for development that are most suitable to the context of MASA nations that include the Marshall Islands, Federated States of Micronesia, Nauru and Palau.

> ‘The purchase in 2019 of a fish and aquaculture hatchery in Majuro was an important step to stabilizing and expanding aquaculture development in the Marshall Islands.’

• The purchase in 2019 of a fish and aquaculture hatchery in Majuro from Aquaculture Technologies of the Marshall Islands (ATMI). This was an important step to stabilizing and expanding aquaculture development in the Marshall Islands. The modern hatchery is an invaluable asset for expanding production of fish, seaweed and aquaculture products such as giant clams for distribution to and farming on remote islands. This will be used to support various initiatives on outer islands, including fish farming and giant clam growing.

• The Coastal Division’s long-term links with outer islands fishers through a network of fish bases that link to the Outer Islands Fish Market Center in Majuro and the Kwajalein Atoll Fish Market Center on Ebeye. This gives residents of remote islands an important income generating opportunity for selling fish that is collected by MIMRA vessels and transported to the urban centers in Ebeye or Majuro for sale.

• Production, management and analysis of island resource data. Coastal staff conducted resource mapping through

Valuable visits to Bikar and Bokak

MIMRA staff and crew of MV Surveyor voyage to Jabat, Ailinglaplap, and Namu.

surveys of reefs and marine resources, as well as community surveys on several islands/atolls in 2019. This has been an ongoing process to which MIMRA has added data each year to build a unique Marshall Islands resource database. During 2019 Coastal staff worked with the University of Guam Marine Laboratory to upgrade skills of staff for improved management of MIMRA's database and statistical analysis of data. In addition, over an eight-month period in 2019, MIMRA CMAC partner Marshall Islands Conservation Society, with technical supervision of the University of Guam Marine Lab, conducted a fisheries baseline assessment of fish markets in Majuro. This involved collecting information on fish landings in Majuro from both Arno and Majuro fishers with the goal of using the information gained to inform policies to balance community-level commercial fishing with maintaining healthy coral reef ecosystem conditions.

• After several years of planning and preparation, the Coastal Division with a team of partners, including The Nature Conservancy, University of Hawaii and University of Guam, embarked on an ambitious survey mission to the uninhabited Bikar and Bokak atolls in the northern Marshall Islands late in 2019. Aside from a few papers about birds issued by the Pacific Science Board and The Smithsonian Institute, there have been almost no studies of these two atolls. They have largely untouched marine and terrestrial environments. The MIMRA team spent several weeks on this mission to document for the first time the natural resources of these isolated atolls.

> 'Bikar and Bokak have largely untouched marine and terrestrial environments. The team spent several weeks on this mission to document for the first time the natural resources of these isolated atolls'

• Ongoing partnerships at the community, national and regional level. Coastal Division partnerships at the local level with communities and local governments on the outer islands, collaboration with the multiple organizations in the Coastal Management Advisory Council, relations with donor partners such as the Japan Overseas Fisheries Cooperation Foundation and the World Bank's Pacific Islands Regional Oceanscape Program (PROP), and membership in such regional groupings as the U.S. Coral Reef Task Force, the Micronesian Association for Sustainable Development and others allows MIMRA to work at multiple levels to engage resource owners in designing and developing locally-based sustainable management systems with the support of donors and technical advice available at the regional and international level.

Building links all around the RMI

MIMRA staff conduct a Reimaanlok survey with residents on Jabat.

Partnerships

MIMRA's Coastal Division and its many community-based programs benefit from its numerous partnerships with people in and outside the Marshall Islands. The participation of local leadership — traditional, elected, church, women and community leaders, fishers, copra makers and others — in developing resource management plans through the Reimaanlok Process is essential to the sustainability of the this work. Coastal staff has developed ongoing and lasting relationships with outer island communities that lead to benefits for the local communities as well as contribute to the overall health of marine resources nationally.

MIMRA continued to work with the Marshall Islands Mayors Association, as well as individual mayors, during 2019. This work includes dialogue with the mayors to gain endorsement of sustainable management practices for marine resource use throughout the country.

CMAC provides essential advice and technical expertise, and the World Bank provides resources to support the Reimaanlok Process. In addition, MIMRA works with organizations such as the University of Guam, the University of Hawaii and The Nature Conservancy on specific projects in support of sustainable management and use of island resources. All of these organizations assist MIMRA in numerous ways to develop sustainable management systems in collaboration with local communities.

> 'MIMRA works with organizations such as the University of Guam, the University of Hawaii and The Nature Conservancy on projects in support of sustainable management and use of island resources.'

MIMRA has maintained a 30-year collaborative relationship with the Japan Overseas Fisheries Cooperation Foundation (OFCF), which has contributed greatly to developing local level commercial fishing and income generating opportunities for fishers living on remote islands. Through its support of a network of fish bases, coupled with transport and fishing vessels, OFCF has been a major partner in coastal fisheries in the Marshall Islands. A key element of the partnership has been OFCF's ongoing transfer of skills to MIMRA staff through regular outboard engine and vessel maintenance trainings. In addition, OFCF annually supports a maintenance and upgrade program for facilities and equipment that support fishing activities in local communities.

The Coastal Division has maintained an active program of installing fish aggregating devices (FADs) for various atolls and islands in the Marshall Islands. At the same time, the FADs have experienced a generally short lifecycle

Fish, clams exported in '19

before they've been lost. In 2019, MIMRA worked with the UN Food and Agriculture Organization to develop a two-year program to start in 2020 for a sustainable FAD system in support of sustainable management and use of coastal fisheries resources.

Marine ornamentals including aquarium fish, farmed coral and giant clams were exported by two Majuro-based companies in 2019, principally to Asia, Europe and the United States. Of the aquarium fish, the flame angel, *Centropyge loriculla*, remained the most popular export commodity in 2019, with over 25,000 exported compared to the next highest volume export, the multicolor angel, which saw about 7,500 fish exported for sale in overseas aquarium markets.

The giant clam species T. Maxima was the only species that was cultivated by local farmers and MIMRA in 2019. Several farmers from Likiep and Arno atolls received more than $6,000 in 2019 for giant clams they grew and sold to the Majuro export companies.

The Outer Islands Fish Market Center in Majuro (OIFMC) made 41 trips to six atolls in 2019 to purchase fish for sale in Majuro. OIFMC purchased fish from fishers at Arno, Aur, Maloelap, Jaluit, Likiep and Wotje. This compares to the 49 visits to five atolls in 2018. Due to ongoing vessel and fuel price challenges on Ebeye, the Kwajalein Atoll Fish Market Center concentrated its fish and local produce purchases from local fishers within Kwajalein Atoll during 2019. It also purchased fish and local produce from residents of Namu, Ailinglaplap, Ailuk, Likiep, and Wotje as vessels were available to provide fish pickup.

The Coastal Division maintained ongoing installation of FADs in 2019. A two-year initiative in partnership with the FAO will see an expansion of FAD work from 2020.

'MIMRA has maintained a 30-year collaborative relationship with the Japan Overseas Fisheries Cooperation Foundation (OFCF), which has contributed greatly to developing local level commercial fishing.'

REIMAANLOK PROCESS

Looking to the Future program being expanded

The Reimaanlok (Looking to the Future) Process has been the guiding principle of the Coastal Division's work with local communities in the Marshall Islands to effectively manage, safeguard and develop their marine resources. Reimaanlok involves a series of steps to engage elected local governments, traditional leaders and all sectors of the community in developing their own resource management plans that are locally tailored to the particular circumstances of each atoll or single island. The process also involves extensive surveys and collection of marine resources data by Coastal staff to inform decisions of the local community.

In preparation for expanding Reimaanlok to three new atolls/islands, MIMRA staff met with the Mayors of Jabat Island and Ailinglaplap and Namu atolls to provide a briefing on the Reimaanlok Process. This was the first step in initiating the partnership between MIMRA and these remote communities. As part of the briefing with the mayors, Coastal staff outlined the team's schedule and activities lined up for each of the locations, including community consultations, socio-economic surveys and marine baseline assessments. All of these followed the briefing with the mayors. A series of back-to-back visits to the outer islands over the next couple of months allowed Coastal staff to get to all three atolls/islands, saving time and resources.

Among key points discussed with the Mayors was an explanation about how the Reimaanlok information and data are gathered and shared back with the communities. This sharing of information helps in the development of resource management plans including establishment of protected areas based on science, cultural and socio-economic needs.

Following the meeting with the Mayors, MIMRA conducted dive surveys in Jabat, Ailinglaplap and Namu from August 19 through September 2 while a separate team spent a total of 11 days during that same time period delivering education and awareness on the Reimaanlok Process and conducting socio-economic surveys with at least 70 percent of the households for community. The Reimaanlok land team interviewed 114 households on Ailinglaplap, 78 households on Namu, and 10 households on Jabat Island using a paper-based questionnaire on demographics, marine and terrestrial issues, climate change, water challenges, and aquaculture activities. The data was later transferred into an Excel database prior to

Three new atolls/islands launched the Reimaanlok Process in 2019, following a meeting of MIMRA with the mayors. From left: Coastal Division Chief Emma Kabua-Tibon, Jabat Mayor Heinckey Lomwe, Ailinglaplap Mayor Manbwij Baso, Namu Mayor Manini Jr. Kabua, and Coastal Fisheries Chief Scientist Kalena deBrum.

Aerial mapping done at Maloelap

A MIMRA diver does research on the reef at Namu Atoll.

REIMAANLOK PROCESS

Coastal staff upgraded their data management and analysis skills with Dr. Peter Houk of the UOG Marine Lab. From left: Rolandon Adde, Dr. Houk, Kalena deBrum and Kyotak Ishiguro.

analysis using SPSS statistical software.

Earlier in the year, from April 23-30, Coastal staff had visited Maloelap Atoll to continue facilitation efforts on the Reimaanlok Process with this northern atoll. The team was able to present findings from the marine and socio-economic surveys conducted in 2017, conduct aerial mapping work, and complete an aquaculture site assessment. More importantly, the local government council identified members to make up its Local Resources Committee (LRC). This is an essential element of the Reimaanlok Process that ensures representation from traditional leadership, the local council, women's clubs, fishermen's groups, and youth groups. MIMRA worked with the Mayor on a Terms of Reference for the Maloelap LRC before initial drafting of a resource management plan begins.

Data analysis essential

Over the past several years, the Coastal Division has devoted a significant amount of staff time, resources and effort to collect marine baseline data in support of the Reimaanlok Process. The marine datasets contain information regarding reef fish population structure, invertebrates, coral cover and diversity, and benthic substrates, all of which feed into resource management plans that are developed by communities under Reimaanlok. Given the increase in amount of marine surveys and field data now housed at MIMRA, additional training was needed for Coastal staff to perform data analyses. Dr. Peter Houk from the University of Guam Marine Lab provided a week of hands-on training in for MIMRA staff with R statistical software using datasets from the Marshall Islands.

Protected Areas Network (PAN)

The level and extent of protected areas that have been established throughout the Marshall Islands under the Reimaanlok National Conservation Area

New PAN office set up in Majuro

Marine experts at a Protected Areas Network meeting.

REIMAANLOK PROCESS

A fisherman is interviewed as part of a Majuro Atoll fish market survey conducted in 2019.

Plan vary considerably among communities. Some areas, for example, allow for subsistence take only while others are no-take reserves.

As a result of Reimaanlok achievements and after acquiring support from the Council of Irooj (Chiefs) regarding the proposed amendments to the Protected Areas Network (PAN) Act of 2015, the national government passed the PAN Amendment Act 2018 to ensure sustainability and effective management. Under the new provisions, the MIMRA Board has been identified as the Board for the PAN with specific roles including oversight on PAN applications, plans and budget reviews for approval after screening and prioritization by the PAN Office in coordination with the Coastal Management Advisory Council (CMAC). Additionally, the new PAN law gives distinct value for traditionally protected areas, and formalizes CMAC as the advisory and technical arm for the PAN.

With the establishment of the RMI PAN Office, a request was made to The Nature Conservancy (TNC) to help develop a strategic plan to guide the implementation of the PAN. This Strategic Plan was formulated during a Strategic Action Planning workshop held in Majuro June 5-7, 2019. The workshop was structured to encourage involvement and advice from various members that represent CMAC and other relevant stakeholders. Agencies and organizations that were consulted included key staff from MIMRA and affiliate partners under the CMAC from government agencies and institutions, namely the Marshall Islands Environmental Protection Authority, Office of Environmental Policy and Planning Coordination, Marshall Islands Conservation Society, Ministry of Natural Resources and Commerce, Ministry of Foreign Affairs and Trade, College of the Marshall Islands, and Women United Together Marshall Islands. The Strategic Plan was still in draft form and being reviewed by CMAC and partners.

Majuro Fish Market Surveys

MIMRA agreed to financially support a broad survey of Majuro Atoll fish markets to develop baseline information for improved management and long-term sustainability of this important sector of local fisheries.

Known as the "Quantitative fisheries-dependent baseline assessment of Majuro Atoll Fish Markets — from Science to Management," the survey was implemented by the Marshall Islands Conservation Society under the technical

MIMRA Director Glen Joseph, seated right, delivered a presentation on MIMRA's coastal fisheries program at the 2019 meeting of the U.S. Coral Reef Task Force held in Palau.

Majuro fish markets surveyed

REIMAANLOK PROCESS

supervision of the University of Guam Marine Lab from January 13 through August 31, 2019.

The program focused exclusively on Majuro Atoll, where targeted fish markets were visited on a daily basis to collect comprehensive information regarding commercial reef fish landings through a combination of fisher interviews and daily species-based landings at the fish markets in Majuro.

The survey collected information on landings from Majuro and those arriving from nearby Arno Atoll following novel electronic monitoring methodologies recently put into practice during fisheries-dependent assessments across several Micronesian jurisdictions.

Expected fisheries-dependent databases, together with available fisheries-independent databases (from the Reimaanlok Process), will be critical for balancing reef fish landings with desirable ecosystem conditions that sustainably support the ecological, economic and social services coral reefs provide.

Following a presentation to the MIMRA Board of Directors on January 28, 2019, the Board endorsed the survey plan and approved funding remaining costs of the project.

A memorandum of understanding was signed by MIMRA Director Glen Joseph and Marshall Islands Conservation Society Director Martin Romain on March 20, 2019 confirming the details of MIMRA's support for the survey.

Fish market survey checking fish sizes.

US Coral Reef Task Force

The U.S. Coral Reef Task Force was established in 1998 by Presidential Executive Order to lead U.S. efforts to preserve and protect coral reef ecosystems. It includes leaders of 12 Federal agencies, seven U.S. States, Territories, and Commonwealths, as well as the three Freely Associated States. The integrated partnership between the U.S. All Islands Committee (AIC) and the federal agencies of the Task Force allows multiple issues to be brought to the forefront to support effective coral reef management.

As a member of the U.S. Coral Reef Task Force and AIC, the Marshall Islands was invited to participate in the 42nd meeting hosted by the Republic of Palau from September 8-13, 2019. Marshall Islands was given the opportunity to showcase efforts around fisheries issues and management at the Business Meeting held at the Ngarachamayong Cultural Center opened by Palau President Tommy E. Remengesau, Jr.

During one of the panel sessions, MIMRA Director Glen Joseph shared the Marshall Islands achievements and challenges with the Task Force by providing a presentation that highlighted the Reimaanlok National Conservation Area Plan, the Coastal Management Advisory Council, the Ocean Policy and Implementation Plan, and the Marshall Islands Protected Area Networks program.

REIMAANLOK PROCESS

8-step process is the key

A coastal team conducts a marine resource survey at Ailinglaplap Atoll as part of the Reimaanlok Process Step 4.

The 8-step Reimaanlok Conservation Area Management Planning Framework helps atoll communities in the Marshall Islands think globally and act locally. It employs community-based tools and approaches to articulate local objectives that translate to national, regional and international goals.

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), followed by 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 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.

Among the many noteworthy atoll-appropriate features of the Reimaanlok process, in Step 3 a Local Resource Committee is established by the municipal government which then oversees the development of the resource management plan in that atoll. Step 4 is also noteworthy in that it entails gathering rich datasets along socioeconomic, ecological, and physical parameters.

These data inputs feed into the ConservationGIS database being developed by CMAC.

Some communities using this approach are finding early success as they proceed in the step-by-step process of articulating threats and their needs and priorities, codifying these into a management plan with various short, medium, and long-term measures including in enhancing their ecosystem and socio-economic resilience to climate impacts. Moreover, these communities remain engaged in the process of implementing and monitoring these measures as a unifying activity for their community.

At the national level, the Reimaanlok Framework is finding success as it becomes increasingly embedded within national government legislation, governance, and financing systems. The most important of these is its inclusion within the Marshall Islands Protected Area Network (PAN).

In addition to smaller grants from funding partners such as Seacology, GEF Small Grants Program, and the Micronesia Conservation Trust, there are a few large multi-million dollar initiatives that advance the Reimaanlok Framework including: World Bank/GEF-6 Pacific Regional Oceanscape Project, United Nations GEF-5 Ridge to Reef Project, German BMUB International Climate Initiative Project, and the US Department of Interior Coral Reef Initiative.

The Reimaanlok steps

1 Initiation
A need to develop a community-based resource management plan is identified either at the local government level or at the national level.

2 Project Scoping and Setup
Establishment of a project workplan, a team of facilitators, and identification of budget and resources.

3 Building Commitment
An initial visit is made by the national team to carry out education awareness about the benefits of conservation and resource management, and to build trust with the community.

4 Collecting and Managing Information
Further visits focus on collection and documentation of local knowledge and use of resources, socio-economic information, and baseline scientific information.

5 Developing the Management Plan Several visits are made to the community to develop, draft, and revise a detailed management plan.

6 Sign-Off
Achieve commitment to the plan through sign-off of management plan.

7 Monitoring, Evaluation, and Adaptive Management
Monitor achievement of the objectives — both biological and socio-economic. Adapt the management plan accordingly.

8 Maintaining Commitment
Ensure community has adequate support for ongoing management.

MIMRA Coastal Division staff visited Ailinglaplap Atoll to conduct a socio-economic survey of the community as part of Step 4 of the Reimaanlok Process.

REIMAANLOK PROCESS

Where are they now?

Step 3 Ajeltake, Buruon (all Majuro)

Step 4 Ailinglaplap-Bouj, Ailinglaplap-Jeh, Jabat, Namu, Mili, Arno, Aur, Bikar, Bokak, Likiep

Step 5 Ujae, Lae, Wotho, Ebon, Wotje, Utrik, Mejit, Lib, Maloelap

Step 6 Bikirin, Drenmeo, Bokan Botin, Ene Kalamur, Woja (all Majuro)

Step 7 Ailuk, Namdrik

FISH MARKETS

Pickup locations raised to six atolls

Although the number of fish pickup trips to the outer islands declined in 2019, the Coastal Division's Outer Islands Fish Market Center (OIFMC) in Majuro continued to play an important role in supporting income generation for fishers on remote atolls. The OIFMC conducted 41 trips to the outer islands in 2019, down from the 49 in 2018. It was the same number as OIFMC made in 2017.

OIFMC was able to increase to six the number of atolls serviced with fish pick up visits, compared to five in 2018. The OIFMC bought fish from Arno (18 trips), Aur (7 trips), Maloelap (6 trips), Wotje (5 trips), Likiep (3 trips), and Jaluit (2 trips). These purchases provided an important revenue stream for fishers on these atolls.

All together, OIFMC purchased 76,096 pounds of fish on these six atolls, paying fishers $80,300. This resulted in 51,940 pounds of fish being sold in Majuro, generating $109,114 for MIMRA.

Arno fishers received $33,087 for 29,719 pounds of fish; Aur fishers received $17,143 for 17,641 pounds of fish; Maloelap fishers received $12,590 for 11,354 pounds of fish; Wotje fishers received $10,950 for 10,176 pounds of fish; Jaluit fishers received $3,553 for 4,176 pounds of fish; and Likiep fish-

The MIMRA vessel MS Jebro during a visit to Likiep Atoll.

Outer Islands Fish Market Center, Majuro Fish Purchased/Sold FY2019

Atoll	Lbs. Purchased	Price	Lbs. Sol	Sales
Arno	29,719	$33,087	19,478	$41,879
Aur	17,641	$17,143	111,502	$24,128
Maloelap	11,354	$12,590	8,589	$16,224
Jaluit	4,176	$3,553	1,588	$3,090
Likiep	3.030	$2,977	2,318	$5,192
Wotje	10,176	$10,950	8,465	$18,601
Total	**76.096**	**$80,300**	**51,940**	**$109,114**

Kwajalein Atoll Fish Market Center 2019

Atoll	Lbs. Purchased	Price	Local Produce Purchased
Kwajalein	10,221	$17,914	$2,725

Outer Islands Fish Bought and Sold by OIFMC* Majuro 2015-2019

Year	Lbs. Purchased	Price	Lbs. Sold	Sales
2015	109,874	$129,306	81,914	$157,924
2016	102,992	$130,349	68,088	$140,130
2017	139,866	$130,902	78,138	$166,904
2018	109,918	$124,183	70,401	$159,959
2019	76,096	$80,300	51,940	$109,114

**Outer Islands Fish Market Center, Majuro.*

Residents rely on the local fish sales

ers received $2,977 for 3,030 pounds of fish.

The OIFMC enforced quality and size limits on the fish that are brought in from the outer islands. This is a long-standing policy to discourage fishers from catching under-sized fish.

With fuel costs remaining high, OIFMC worked to schedule visits to multiple atolls in one trip to maximize the amount of fish that could be picked up for delivery to Majuro. Because of the need for repair work on community fishing boats in Jaluit Atoll, the southern atoll received only two visits during the year.

The OIFMC is an important source of fish and fish products that MIMRA staff value add. As a regular supplier of fresh fish, many Majuro residents and local businesses and restaurants depend on the OIFMC for their fish purchases.

FISH MARKETS

The Coastal Division's Outer Islands Fish Market Center in Majuro. Below, Kwajalein Atoll Fish Market Center.

High fuel prices affect pickups

KAFMC used one vessel for fish and local food collection trips but due to limited availability because of various maintenance issues and high cost of fuel on Ebeye, fish pickup trips remained limited and inconsistent in 2019. Reducing opportunities for fish pickup trips, the KAFMC vessel needed repairs that had to be performed on Majuro.

Nevertheless, the KAFMC continued to supply limited amounts fish and local produce to the Ebeye community through direct purchases of fish and local produce from Namu, Ailinglaplap (produce only), Ailuk, Likiep, Wotje and Kwajalein fishers as well as providing assistance with fuel and ice provisions.

Due to fuel availability and mechanical issues with the boat, limited fishing trips were done as F/V Laintok waited for parts to arrive from off-island. As a result, KAFMC focused only on trips to the western part of Kwajalein Atoll and trips made by F/V Jebro and F/V Timur from Majuro to supply the KAFMC. For FY2019, KAFMC was able to directly inject to the communities $17,914 for 10,221 pounds of fish purchased, and $2,725 for produce. Fish and local produce purchases totaled $20,639 for 2019.

Japan OFCF essential for outer islands program

For nearly 30 years, MIMRA and the Japan Overseas Fisheries Cooperation Foundation (OFCF) have maintained and developed an exceptional and appreciated partnership that has been essential to MIMRA's fisheries program on outer islands. Since its first year of engagement with MIMRA, OFCF has worked closely with MIMRA to provide a range of assistance and training opportunities to build capacity locally and support fisheries development initiatives. OFCF works with MIMRA on maintenance of fisheries facilities, boats and engines, and provides technical assistance and knowledge transfer.

In 1992, OFCF launched a Pacific Island Nations fisheries program for the region in collaboration with fisheries departments in different island nations. Each year, during the annual OFCF Japan/Pacific Island Nations Fisheries Directors Meeting on fisheries cooperation, OFCF receives requests from each country for projects. After conducting field surveys and consultation with each government, the scope of the projects are developed and are followed by a drafting and signing of a memorandum of understanding and an implementation plan.

During 2019, MIMRA requests that were implemented with OFCF included::

- Maintenance and repair of community fishing boat outboard motors.
- Maintenance of Arno Giant Clam Hatchery.
- Maintenance and repair of MIMRA transport vessels of MIMRA and KAFMC at Ebeye.
- Repair and maintenance of MIMRA ice plants.

MIMRA and OFCF conducted a special training workshop covering FRP/outboard motor maintenance and fish quality techniques with 10 participants from MIMRA's fish bases on Jaluit, Aur, Maloelap, Wotje and Arno. The training consisted of lectures and hands-on practical work making fiberglass repairs on boats, troubleshooting two-stroke outboard engines and 'ikejime' — the Japanese method of preserving the quality of fish. The aim of the training was to build capacity of MIMRA outer island personnel in these areas. Participants also received tools and basic spare parts to help service MIMRA boats in these outer island sites.

MAINTENANCE

The MIMRA/OFCF-sponsored vessel and engine maintenance workshop run at the Uliga location for MIMRA Coastal staff.

Fix it, maintain it

The maintenance and repair program for 2019 included work in many areas.

Transport vessels: Yearly dry-dock and maintenance service and repairs of all MIMRA fish transport vessels (Jolok, Timur, Jebro, Lentanir and Laintok).

Community boats: Repaired two community fishing boats on the outer islands.

Fish base repairs: Wotje, Namu, Jaluit, Arno fish bases and Ine subfish base all received a range of maintenance, including ice machine and outboard engine repairs, and building maintenance.

Hatchery maintenance: Maintenance was performed on Likiep Atoll's Loto Giant Clam Hatchery raceway tank. The Woja (Majuro) Hatchery received building repairs and construction of new tanks. The Arno Giant Clam Hatchery received building maintenance and repairs to its salt water pump.

KAFMC and OIFMC: The Ebeye and Majuro fish markets received maintenance on their ice machines, KAFMC's cold storage unit was repaired, and OIFMC received equipment maintenance and inspection.

Vehicle maintenance: Maintenance and repairs were provided for MIMRA's eight vehicles.

FAD developments in 2019

FISH AGGREGATING DEVICES

Fish aggregating devices (FADs) have been used in and around the Marshall Islands for decades. The first FADs to be deployed in Marshall Islands were installed in the late 1980s, with two FADs deployed off Arno Atoll as part of a project to support rural fishing. However both FADs were lost within three months. Another four FADs were deployed around Majuro and Arno atolls in 1991, with three lost due to a cyclone six months after deployment, and the last one remained in place for 18 months. Another four FADs were deployed off Majuro from 2000–2003, with two of these funded by the Marshall Islands Visitors Authority.

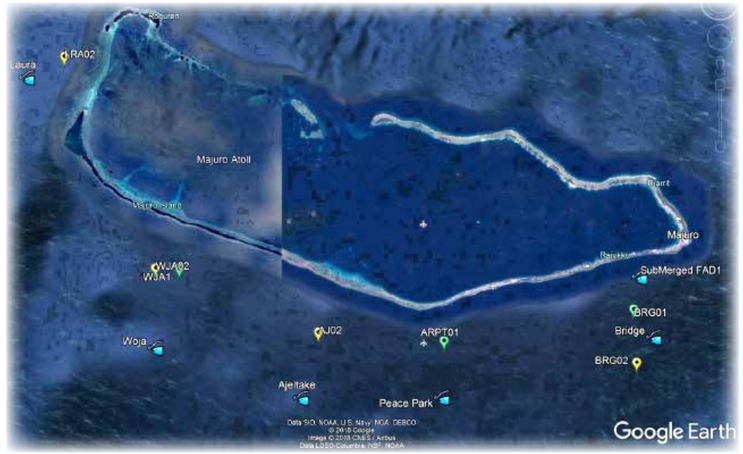
Since that time, MIMRA, with assistance from the Pacific Community (SPC) and the local governments where FADs have been located, has deployed 17 near-shore FADs.

From 2008–2019, 15 FADs were deployed in Majuro, with most lost, although some seem to re-surface from time to time when there is little current.

MIMRA has also deployed two FADs off Kwajalein Atoll and one near Lib Island. Unfortunately, these have been lost. All of the FADs deployed in the Marshall Islands have been near-shore or offshore, Indian Ocean design with the shallowest deployed in 800 meters of water, but most deployed in depths ranging from 1,400 to 2,000 meters.

Despite the difficulties in maintaining FADs for the long-term, the placement and use of FADs over the past two decades has shown the benefits of FADs for local fishers.

With all the challenges and constraints faced over the years, MIMRA has been fortunate to gain assistance from the UN Food and Agriculture Organization (FAO) for two FAD projects with implementation to start in 2020 for two years. The two FAD projects:



FADs scattered around the west, south, and east sides of Majuro.

> 'The placement and use of FADs over the past two decades has shown the benefits of FADs for local fishers.'

• National Project: Technical assistance to support sustainable management and use of coastal and near-shore fisheries resources. Goals for this project are to develop and support a near-shore sustainable FAD program; improve sustainable, near-shore and coastal fishing techniques available for local fishers; and enhance technical skills of local fishers and communities for improved fish processing and value adding techniques.

• Regional Project for Enhancing Livelihoods and Food Security through Fisheries with Near-shore Fish Aggregating Devices in the Pacific Ocean. The goals are to strengthen and develop community near-shore FAD Programs to provide improved access to high value species; enable and strengthen fishers associations and cooperatives; develop livelihood opportunities and revenue generating activities and products; and improve safety at sea for fishers of near-shore fish aggregating devices.

It is envisaged that the two FAO projects will complement each other to strengthen implementation and management of ongoing FAD projects. The aim is to move from being an ad hoc activity to a National FAD Program for the Marshall Islands. This will involve developing new FAD designs to increase longevity and increasing local fishers income generating opportunities.

Aquaculture program moves in new directions

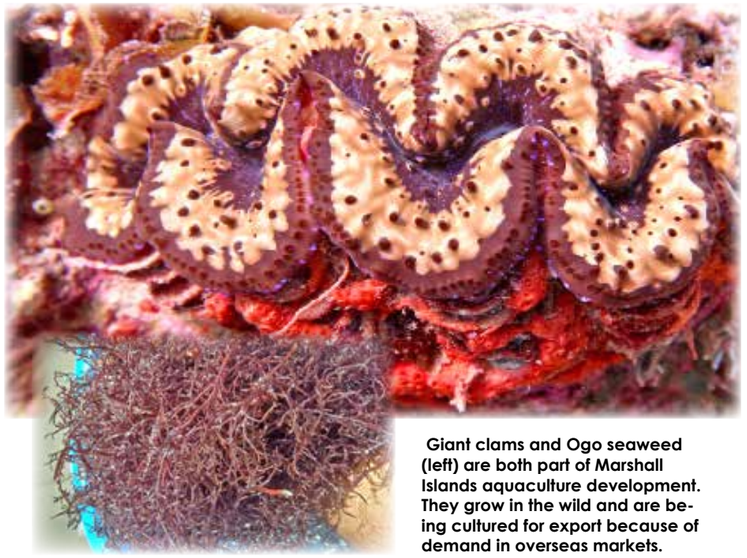
AQUACULTURE

Aquaculture has been identified as a sector for growth to increase availability of marine products in the local market, contribute to food security, and enhance livelihoods through job creation and income generating opportunities. Numerous constraints, however, stand in the way of Pacific Island countries enabling aquaculture development as an important contributor to economic and social development for local communities.

One of the challenging areas has been the complexity of sustainable aquaculture and the various technical and financial barriers that must be overcome to minimize risks associated with growing and sustaining production.

Slow growth in the aquaculture sector has seen production levels stagnant for many species. A number of factors such as input costs, limited infrastructure and poor extension support have constrained aquaculture growth and investment in the sector, which is seen as high-risk investment.

MIMRA realizes that one way for aquaculture to be a successful contributor to food security and livelihood improvement in the Marshall Islands is to support detailed investigations of the risks associated with sustainable aquaculture production. Another important need is to identify and prioritize species most suitable according to specific social, technical and geographical constraints, and to develop greater cooperation among donors and specialized technical agencies to support priority cost-effective species for long-term sustainable development. During the development of Micronesian Association for Sustainable Development (MASA), it was evident that other member countries have the same view. This led the UN Food and Agriculture Organization (FAO), in collaboration with SPC and MASA, to develop and implement a project in 2019 known as: "Aquaculture Business Investment Planning and Development to Increase Resilience and Improve Food Security."



Giant clams and Ogo seaweed (left) are both part of Marshall Islands aquaculture development. They grow in the wild and are being cultured for export because of demand in overseas markets.

The project's objective is to undertake critical baseline studies in each of the four countries of the MASA: Federated States of Micronesia, Marshall Islands, Republic of Nauru and Palau. The aim is to assess technical, economic and social risks and cultural factors that constrain development and act as barriers to sustainable aquaculture production in each country.

It will also focus on aquaculture development that is economically viable and may in the future be capable of standing on their own as commercial developments.

MIMRA, alongside FAO and SPC, conducted a three-day stakeholder consultation to address factors that act as barriers to sustainable aquaculture production, identify business development opportunities, and develop a robust business plans and tools that are relevant to the Marshall Islands. Among the stakeholders participating in this exercise: Office of Commerce, Investment and Trade, UNDP Small Grant Program, CMI Land Grant, Ministry of Commerce and Natural Resources, and private sector companies. All have contributed tremendously to the development of Marshall Islands Aquaculture Development Strategy Plan, which is in its final review stage.

Farming giant clams in Majuro

AQUACULTURE

Coastal Division Aquaculture Development Advisor Melba White, second from right, and MIMRA staff Jessie Capelle, left, and Clyde James, right, met with Majuro Mayor Ladie Jack to update him on plans for expanding aquaculture programs in Majuro.

After the successful trial run of giant clam farming in Majuro Atoll in 2016, MIMRA's Aquaculture program took the next step to implement the project at a full scale for Majuro. MIMRA's former black pearl hatchery has been converted into a giant clam hatchery where 12 new raceway tanks and a seawater intake pipeline were installed. MIMRA also plans to utilize the hatchery as a research station for other aquaculture viable marine invertebrates and plants. Plans are underway to recruit and conduct training targeting communities where results from the pilot trial showed successful growth of juvenile giant clams in ocean-cage nursery. The team met with Majuro's Mayor who expressed enthusiasm and has agreed to provide support for this sustainable alternative livelihood project for Majuro Atoll communities.

Coastal Division outreach session on Wotje Atoll as part of the Reimaanlok Process for development of a resource management plan.

$$ for Wotje, Aur associations

Two new aquaculture associations were established at Wojte and Aur atolls after a community consultation and awareness visit by the MIMRA aquaculture team during 2019. The team presented an overview of MIMRA's aquaculture projects and conducted a habitat assessment to determine suitable sites to carry out aquaculture activities. Wotje and Aur Aquaculture Associations have recently been granted funds from UNDP Small Grant Program to establish their own community-led hatcheries.

The aquaculture team is currently on standby to provide technical assistance with construction of raceway tanks, giant clam farming training and hatchery operation and maintenance.

Unlike Likiep Atoll Aquaculture Association, where the MIMRA Loto hatchery continues to supply clam seeds to its members, Wotje's and Aur's associations will take charge in managing their own hatcheries and producing their own clam seeds.

This approach, which MIMRA is promoting, aims to empower and enable different group members (men, women and youth) of the community to take charge in managing their resources and become responsible and active members of the community.

MIMRA's former black pearl hatchery in Woja, Majuro has been converted to grow giant clams in 12 new raceway tanks.

MIMRA buys hatchery

The purchase in 2019 of a fish and aquaculture hatchery in Majuro from Aquaculture Technologies of the Marshall Islands (ATMI) opens opportunities for growth of aquaculture initiatives supported by MIMRA. This was an important step to stabilizing and expanding aquaculture development in the Marshall Islands. The modern hatchery is an invaluable asset for expanding production of fish, seaweed and aquaculture products such as giant clams for distribution to and farming on remote islands. This will be used to support various initiatives on outer islands, including fish farming and giant clam growing.

MIMRA will be using the hatchery to invigorate the domestic aquaculture industry, particularly on outer islands, following success with giant clam growing at Likiep and Arno. The aim is to produce 'spat' (babies) and provide them to farmers to raise to export size in their backyard lagoons.

Cultured clam, coral export rise

The export of cultured clams and coral for offshore aquarium markets has shown steady growth over the past several years. Ornamental fish exports declined during 2019. Companies based in Majuro and Ebeye export cultured clams and coral and fish caught in the wild, while re-exporting clams and coral grown by farmers in neighboring countries such as the Federated States of Micronesia and Kiribati.

Cultured clams and coral exports from the Marshall Islands increased significantly in 2019 compared to the previous year. There was similar strong growth in re-exports of these same marine products re-exported from Kiribati and the FSM.

The Marshall Islands has three local companies — two in Majuro, one in Ebeye — that exported marine products for the ornamental aquarium trade internationally in 2019. TSL Enterprises and ARRO Corporation in Majuro and Kwajalein Fish Exports on Ebeye export fish, clams, coral and other marine products to aquarium markets in Asia, the United States and Europe.

Despite only a small number of companies exporting marine products, the marine ornamental trade in the Marshall Islands continued to grow in 2019 owing to the increased international market demand. One of the local exporters saw an increase in the number of international buyers contributing to the annual growth.

Although giant clams known as *T. squamosa* and *T. derasa* are not as highly valued as *T. maxima*, all are being cultivated and exported from the Marshall Islands. The annual increase for the clam exports is also evident with re-exported clams imported from Federated States of Micronesia for further export by the registered exporters. MIMRA also issued a re-export permit for clams sold by Kiribati's local farmer to one of the registered exporters. New re-export clam species (*T. gigas* and *Hippopus hippopus*) were imported from Kiribati.

The increase in clam exports from the Marshall Islands is indicative of an increasing number of giant clam farm-

Atoll farmers earn $6,000+

AQUACULTURE

ers on remote outer islands who are marketing their products to the export companies. There was a decline in MIMRA's distribution of clam seeds to farmers in 2019 due to a high mortality rate that the Likiep clam hatchery experienced in 2017 and 2018 with a juvenile clam batch that would have reached marketable sizes for marketing and export in 2019. Despite this slight decrease in seeding, the increased level of clam export is evident.

It can be assumed that the increase is the result of the growing number of local farmers from Arno and Likiep contributing to the increased number of clams being sold and exported. Not only did demand from international markets increase in 2019, but the interest in giant clam cultivation expanded to atolls and communities outside of the traditional growers at Arno and Likiep. It is safe to assume that an ongoing increase in exports can be expected in the years to come. Several local farmers from Likiep and Arno received more than $6,000 during FY2019. The two local exporters also increased their buying price. As a consequence, both T. maxima export and farmers' revenue will continue to rise in the coming years.

As for cultured corals, *Acropora sp, Zoanthidus sp* and *Acropora aculeus* were the most popular exported corals in this period.

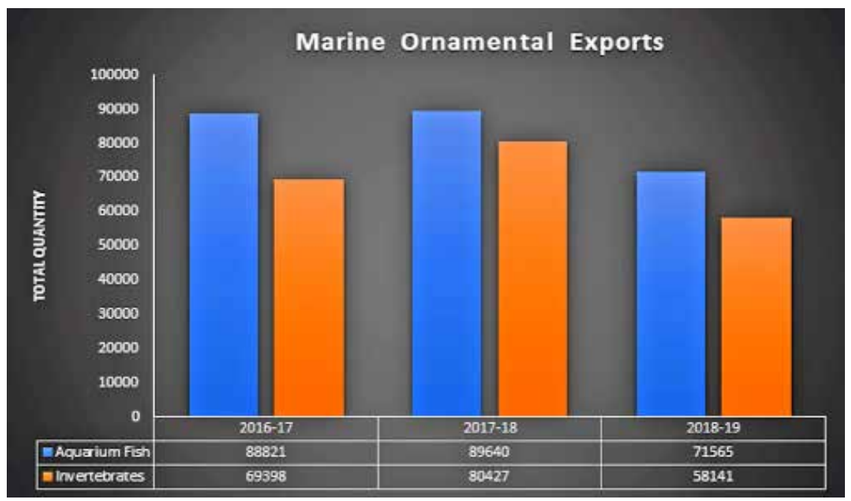
The highest number of re-exported species of corals are also *Sarcophyton sp, Acropora sp,* and *Zoanthidus sp*, which all are originally imported from the FSM to be re-exported internationally. FSM aquaculture farmers rely on Majuro's exporters purchasing both corals and clam species and importing them into the Marshall Islands for re-exportation.

MIMRA will continue to support its regional counterparts in allowing access for their products to reach international markets through re-exportation processes as long as requirements are met and fulfilled by importing countries.

Though the Marshall Islands is not a member of the Convention on International Trade in Endangered Species (CITES), MIMRA ensures that the condition of marine products and export permits comply with CITES requirements. CITES regulates the international trade of wild fauna and flora and prohibits trade and export of wild giant clams and corals, both of which are listed as endangered species.

Consequently, MIMRA ensures that all giant clams and coral bound for export are cultured through a rigorous inspection prior to permit issuance and export.

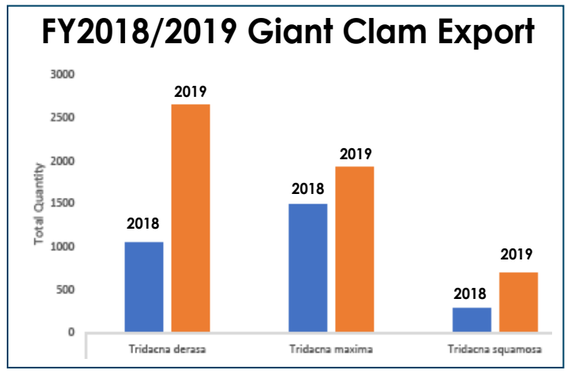
Marine ornamental exports

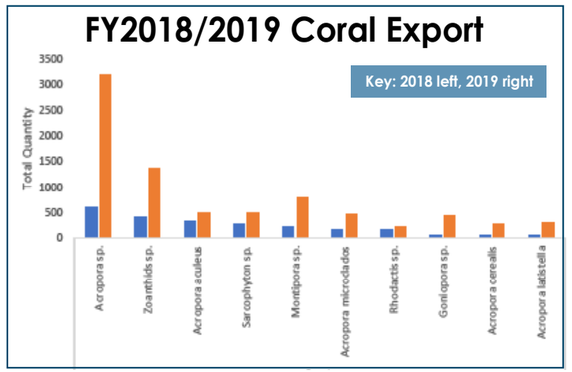


A Comparison of Aquarium Fish and Invertebrate Exports for each of the fiscal years.

The three aquaculture companies in the Marshall Islands also export aquarium fish and invertebrate commodities caught in the wild for markets in Asia, Europe and the United States. The marine ornamental export trade decreased in 2019 after two years of nearly identical export levels. Aquarium fish exports declined from a high of 89,640 in 2018 to 71,565 in 2019. Invertebrate exports also declined from 80,427 in 2018 to 58,141 in 2019.

Flame angel, *Centropyge loricula*, remained the most popular aquarium fish export in 2019, as it has for many years.





AQUACULTURE

Operations data

FINFISH & SEAWEED

Time Period	Project Resource	Targeted	Resource Location	Operator/Sponsor
2013-present	Moi Fish Farming	Moi fish (Polydactylus sexifilis)	Majuro	ATMI/RALGOV
2013-present	Seaweed Farming	Ogo Brown seaweed (Gracilaria spp)	Majuro	ATMI
2018-present	Rabbit Fish Farming	Forktail Rabbitfish (Siganus argenteus)	Majuro	ATMI

Current aquaculture activities that are being implemented in RMI

BLACK PEARL OYSTER

Time Period	Project Resource	Targeted	Resource Location	Operator/Sponsor
2008-present	Namdrik Atoll Development Association	Black-lip pearl oyster *(Pinctada margaritifera)*	Namdrik	Namdrik Local Govt/ PACAM/ UHSeaGrant/MERIP

GIANT CLAM, ASAPHIS CLAM, TROCHUS & CORAL

Time Period	Project Resource	Targeted	Resource Location	Operator/Sponsor
1993-present	Likiep Giant Clam Satellite Farming	Elongated Giant clam *(Tridacna maxima)*	Likiep	MIMRA
1995-present	Marshall Islands Mariculture Farm/Export	Giant Clam *(T. maxima, T.squamosa)* Hard corals *(Acropora spp.)* Soft Corals *(Sarcophyton spp.)*	Majuro Majuro	MIMRA/ORA MIMF/ORA
2003-present	Arno Giant Clam Satellite Farming	Elongated giant clam *(T. maxima)*	Arno	MIMRA/OFCF
2017-present	Atoll Marine Aquaculture/Export	Elongated Giant Clam *(T.maxima)* Top Shell Trochus *(Trochus niloticus)*	Majuro	AMA
2018	Food Security Enhancement	Giant Clam *(T. maxima, H. hippopus)*: trial Pacific Asaphis *(Asaphis violascens)*	Majuro Majuro	CMI Land Grant

Fisheries Enforcement Officers monitor the unloading with one of the purse seiner's crew.

Fisheries data and industry control improvements

The foundation of MIMRA's Oceanic Division is the hands-on work of national Port State Control fishing vessel inspections, independent reports of fisheries observers working on purse seine and longline vessels, the monitoring of in-port tuna transshipment, and innovations such as MIMRA's efforts to develop a system to accurately weigh tuna tonnage on board purse seiners as it is transshipped.

This "nuts and bolts" work is generating fisheries data fundamental to management of the tuna fishery in the Marshall Islands and the region, and implementing monitoring and control measures essential to the progress of the Marshall Islands as the resource owner.

Most importantly, this work sets the stage for the regional and international engagement by MIMRA and the Marshall Islands with such fisheries management entities as the Western and Central Pacific Fisheries Commission (WCPFC), regional partners including the Forum Fisheries Agency (FFA) and the Pacific Community (SPC), resource owner partners in the Parties to the Nauru Agreement (PNA), and important donors and fisheries enforcement partners.

All of the work of MIMRA's Oceanic Division centers on the duty as resource owners to responsibly and sustainably manage, conserve and develop oceanic fishery resources for the benefit of this and future generations.

Various milestones for MIMRA in 2019 included: Moving into MIMRA's new headquarters, which includes a state-of-the-art monitoring, control and surveillance (MCS) command center, with large screens set up that broadcast, in real time, a Google Earth view of the Pacific region with the location and movement of registered fishing vessels reporting to FFA on the Vessel Monitoring System; nine fisheries observers were trained in electronic monitoring to review longline vessel fishing trips observed electronically; another record year of revenue from the purse seine Vessel Day Scheme managed by the PNA; the highest number of tuna transshipments in three years; nearly 100 percent coverage of all in-port transshipments; implementation of the initial stages of establishing the first Competent Authority (CA) that, once established, will pave the way for opening international markets such as the European Union (EU) to tuna and other marine exports from the Marshall Islands; and completion of an updated Tuna Management Plan.

Gaining access to European market

Participation in the fisheries 'value chain'

A glimpse of Majuro's status as a major tuna transshipment hub.

MIMRA is focusing on initiatives that could transform the country's engagement in the multi-billion dollar commercial tuna fishery in the region. These initiatives include establishing a CA to gain access to the EU market for seafood products from the Marshall Islands, and engaging in all aspects of the tuna value chain to go beyond simply selling fishing licenses to distant water fishing nations to fish in the Marshall Islands exclusive economic zone (EEZ).

Work to establish the first CA to facilitate access to the largest global seafood market, the European Union, moved into gear in 2019. A CA is an entity that provides independent verification to confirm that tuna catches for export meet EU requirements. This is accomplished through inspections of vessels and processing plants, laboratory testing, and catch documentation. The EU requires seafood exports from the Marshall Islands to meet compliance requirements through a recognized CA.

Establishing national standards that meet international standards is part of the CA process. Industry has encouraged MIMRA to add value to the country's status as a major tuna transshipment hub by expanding export options for the tuna industry. In 2019, tuna was exported to markets in the United States, Canada, and Asia.

> 'A second initiative was launched in 2019 to engage Marshall Islands participation in the entire "value chain" of tuna from the sale of fishing days to the delivery of tuna to processing plants.'

A second initiative was launched in 2019 to engage Marshall Islands participation in the entire "value chain" of tuna from the sale of fishing days to vessels to the delivery of tuna tonnage to processing plants to the production of fish products. The PNA vessel day scheme revolutionized island management of and engagement in the purse seine fishery since it was fully implemented beginning in 2010. The Vessel Day Scheme (VDS) is a platform that allows for greater participation by individual PNA members or groups of islands. At the moment, the Marshall Islands, through MIMRA, sells several thousand fishing days annually to fishing companies, sales that generate around $30 million annually.

MIMRA's long-term objective is to move beyond "only" selling fishing days to engaging in additional steps in the chain from catch to processing — all of which contribute a piece of the multi-billion dollar value of the tuna industry in the Pacific. At the present time, vessels buy fishing days from the Marshall Islands under the VDS to access a portion of the value chain — fishing access. MIMRA's objective is for an integrated approach to participation in the tuna fishery. MIMRA's idea is that instead of deriving revenue from only sale of fishing days, it can generate value — revenue — from the tuna resource at every stage in the process from catch to processing.

The CA and participation in the tuna value chain can increase the effective-

PNA's branding shows the way

The brightly-painted MIMRA building that sits alongside Majuro's lagoon.

ness of management of the fishery and the benefit it brings for the Marshall Islands. PNA's establishment of its brand and marketing arm known as Pacifical is a prime example of innovation to generate greater benefits for the islands. Pacifical has co-branded with global tuna companies to distribute sustainably caught tuna from PNA waters into a range of markets including Australia and Europe.

Once a CA is established and certified by the EU, tuna vessels can off-load in Majuro and have direct market access to the EU. Currently, four Pacific nations have competent authorities: Fiji, Kiribati, Solomon Islands and Papua New Guinea. Work begun in 2019 is paving the way for the Marshall Islands to join these Pacific Island neighbors with its own CA.

New headquarters

MIMRA moved into a new high-tech headquarters in February 2019. The four-story MIMRA building includes state of the art communications and monitoring gear for fisheries surveillance, office space and meeting rooms for oceanic and coastal fisheries programs, and legal and financial management work. At the opening of the new building, Natural Resources and Commerce Minister Dennis Momotaro called the new facility "a milestone achievement." MIMRA Director Glen Joseph called the new fisheries headquarters "a beacon of hope and a symbol of self-determination."

Tuna management plan

The Oceanic Division spent considerable effort in 2019 to update its Tuna Management Plan. As revenue from the tuna fishing industry is a key driver of the local economy — fisheries revenue contributed over 10 percent to the national government's national budget during the year — updating the Tuna Management Plan was essential. New Zealand Ministry of Primary Industries representatives worked with Oceanic Division staff to bring the plan into the current context of MIMRA's multiple regional and international obligations, and development of the Vessel Day Scheme.

Improved fisheries surveillance

In February 2019, the Marshall Islands became the first FFA member to sign a new surveillance agreement, paving the way for use of two airplanes that, with Australian funding, is providing 1,400 hours of aerial surveillance in the western Pacific region. Aerial surveillance has remained a major challenge for the Marshall Islands and other FFA members for policing their EEZs. This new development with Australian support is helping the islands close gaps in monitoring, control and surveillance of commercial tuna fishing in the region.

The challenge is simple: Pacific island nations cover millions of square miles of ocean with only a handful of patrol boats to enforce fisheries rules. The result is an ongoing and significant level of illegal fishing that is estimated to cost the islands hundreds of millions of dollars a year in lost revenue. Looking at the challenge from MIMRA's perspective, the Marshall Islands' expansive 750,000 square mile EEZ is three times the size of the American state of Texas. But the Marshall Islands has a single patrol boat for surveillance and enforcement. That is like the police having one vehicle to monitor all of Texas.

Australia's commitment to support 1,400 hours of additional aerial surveillance is increasing this to its highest level ever. The new program is providing the surveillance support with two aircraft. This complements the 300 hours of aerial surveillance provided during four regional fisheries surveillance operations conducted annually.

An additional benefit of the Australian-funded aerial surveillance is that the Marshall Islands and other FFA members will be in charge of determining where the planes conduct surveillance in their EEZs.

Record level of VDS revenue

Purse Seiner crew help ease the tuna out of the ship's hold.

The VDS and zone-based management

The Vessel Day Scheme saw trading of fishing days among PNA members and pooling days together to give fishing vessels access to multiple fishing zones during 2019. These arrangements within the VDS, that allow for flexibility in use of fishing days as well as value-adding by members, continued to demonstrate the value of the VDS in 2019. MIMRA continued its policy of pooling days with a group of four other PNA nations. This raised the value of the fishing days by giving buyers access to multiple fishing zones through the purchase of the pooled days. MIMRA was successful in selling pooled days, as well as fishing days sold to bilateral partners such as the United States, China, Taiwan and others, well in excess of the PNA benchmark of $8,000 per fishing day.

> 'From the perspective of the Marshall Islands, revenue has similarly risen in dramatic fashion, with a significant impact on the country's national budget.'

This resulted in the VDS generating a record level of revenue for the Marshall Islands in 2019 of $28.1 million, up eight percent from the previous year's record $25.8 million. Including revenue generated in other areas mostly related to the VDS, MIMRA's 2019 net operating revenue rose to the record level of $34.6 million in 2019. This provided the resources for MIMRA to contribute $29.1 million to the Marshall Islands national budget in 2019, close to the amount provided in 2018 of $29.4 million. This amounts to over 10 percent of the national budget.

The financial success of the VDS is shown in the increase in revenue received since 2010, when it was $60 million to the entire PNA group. With PNA fully implementing the VDS from 2010 onward, revenue increased to the $500 million range for both 2018 and 2019. The revenue estimate for the PNA in 2019 is $493.6 million from the purse seine industry. From the perspective of the Marshall Islands, revenue has similarly risen in dramatic fashion, with a significant impact on the country's national budget. In 2012 the combination of VDS and related fishing rights generated $5,936,978. Virtually every year since then, a new record has been set, including in 2019 when VDS and fishing rights revenue rose to $30,458,253.

In addition to the VDS and fishing rights, revenue generators for MIMRA in 2019 included licensing and registration fees ($2.6 million, up slightly from 2018 due to an increase in vessel registration); observer fees ($766,760, down slightly from 2018); transshipment fees ($538,000, up from 2018 because

The value of VDS in caring for fish stocks

Total Catch Purse Seine Fleets* in the Marshall Islands EEZ 2012-2019

Year	SKJ	YFT	BET	OTH	Total
2012	22,977	835	416	14	24,242
2013	40,113	1,514	538	6	42,171
2014	66,196	3,477	668	18	70,359
2015	21,293	4,295	126	0	26,344
2016	72,329	5,790	648	0	78,767
2017	22,765	2,901	788	65	26,519
2018	26,424	2,168	253	58	28,903
2019	4,806	65	410	11	5,292

Figures are metric tons. * Marshall Islands, Taiwan, S. Korea, US, PNG, China, FSM, Kiribati, and Nauru (listed in order of catch tonnage). ***Key:*** BET=Bigeye Tuna, SKJ=Skipjack Tuna, YFT=Yellowfin Tuna, OTH=Other.

Total Catch Longline Fleets* in the Marshall Islands EEZ 2012-2019

Year	ALB	BET	YFT	OTH	Total
2012	254	4,027	1,372	737	6,390
2013	237	2,972	2,014	738	5,961
2014	172	4,680	2,346	680	7,878
2015	122	2,286	1,380	359	4,147
2016	67	1,522	1,127	420	3,136
2017	71	1,698	1,389	445	3,604
2018	52	2,210	1,262	316	3,838
2019	134	1,974	1,699	410	4,216

Figures are metric tons. * Marshall Islands chartered, FSM, Japan, China and Taiwan (in order of catch tonnage). ***Key:*** ALB=Albacore, BET=Bigeye Tuna, YFT=Yellowfin Tuna, OTH=Other.

Total Catch Pole-and-Line Fleets* in the Marshall Islands EEZ 2012-2019

Year	BET	SKJ	YFT	Total
2012	3	3,578	15	3,596
2013	3	1,719	4	1,726
2014	3	3,317	21	3,341
2015	0	615	2	617
2016	0	429	1	430
2017	0	72	0	72
2018	0	1,017	1	1,018
2019	0	1,022	2	1,024

Figures are metric tons. * Pole-and-line fleet is exclusively Japan.
Key: BET=Bigeye Tuna, SKJ=Skipjack Tuna, YFT=Yellowfin Tuna

of increased transshipping in Majuro); fishing violation fines ($200,000, down from 2018); and "others" ($78,253). Virtually all of this net operating revenue was generated as a consequence of participation in the PNA VDS system.

Sale of fishing days through the PNA VDS to distant water fishing nations that are not flagged or based in the Marshall Islands averaged over $11,000. This includes sales through bilateral arrangements, the treaty with the United States through the FFA, and the sale of fishing days pooled with other PNA members that offer multi-zone access. Sale of fishing days to Marshall Islands-flagged purse seine vessels generated $7,000 each, a six percent increase from the 2018 domestic price of $6,600.

The VDS, however, is not only a mechanism to generate revenue from the fishing industry. Through the VDS, the Marshall Islands together with the rest of the PNA implements a system of sustainable fishing for the purse seine industry in the region. The PNA is beginning to implement a VDS for the longline industry as well. For the purse seine fishery, PNA's VDS limits fishing effort to about 45,000 days per year together with the benchmark minimum price of $8,000. Each of the nine VDS participants is given an allotment of fishing days. Limiting fishing effort raises the value of fishing days while maintaining fishing at sustainable levels.

The impact of VDS limits has been demonstrated in stable in-zone purse seine vessel catch levels over recent years compared to uncontrolled high seas fishing.

In addition, the VDS system includes monitoring and verification requirements that improve overall management of the fishery: 100 percent coverage of purse seine vessels by fisheries observers, in-port transshipment, an annual several month moratorium on use of fish aggregating devices (FADs), and other conservation and management measures.

449 ships offload catches in 2019

A crew member works with frozen fish during a transshipment operation.

Tuna transshipment and exports

The PNA requirement of in-port transshipment for purse seine vessels licensed to fish in PNA waters, coupled with Majuro's location and the services offered, has led to Majuro becoming the busiest tuna transshipment port in the world since 2015. Although still below the all-time record of 551 transshipments established in 2016, transshipment in 2019 set a three-year high. A total of 449 purse seiners transshipped in Majuro during the year, maintaining a string of five consecutive years with over 400 transshipments annually.

Significantly, 2019 generated an all-time record for average tuna tonnage per transshipment of 807 metric tons (mt). This is the first time since tuna transshipment operations took off in 2014 that average tonnage per transshipment had gone above 762mt, the 2018 average. Overall, the 449 transshipments accounted for 362,454mt of tuna moving from purse seiners to carrier vessels in Majuro port in 2019. This was a considerable increase over the tonnage the previous two years.

The majority of the tonnage transshipped in 2019 was skipjack tuna, which accounted for 329,833mt — or 91 percent of the total. In addition, 24,499mt of yellowfin tuna and 3,123mt of bigeye tuna rounded out the transshipment total.

Over two-thirds — 83 — of the 112 transshipments by Marshall Islands-flagged purse seiners were carried out in Majuro. These Marshall Islands-flagged vessels transshipped 84,313mt of tuna in Majuro and three other ports in the region, two in Kiribati and in Pohnpei.

Taiwan-flagged vessels led all purse seiners in the number of transshipments conducted in Majuro port. The 141 transshipments by Taiwan fishing vessels accounted for over 30 percent of the 449 transshipments in 2019 and amounted to 109,574mt. In 2018, Taiwan similarly accounted for about the same level, with 139 transshipments and 102,201mt of tuna.

Second to Taiwan in the number of transshipments in Majuro were Marshall Islands-flagged vessels, which performed 83 transshipments with 67,501mt moving through Majuro port. FSM Arrangement vessels accounted for the third highest number of 58 for 48,927mt. Fourth were US-flagged vessels with 54 transshipments for 44,19mt. Number five PNG and number six Nauru each had 32 transshipments, with virtually the same level of tonnage: 27,673mt for PNG vessels and 27,457mt for Nauru-flagged vessels.

Other vessels that used Majuro for transshipment in 2019 included those flagged with China, Solomon Islands, Philippines, S. Korea, Vanuatu, Kiribati, New Zealand and Tuvalu.

The 449 tuna transshipments generated $538,000 in 2019, up from $475,500 the previous year. MIMRA monitored almost 100 percent of the in-port transshipments with fisheries officers and fisheries observers.

The port calls made by these purse seiners as well as the carrier vessels that receive the tuna resulted in numerous spin-off economic benefits to the local economy. Some vessels refuel locally, and most purchase food supplies

Tuna being off-loaded into containers at Pacific International Inc.'s dock in Majuro.

PII plays bigger fisheries role

from local retailers and wholesalers. In addition, the crews on these vessels have shore leave and are customers at local stores, hotels, restaurants, bars and nightclubs.

In addition to monitoring purse seine transshipments in Majuro port, fisheries officers and observers monitored almost all of the off-loading of tuna by locally-based longline fishing vessels associated with the Marshall Islands Fishing Venture, a Majuro-based processing and export company. MIFV is a subsidiary of Luen Thai. The 22 longline vessels off-loaded 3,763mt in Majuro, an increase over the 2,822mt off-loaded the previous year. The bulk of the catch was bigeye tuna (1,745mt) and yellowfin tuna (1,486mt). A variety of other species made up the balance: blue marlin, albacore, wahoo, mahi mahi, swordfish, sailfish, pomfret, moon fish, and skipjack. MIFV exported by air mainly fresh chilled tuna species to markets in the US, China and Canada. Frozen fish, including rejects and bycatch, is shipped to Asia via containers or sold locally.

The Pan Pacific Foods (PPF) tuna loining plant has six Marshall Islands-flagged purse seiners associated with it that supply the plant with raw materials. PPF's exports nearly doubled from 2018 to 2019, continuing an upward trend. A total of 13,246mt was exported in 2019, up from 7,065mt the previous year. This included 322mt of processed skipjack tuna loins, 12,863mt of whole skipjack and yellowfin, and 61mt of fishmeal. All of the processed tuna and fishmeal was exported to countries in Asia.

Private sector growth

The private sector company Pacific International Inc. (PII) is playing an increasingly important role in developing Majuro as a hub for the purse seine fishing industry. PII continued to expand both its shore-side dock service facilities and its tuna unloading operation in 2019. After initiating a trial uploading with one purse seiner amounting to 50 tons of tuna at the end of 2018, PII handled six purse seiner unloading in the March to June period involving 2,182.5mt of tuna.

This involved transferring frozen tuna from purse seiners directly into freezer containers at the PII dock facility in Majuro. PII's tuna unloading operations filled 90 40-foot containers for export to overseas processing plants. Four of the six purse seiners that discharged tuna for export by freezer container also used PII's facilities to fix their fishing nets. Overall in 2019, PII handled 45 purse seine net repairs, more than double the 18 that it performed the previous year.

Tuna caught in RMI EEZ

The number of foreign fishing vessels licensed to fish in the EEZ of the Marshall Islands was nearly identical in 2019 to 2018, 229 and 231, respectively. This included purse seine, longline and pole-and-line vessels. The Marshall Islands often sees year-to-year variations in vessel licenses largely to do with the location of tuna throughout the PNA region and weather conditions such as El Niño.

From 2015 through 2019, license numbers ranged from 225 to 257. Most of the fleets maintained stable numbers of licensed vessels in 2018 and 2019. The number of licensed longline vessels for China dropped from 30 in 2017 to 26 in 2018 and to 22 in 2019. The number of US-flagged purse seiners declined from 31 to 24, while the Philippines fleet dropped by three, to 10.

Tonnage figures by type of vessel

Fish are brought ashore from a MIFV longline vessel.

Meanwhile, purse seine vessels in the FSM Arrangement (fishing vessels that are domestically licensed in PNA member countries and received discounted prices for fishing access) increased by six, to 55. Aside from the FSM Arrangement vessels, Japan, S. Korea, Taiwan and the US were the other major players in purse seine licenses.

The estimated catch by the purse seine fleet operating in Marshall Islands waters decreased substantially in 2019. The purse seine catch went from 28,903mt in 2018 to an estimated 5,292mt in 2019. Longline catch tonnage continued a three-year upward trend, with an estimated 4,216mt caught during the year, up from 3,838mt the previous year. Pole-in-line vessels, exclusive from Japan, caught an estimated 1,024mt in the Marshall Islands EEZ. The purse seine catch accounted for slightly over half of the total catch of 10,532mt in the Marshall Islands EEZ in 2019.

Catch tonnage for the three types of fishing vessels operating in Marshall Islands waters in 2019:

• **Purse seine catches** in the Marshall Islands EEZ hit a five-year high of 78,767mt in 2016 before dropping to 26,519mt and 28,903mt the following two years. In 2019 it further declined to 5,292mt. These fluctuations from year-to-year generally reflect environmental conditions affecting location of skipjack tuna schools. Higher catches are generally recorded during or immediately following strong El Niño periods. The high catch tonnage in 2016, for example, was preceded by an El Niño event in 2015.

> The breakdown of the purse seine catch shows that Marshall Islands-flagged vessels caught the largest share of the tonnage, totaling 1,662mt.'

The breakdown of the purse seine catch shows that Marshall Islands-flagged vessels caught the largest share of the tonnage, totalling 1,662mt. Taiwan-flagged vessels were next with 1,327mt. S. Korea (475mt), US (451mt), PNG (395mt), China (331mt), FSM Arrangement (239mt), Kiribati (215mt) and Nauru (196mt) accounted for most of the balance of the catch. Skipjack tuna accounted for 91 percent of the purse seine catch.

• **Pole-and-line fishing** by Japan continued in 2019 at almost exactly the same level of tonnage as the previous year. These vessels caught 1,024mt in 2019 and 1,018mt in 2018. These represented a rebound from the limited catch of 72mt in 2017. Skipjack tuna accounted for nearly 100 percent of the pole-and-line catch, 1,022mt, with 2mt of yellowfin rounding out the total.

• **Longline vessel catches** showed a five-year high in 2019. A total of 4,216mt was caught, surpassing the previous year's total of 3,838mt as well as the 4,147mt figure in 2015. Over 60 percent (2,589mt) of the 2019 tonnage total was caught by locally-based Marshall Islands-chartered longline vessels associated with the Marshall Islands Fishing Venture processing and export operation in Majuro. FSM vessels caught 1,470mt, and Japan, China and Taiwan caught from 40mt to 73mt. Skipjack was the largest portion of the longline catch, at 1,974mt, followed by yellowfin tuna, 1,699mt.

Albacore accounted for 134mt and "other" species accounted for the balance of 410mt.

In the purse seine fishery, most fishing in Marshall Islands waters is in the southern portion of the EEZ.

Longline fishing also occurs in the southern areas of the EEZ, but is more widely distributed throughout Marshall Islands waters.

The Marshall Islands visit to the Nambawan Seafood Limited cold storage in Lae, Papua New Guinea.

Improving export processes

The Marshall Islands does not at this stage have a Competent Authority (CA) in order to enable exports to the European Union (EU). This limits the opportunity to enjoy tax-free access to the world's largest seafood market available to other African, Caribbean and Pacific (ACP) countries.

Interest in establishing a CA for the Marshall Islands dates to 2011. The recruitment of a CA advisor in August 2019 kick-started the process, launching the first groundwork necessary to establishing a CA in the Marshall Islands.

Having a competent authority will assist the Marshall Islands expand its export base, provide spin off activities, facilitate employment and exports to EU and other countries that require fish meeting eligibility, food safety criteria and health standards.

Exporting to the EU, however, is not an obligation. It requires an equal amount of effort by the government and the private sector if they have interest in accessing the EU market.

The Marshall Islands visit to the Majestic Seafoods Ltd. processing plant in Lae, PNG.

While the focus may be on the EU market during the CA development period, establishment of a CA is also an opportunity for the Marshall Islands and MIMRA to improve its export certification processes to align with already excellent legislation on fisheries management, conservation and management measures, monitoring, control and surveillance, and provisions for companies engaged in commercial fishery operations and exports.

The Marshall Islands is one of the largest transshipment ports in the world, moving over 600,000 tons of tuna to canneries around the world in 2018 and 2019, averaging over 37 transshipments per month both years. In light of the important role the Marshall Islands is already playing in the global tuna economy, it is imperative that efforts are made to improve the export and certification systems and processes. Development of the Competent Authority is a key element of improving the process and enabling exports to take advantage of this existing opportunity with the EU market.

Update of the CA progress in 2019

During 2019, MIMRA made important progress in the initial phase of developing the requirements necessary for establishing of a Competent Authority. Among fundamental documents prepared and activities undertaken were:

• **Drafting of a National Control Plan.** This is in line with the EU requirements for the organization of a Competent Authority and the necessary plans and procedures for the CA to operate. These include inspections and certification protocol, tools, listing of establishments and enforcement action to take when operators do not comply with standards.

• **Development of Industry Standards.** These are the requirements equivalent to EU and international standards related to processing and export of tuna that industry are required to implement and the guide for CA to use in regulating industry. These standards are to be auditable by the CA to ensure effective compliance.

• **Development of Fish Processing and Export Regulation 2020.** These regulations are pursuant to the Marshall Islands Marine Resource Act, 1997, under Title 51 of the Marshall Island Revised Code. These new regulations will underpin the system for fish processing and exports.

• **Familiarization trips** were undertaken to Kiribati and Papua New Guinea in late 2019 to see established CAs in operation. The purpose of the visits was to learn about CA operations and introduce the Marshall Islands CA officer to the process and systems of the Competent Authority. These visits included tours of processing factories, landing sites and fishing vessels for a practical, hands-on view of CA operations and tuna processing operations in these two countries.

'The purpose of the visits was to learn about CA operations and introduce the Marshall Islands CA officer to the process and systems of the Competent Authority.'

Part of preparation for establishing a Competent Authority in the Marshall Islands included a visit to the Kiribati Seafood Verification Agency in Tarawa in October 2019. MIMRA staff visited the Kiribati Seafood Agency, the Kiribati Fish Factory and landing site for tuna tonnage.

More trainees and better monitoring systems

Trainees in the MIMRA observer program held in conjunction with CMI.

MIMRA's team of fisheries observer carried out 174 trips in 2019 on both purse seiner and longline vessels. The numbers are similar to 2018, when fisheries observers made 179 trips on fishing vessels.

Their presence on purse seine fishing vessels implements the Parties to the Nauru Agreement's (PNA's) 100 percent observer requirement for the purse seine fishery in exclusive economic zones of PNA members.

Most of the trips by fisheries observers in 2019 were on purse seiners (141). But the MIMRA observers also went on 33 longline vessels as part of MIMRA's ongoing effort to ensure that a percentage of longline vessels receive independent observation coverage during the year. MIMRA has yet to place observers on board Japan's pole and line vessels, so observer coverage for validation purposes has not been achieved in this fishery.

During the year, one training was held by MIMRA in conjunction with the College of the Marshall Islands Maritime Vocational Training Center and the Pacific Community (SPC). Eight new fisheries observers were certified through this training. There were 54 active fisheries observers in 2019 — 52 men and two women. This is up three from 2018. Retention continues to be a challenge for MIMRA with between five and 15 fisheries observers leaving the program for one reason or another each year.

MIMRA's observer program continued to improve staff capacity through trainings in 2019 — both by adding newly trained and certified fisheries observers to the team, and also by continuing education for observer program staff members.

MIMRA's observer program is managed by five senior staff responsible for observer compliance, data quality and data entry, observer debriefing, and longline port sampling. The program has six Pacific Islands Regional Fisheries Observer (PIFRO) certified observer debriefers and eight PIFRO debriefer trainees. One MIMRA staff observer trainer trainee has completed four attachments and a training workshop at USP for a Training and Assessment Certificate IV. He is awaiting assessment to be certified as an observer trainer.

In addition to observers going on 174 fishing vessels during the year, when in port, they carry out port monitoring duties on transshipments taking place in Majuro port. Coverage on transshipments was almost 100 percent during the year.

Data management and handling capacity continues to be a vital tool for MIMRA. The SPC's Oceanic Fisheries Program has been instrumental in helping to develop data efforts by MIMRA.

MIMRA continues to employ a dedicated port sampler covering almost 100 percent of the unloading of longline vessels at the Marshall Islands Fishing Venture fish base. The port sampler along with other staff collate the data and enter into the TUFMAN II database.

In 2019 SPC introduced Onshore, an electronic port sampling app that improves data flow and eliminates the use of paper sampling forms. The trialing of Onshore showed great potential and continuing work to further improve the app should be finished in 2019.

Above, observer trainees work on the academic side of the program. Right, the team learns new fire fighting skills.

MIMRA continues to shift its data collection and management focus toward the PNA Fisheries Information Management System (FIMS) as the standard by which it will handle its data complemented by existing databases such as the TUFMAN II currently in use. As MIMRA expanded use of the FIMS Observer App during 2019, some issues developed that required updates to the app and additional training for its effective use.

Further development of e-reporting and electronic monitoring initiatives was a priority for MIMRA in 2019. In 2018, six longline vessels were equipped with electronic monitoring cameras as part of a trial of the technology. Use of the cameras continued in 2019. A total of 16 trips were observed electronically by nine observers trained in electronic monitoring during 2019. This was a decrease from the 24 longline trips observed through electronic monitoring in 2018 largely due to participating vessels moving into neighboring countries to fish.

In a related development for MIMRA fisheries observers, after ordering a set of two-way transmission devices for observers in 2019, MIMRA had to replace the devices with a different brand after technical issues surfaced with the originally purchased equipment.

A series of actions related to fisheries observer safety were advanced during 2019. These included:

- **Development of standard operating procedures**, including contracts and insurance for observers. Progress was made on the latter when insurance was included in agreements with the vessel companies.
- **Purchase and provision of sea safety gear** with the support, including 60 life jackets and 60 personal life beacons (both funded by FFA and World Bank PROP). A total of 25 of the personal life beacons were registered with the US Coast Guard (with assistance from Ministry of Transportation and Communication).
- **Introduction of an Observer Safety Emergency Action Plan.** The plan was continuing to be updated during the year and when compete, will be provided for review and approval of MIMRA's Legal Advisor, Director, Deputy Director Oceanic, and Oceanic Division Chief. The plan is to establish the Emergency Action Plan with National Police Sea Patrol, Marshall Islands Red Cross Society, US Coast Guard and emergency parties from other FFA member islands. The goal is for emergency action plan teams to be on call to respond 24/7.

Provisional purse seine transshipments in Majuro port in 2019

Flag	Number of PS Transshipment	SKJ	YFT	BET	TOTAL
China	15	7,422	1,141	169	8,732
CH-Taipei	141	98,072	10,140	1,362	109,574
FSM	58	44,664	3,920	343	48,927
Kiribati	2	1,809	56	5	1,870
Korea	7	5,280	427	246	5,953
RMI	83	62,896	4,199	406	67,501
Nauru	32	25,982	1,428	48	27,457
New Zealand	1	942	10	0	952
PNG	32	24,725	2,896	52	27,673
Philippines	8	5,194	605	4	5,803
Solomon Islands	10	7,709	910	37	8,656
Tuvalu	1	940	10	0	950
USA	54	40,603	3,167	426	44,196
Vanuatu	5	3,596	590	25	4,211
TOTAL	449	329,833	29,499	3,123	362,455

Note: The numbers listed under different tuna species are metric tons.

Key:
SKJ: Skipjack;
YFT: Yellowfin;
BET: Bigeye.




Number of foreign longline, pole-and-line and purse seine vessels licensed to fish in RMI EEZ by year and flag from 2015 to 2019.

FLAG	GEAR	2015	2016	2017	2018	2019
CHINA	LL	26	27	30	0	22
	PS	7	0	6	8	9
FSM	LL	14	12	13	9	9
FSMA	PS	54	76	76	49	55
JAPAN	LL	8	2	6	6	9
	PL	13	11	16	11	15
	PS	29	30	25	25	26
KIRIBATI	PS	0	0	0	5	0
KOREA	PS	5	25	26	24	25
NZ	PS	2	0	0	0	0
PHILIPPINES	PS	0	0	0	13	10
CH-TAIPEI	LL	2	0	0	0	1
	PS	25	26	27	23	24
TUVALU	PS	1	0	1	1	0
USA	PS	39	33	31	31	24
TOTAL	LL	50	41	49	15	41
	PL	13	11	16	11	15
	PS	162	190	192	179	173

Observer trips by flag and gear 2019

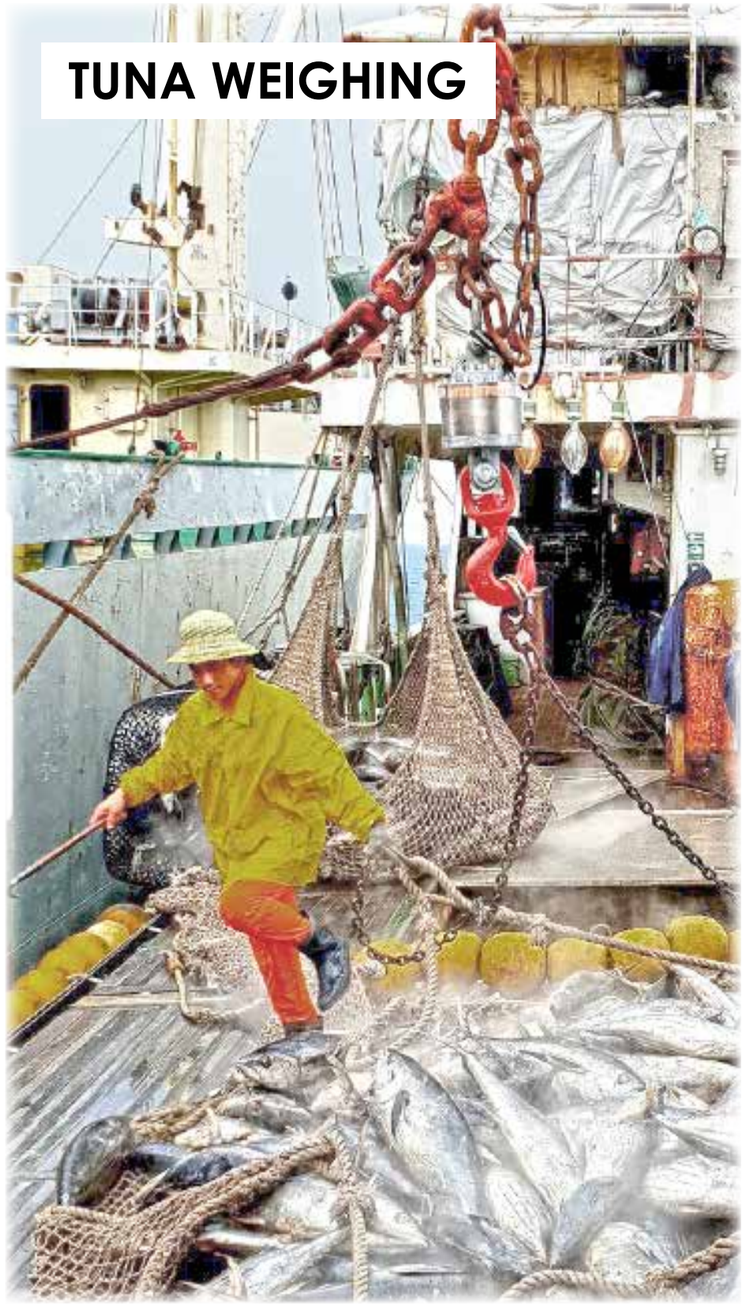
Flag	Purse Seine Number of trips	Longline
China	0	24
FSM	66	7
Kiribati	3	0
Korea	6	0
Nauru	7	0
PNG	13	0
Solomon Is.	5	0
Tuvalu	2	0
Taiwan	23	2
USA	16	0
Total	**141**	**33**

MIMRA pins down the precise count on tonnage

Despite the millions of pounds of tuna transshipped through Majuro and other Pacific island ports, nobody has a precise count of the tonnage. The entire system for both industry and island fisheries managers revolves around estimates of the tonnage — a deficiency that MIMRA and its regional fisheries management partners set about attempting to remedy in 2019.

Knowing how much fish a purse seiner really caught is not an easy task, not for industry or for the authorities. Traditional scales don't work on board, and getting fish into low temperatures as soon as possible is fundamental for food safety and quality, especially when a purse seiner is hauling in a big set of 100 tons or more from the water. As a result, tuna boat captains and fisheries observers work on estimates. It is only when the tuna is unloaded for weigh in at a processing plant, or sometimes before containerization, that MIMRA will learn the precise, verified weights. But this is often many months after the tuna is caught and even then, the catch tonnage data may never actually be seen by the island fisheries managers.

This ongoing situation has negative implications for stock assessments as well as financial implications for the fishing crew. Gaining accurate weights is good for everyone since weights are fundamental and benefit a wide range of fisheries decision making, including:



A crew member maintains control of the frozen tuna net.

Francisco Blaha, MIMRA's Offshore Fisheries Advisor, helps work the net with a backdrop of countless bags of much-needed salt.

Region to benefit from fish weighing techniques

Crew and skipper who are paid partly based on the volume of fish caught; vessel managers who deal with profitability and insurance issues; carrier vessels that deliver the tuna to canneries; and scientists and regulators who generate stock assessments and advice about allowable catch and effort levels. Simply put, the more accurate the data, the better the decision making.

During 2019, MIMRA's Oceanic Division worked together with Francisco Blaha, MIMRA's Offshore Fisheries Advisor supported by the New Zealand Ministry of Foreign Affairs and Trade, to develop a system to record accurate weight at the transshipment point in Majuro. This involved significant support from the Forum Fisheries Agency (FFA) and Pacific Community (SPC).

Since the mid-2010s, Majuro has been the busiest tuna transshipment port in the world, with over 400 purse seiners annually transshipping about 300,000 tons of tuna. The process of transferring between 800 and 1,700 metric tons of fish from purse seiner to carrier vessel can take up to a week and involves putting the frozen fish in nets and hoisting them into the carrier from the deck of the purse seiner.

MIMRA science and boarding officers saw transshipment operations as an excellent opportunity to verify the weights caught by purse seiners by weighing each of the nets with frozen fish as they are transshipped using hanging scales attached to the hooks of the cranes used during the operation.

Late in 2019, MIMRA started what is believed to be a world-first research program to determine the best system for weighing fish coming off a purse seiner to a carrier vessel. A team composed of FFA, SPC and MIMRA launched the testing of four different types of remotely operated electronic crane scales during the transshipment of a Marshall Islands flagged tuna vessel. They evaluated each model against attributes such as precision, robustness and ease of use, battery performance, recyclability, and price and connectivity.

The results will benefit not only the Marshall Islands but the whole region as there is transshipment activity in Kiribati, Federated States of Micronesia, Tuvalu, Papua New Guinea and Solomon Islands. The work is expected to continue in 2020 with the aim of standardizing the use of crane scales for monitoring the weights of all tuna transshipped in the region.

MIMRA Oceanic staff Melvin Silk and Beau Bigler, center and right, with FFA's Ferral Lasie. Below, some of the electronic scales being tested in the MIMRA tuna weighing program.

Oceanic highlights for MIMRA in 2019

OCEANIC

Vessels tonnage

A total of 449 transshipments took place in Majuro, the highest number since 2016, which set the all-time record for transshipments at 551. The transshipments saw 362,454 metric tons (mt) of tuna moving through Majuro from purse seiner to carrier vessel and onward to processing facilities internationally. 2019 produced the highest-ever tonnage average per transshipment of 807mt.

VDS success

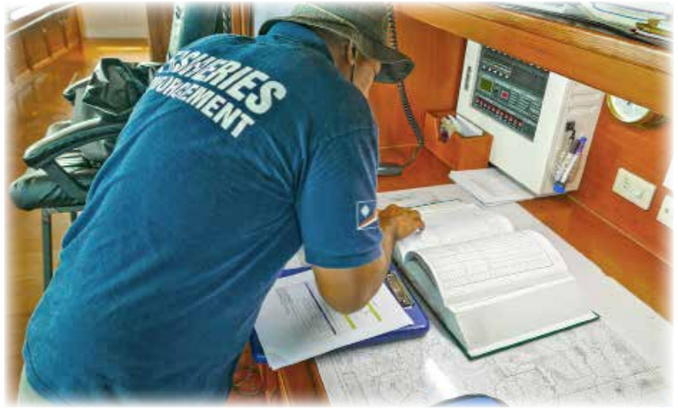
Revenue generated by the Vessel Day Scheme (VDS) and fishing rights topped $30 million for the first time, totaling $30,458,253 compared to $29,144,696 the previous year. Revenue from the VDS and fishing rights has risen nearly 30-fold since 2010, when it was $1.1 million.

Joint venture $

The Marshall Islands Fishing Company joint venture with Koo's Fishing Company, which operates F/V Marshalls 201, generated $304,654 in 2019. This is about double the figure in 2018.

Vessel licenses

A total of 229 vessels were licensed to fish in the Marshall Islands waters in 2019, down by two from 231 in 2018. As in previous years, not all vessels actually fished in Marshall Islands EEZ during the year.



Tuna transshipment Majuro 2014-19

Year	Number	Metric Tons	*Average
2014	382	158,065	414
2015	504	368,323	731
2016	551	403,809	733
2017	424	292,754	690
2018	403	307,164	762
2019	449	362,454	807

*Average metric tonnage per transshipment. Source: MIMRA.

MIMRA's Beau Bigler works on the numbers on board a purse seiner in Majuro lagoon.

Financial reward

MIMRA transferred $29,141,128 to the national government to support the nation's needs in 2019, about the same level of contribution as the previous year, $29,455,326.

National fleet

In 2019 there were 11 Marshall Islands-flagged purse seine vessels operating throughout the Western and Central Pacific Ocean. The total estimated catch was 95,531mt. Skipjack tuna accounted for 88 percent of the catch, with yellowfin 11 percent and bigeye one percent. The 2019 tonnage is an increase from the 71,963mt and 64,527mt tons caught in 2018 and 2017, respectively. In addition, 22 chartered longline vessels associated with the Marshall Islands Fishing Venture had retained catches estimated at 2,890mt.

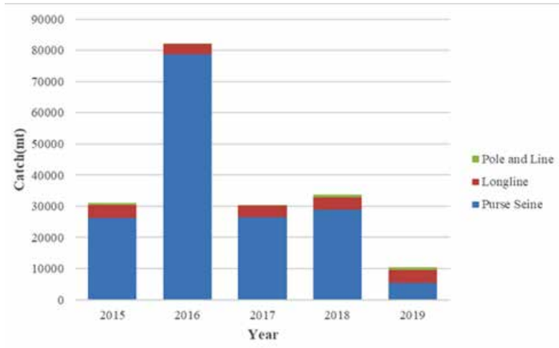
Observer action

Fifty-four MIMRA fisheries observers carried out 141 trips on purse seiners and 33 on longline vessels for a total of 174 trips monitoring tuna fishing in the region. This compares to the 179 observer trips in 2018 (145/34).

Above left, happy purse seiner crew work with a fraction of the tons of tuna they deal with on a daily basis.

Above right, MIMRA's Melvin Silk and FFA's Ferral Lasie watch a purse seine transshipment in operation.

Total catch by different fishing gear-types operating in the RMI EEZ from 2015-2019



PII vessel service

Pacific International Inc. continued to develop its shore-side facilities in support of the fishing industry.

The PII Net Yard serviced 45 purse seiners in 2019 and PII handled six purse seiner transshipments, moving 2,242 tons in 90 freezer containers.

Bycatch interactions

Preliminary data for 2019 showed two sea turtle interactions reported with both released alive. A total of 104 individual marine mammals were involved in 31 interactions: 56 of which were released alive, 47 dead, and one with an unknown condition. There were 27 interactions with whale sharks, with 20 released alive, six dead and one in an unknown condition. No seabird interactions were observed during the period.

RMI EEZ tonnage

Japan's pole and line fleet caught an estimated of 1,024mt in 2019, nearly identical to the 1,018mt reeled in during 2018. Purse seine catch in 2019 was 5,292mt. Longline catch was a five-year high of 4,216mt.

LEGAL

The 16th Annual WCPFC meeting, which was held from December 5 to 11, 2019, in Port Moresby, PNG.

Staying up to date with

OCEANIC FISHERIES

For the Oceanic and Industrial Affairs Division, the Legal Division reviews national fisheries laws in relation to regional and sub-regional measures that are binding on the Marshall Islands as a member of the Western and Central Pacific Fisheries Commission, Pacific Islands Forum Fisheries Agency, Secretariat of the Pacific Community, Parties to the Nauru Agreement and the United Nations Convention on the Law of the Sea. In addition to this obligation, the Legal Division assists MIMRA in legal representation in court for prosecution against fishing vessels or companies alleged to have violated national laws and regulations of the Marshall Islands related to Illegal, Unreported and Unregulated fishing, contravention of conditions of fishing license, obstruction of fisheries observers, misreporting, and other infractions. For the past four years, most cases have been settled out of court by way of summary proceedings, which are allowed for under the Fisheries Enforcement Act.

In-house training is also provided for compliance and enforcement officers

MIMRA Director Glen Joseph, right, with Legal Advisor Laurence E. Edwards, II, second from right.

Laurence E. Edwards, II

THE LEGAL TEAM: The MIMRA legal division was staffed in 2019 by two attorneys: Legal Counsel Laurence E. Edwards, II, and Coastal Fisheries Legal Officer Jasmine Henry. On a daily basis, the Legal Division provides advice to the Board and Management of MIMRA regarding fisheries legal issues at the national, sub-regional, regional and international levels. The Legal Division provides legal services to both Coastal and Oceanic Divisions.

Jasmine Henry

global agency rules

within MIMRA by the Legal Division on an 'as needed' basis for capacity building and understanding of the laws of the Republic.

The Legal Division also handles legal drafting of bills, resolutions, regulations, bilateral access agreements, and local government ordinances for the purposes of safeguarding marine resources in the Marshall Islands.

The Legal Division also engages in negotiations with MIMRA management for the sale of fishing days to bilateral fishing partners and domestic partners for access to the Marshall Islands exclusive economic zone.

Bilateral and domestic fishing partners have different fishing day access arrangements, with Marshall Islands-flagged fishing vessels having preferential treatment in line with the FSM Arrangement for domestic purse seine fishing vessels in the PNA region. Before commencement of fishing in the Marshall Islands EEZ, it is mandatory for fishing vessels to gain an access agreement with MIMRA prior to January 1 of each new year.

License conditions are outlined in an access agreement required under the Fishing Access and Licensing Act.

All other legal matters are dealt with by the Legal Division for upholding the rule of law and conserving the nation's marine resources for the benefit of current and future generations.

LEGAL

16TH TUNA COMMISSION TALKS

The 16th Annual Western and Central Pacific Fisheries Commission in December 2019 led to a number of accomplishments, the most important of which was establishment of a series of small working groups (SWG) to progress development of a variety of measures, work plans and guidelines to improve management of high seas fisheries.

The Commission agreed to progress work on specific issues by establishing the following small working groups (SWG): (i) Coopering Non-Members (CNM) SWG, led by Nauru; (ii) SWG to finalize the Compliance Monitoring Reports (CMR), led by the Technical Compliance Committee (TCC) Chair (Marshall Islands); (iii) SWG to consider the E-Monitoring Concept Paper, led by ER and EM Working Group Chair (Australia); (iv) Review of Transshipment CMM Intersessional Working Group (IWG) terms of reference, led by IWG Co-Chairs (Marshall Islands and USA); (v) Draft Conservation Management Measure (CMM) for Sharks, led by the Shark IWG Chair (Japan); (vi) Considering enhancements to the CMM on the Compliance Monitoring Scheme (CMS) in accordance with the future work in Section IX of CMM 2018-07, led by the TCC Vice Chair (Canada); (vii) SWG on the list of obligations to be assessed by the CMS in 2020, led by the WCPFC Vice-Chair (Niue); (viii) Harvest Strategy Work plan SWG, led by Australia; and (ix) SWG to develop a terms of reference for a workshop on high seas purse seine effort limits and bigeye and longline limit allocation, led by Papua New Guinea.

In addition, WCPFC16 elected officers: In support of 2020 Intersessional Working Group (IWG) activities, to be progressed electronically and as appropriate through face-to-face meetings, the Commission confirmed the following IWG lineup: a) Mr. Tom Graham (USA) would continue to lead the TCC Observer-related IWG; b) Mr. Craig Strong (Fiji) would continue to lead the South Pacific Albacore Roadmap IWG; c) Ms. Kerry Smith (Australia) would continue to lead the ER and EM IWG; d) Mr. Sam Lanwi (Marshall Islands) and Mr. Alex Kahl (United States) would continue to co-chair the Transshipment Review IWG; e) Mr. Terry Boone (USA) and Mr. Vivian Fernandez (Australia) would co-chair the Vessel Monitoring Scheme (VMS) SWG; f) Mr. Bradley Philip (FSM) would continue to lead the FAD Management Options IWG; and g) Dr. Robert Day (Canada) would lead the Compliance Monitoring Scheme IWG.

Sea cucumbers are one of various coastal marine resources that MIMRA is protecting and regulating.

COASTAL FISHERIES

Developing the policies

Coastal Fisheries Law is still a new landscape, especially for the Marshall Islands. As a consequence, much of the work that the Legal Division of MIMRA performs focuses on drafting the legislation and reviewing policies so that the framework for the Coastal Division is clear in terms of law, enforcement, monitoring, and ensuring compliance of individuals and businesses that interact with the coastal waters of the Marshall Islands.

Current coastal legislation focuses on regulating the licensing process; regulation and conservation of certain species that are used for commercial purposes; and regulation of the import and export process for sea cucumbers and aquarium fish. Legislation that was in the process of being updated or developed in 2019 included: Protected Areas Network Regulations, Tuna Game Fish Conservation Zone (Amendment) Act, Tuna Game Fish Conservation Zone Regulations; Fish Harvest Regulations, and finalization of Aquaculture Regulations.

It is expected that by the end of 2020, these draft regulations and draft amendments to Title 51 of the Marshall Islands Revised Code will undergo final review by the Board, with subsequent approval for promulgation by the Board not following long after.

2019 HIGHLIGHTS LEGAL

Coastal Fisheries Legal Advisor Jasmine Henry, front row, fifth from right, participated in a Maritime Boundary Workshop in Australia in 2019.

• **SPC Legal Attachment:** The new coastal legal officer participated in an attachment with the Aquaculture Advisor to draft Aquaculture Regulations with SPC technical experts in September 2019.

The team was able to produce a working draft that was finalized and shared with stakeholders in a consultation held in October 2019.

• **19th Maritime Boundaries Working Session:** In December 2019, the coastal legal officer represented the Marshall Islands in the working session that took place in Sydney, Australia. During this working session, the legal officer worked with GIS experts and Law of the Sea experts to determine the minor steps that needed to be taken by the Marshall Islands and the rest of the Pacific to secure all of the boundaries in the Pacific.

Marshall Islands was able to confirm that the only work needed to complete the boundary project was a few diplomatic procedures with Nauru.

• **PNA Fish Aggregating Device (FAD) Implementing Arrangement Legal Consultation Program:** The Parties to the Nauru Agreement Office (PNAO) hosted a two-day workshop with PNA legal practitioners to review the draft text of the Implementing Arrangement, the legal status of FADs among PNA member jurisdictions, and way forward to finalize the PNA FAD IA regulations. MIMRA legal counsel attended the workshop on behalf of the Marshall Islands.

Zero tolerance for violations

ENFORCEMENT

MIMRA continued active enforcement of fisheries laws and regulations. This has resulted in court filings against a number of fishing vessels and settlements leading to a record level of fines totalling $3,350,000 for the past several years. There is zero tolerance for fishing vessels that violate fisheries provisions in national laws. MIMRA, with the support of the Marshall Islands Police Department/Sea Patrol and the Attorney General's office, actively monitored commercial tuna fishing operations in Marshall Islands waters. In 2019, five cases were investigated for alleged violations of a range of fisheries regulations. There was insufficient evidence to pursue a violation proceeding against one of the five alleged infringements. However, one fishing vessel/company paid a fine for obstructing a fisheries observer in the performance of his duties, which resulted in payment of a fine of $100,000 during 2019.

Net operating revenue hits record of $34.6m in 2019

MIMRA's Finance Division maintained a high standard of accountability in managing the fisheries department's revenues and expenditures in fiscal year 2019. As in past years, MIMRA maintained its financial accounts in good standing and was audit-ready after the close of the fiscal year, completing its FY2019 audit in a timely manner.

This was confirmed by Deloitte auditors who conducted the annual review of MIMRA's finances. "In our opinion, the financial statements… present fairly, in all material respects, the financial position of MIMRA as of September 30, 2019 and 2018…in accordance with accounting principles generally accepted in the United States of America," said the Deloitte audit for FY2019. The audit also confirmed that there were no unresolved or outstanding audit findings from the previous year.

As revenues have increased in recent years, MIMRA has ensured its commitment to financial accountability and proper management of its accounts. This is an essential aspect of work that enables the agency to successfully carry out its increasingly broad mandate for managing fisheries in the Marshall Islands and at the regional level.

Net operating revenue increased two percent to rise to an all-time record level, from $33,938,061 in 2018 to $34,597,266 in 2019. Overall, for the past three years, net revenues have been stable in the $33.9 million to $34.6 million range. For the first time in MIMRA's history, net revenues bumped above $34 million in 2017 and 2019 brought the second year of this strong revenue generation. MIMRA's continuing strong revenue picture is based largely on the success of participation by the Marshall Islands in the Parties to the Nauru Agreement (PNA) Vessel Day Scheme that governs purse seine fishing in PNA waters. In 2019, $30.5 million was generated by the VDS and fishing rights, with the VDS accounting for $28.1 million, another record. VDS revenue increased by $2.3 million in 2019 as a consequence of strong demand for fishing days as well as the Marshall Islands ability to earn significantly more than the $8,000 per day benchmark fee for fishing days, including creating higher-value days by "pooling" with other PNA members to create multi-zone access fishing days sought after by the fishing industry.

Fishing rights revenue declined in 2019 to $2,314,357, from $3,302,312 in 2018. This resulted from a decline in revenue from FSM Arrangement vessels, the United States treaty with all Forum Fisheries Agency nations, including Marshall Islands, and Japan.

The Marshall Islands investment with Koo's Fishing Company in the Marshall Islands Fishing Company's joint venture purse seiner generated $304,654.

Revenue from licensing and registration of different fishing vessel types increased in 2019 to $2,573,000 compared to $2,320,700. The increase was due to more transshipment carrier vessels being licensed, from 59 in 2018 to 70 in 2019, and purse seine vessels increasing from 127 in 2018 to 130 boats in 2019. Longline licenses also increased by four during the year. Overall, the number of fishing vessels registered in 2019 increased by 20 over 2018, to 283.

Transshipment fees rose by 12 percent to $538,000 based on another strong showing of Port Majuro's use as a major tuna transshipment venue. After two years with fisheries observer fees above $800,000, revenue declined to $766,760 in 2019 reflecting fewer observer trips. Fines levied by MIMRA generated $200,000, which was lower than $550,000 in fines collected the previous year. A boat charter agreement ended in 2019, so it had no revenue in this area that had produced $700,000 he previous year.

Because the World Bank and The Nature Conservancy provided grants for projects and interest and other revenues amounted to $1,286,445, this "non-operating" revenue boosted MIMRA's total revenue for the year to $35,883,711. This is the second highest revenue figure ever, after 2017.

The strength of MIMRA's revenue in 2019 made it possible to contribute $29,141,128 to the national government annual operating budget. Fisheries revenue amounted to over 10 percent of the nation's annual budget in 2019.

On the expenditure side, spending increased 21 percent in 2019 to $4,882,750 compared to $4,030,989 the previous year. This reflected increased costs largely for salaries, training activities, rent, maintenance, professional fees, and other areas. Travel costs, however, declined by over $30,000 in 2019.

Crews work on off-loading tuna in Port Majuro, while government and MIMRA officials monitor the transshipments, which saw a 12 percent rise in fees in 2019.

RMI Vessel Day Scheme Revenue FY2013-2019

Fiscal Year	Revenue
2013	$7,746,478
2014	$12,171,596
2015	$15,228,935
2016	$23,991,991
2017	$25,389,600
2018	$25,842,384
2019	$28,143,896

Source: MIMRA audited financial reports.

FINANCE

MIMRA: Management's Financial Condition and Operations for fiscal years 2019, 2018 and 2017

This table summarizes the financial condition and operations of MIMRA for fiscal years 2019, 2018 and 2017. This appeared in the FY2019 audit by Deloitte.

Statements of Net Position

	2019	2018	(%) Change	2017
ASSETS:				
Current and other assets	$27,103,373	$ 25,963,219	4%	$25,170,217
Capital assets	4,201,373	3,842,778	9%	1,965,793
Investment in JV	5,222,356	4,917,702	6%	6,209,153
Total Assets	$36,526,911	$ 34,723,699	5%	$33,345,163
LIABILITIES:				
Current liabilities	$ 846,420	$ 903,041	(6%)	$ 909,837
NET POSITION:				
Investment in capital assets	4,201,373	3,842,778	9%	1,965,793
Restricted	430,995	742,780	(41%)	692,160
Unrestricted	31,048,123	29,235,100	6%	29,777,373
Total Net Position	35,680,491	33,820,658	5%	32,435,326
	$36,526,911	$ 34,723,699	5%	$33,345,163

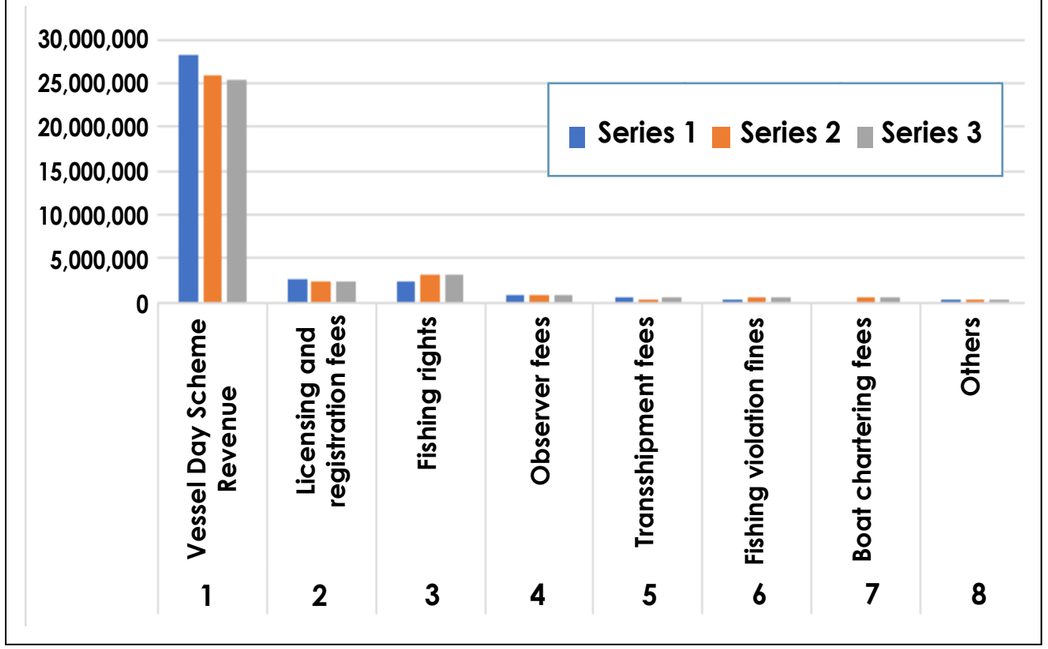
Statements of Revenue, Expenses and Changes in Net Position

	2019	2018	(%) Change	2017
REVENUES:				
Operating Revenues	$ 34,597,266	$33,938,061	1%	$34,057,424
Capital Revenues	-	153,875	(100%)	-
Non-Operating Revenues	1,286,445	779,393	65%	2,047,217
Total Revenue	35,883,711	34,871,329	3%	36,104,641
EXPENSES:				
Operating Expenses	4,882,750	4,030,989	21%	4,759,761
Non-operating expenses	29,141,128	29,455,008	(1%)	40,138,929
Total Expenses	34,023,878	33,485,997	2%	44,898,690
Changes in net position	1,859,833	1,385,332	34%	(8,794,049)
Net position at beginning of year	33,820,658	32,435,326	4%	41,229.375
Net position at end of year	$35,680,491	33,820,658	5%	$32,435,326

FINANCE

MIMRA: Management's Discussion and Analysis for fiscal years 2019, 2018 and 2017

Comparative Revenue: FY19 vs FY18 vs FY17



		2019	2018	2017
1	Vessel Day Scheme Revenue	$28,143,896	$25,842,384	$25,389,600
2	Licensing & registration fees	$2,573,000	$2,320,700	$2,498,662
3	Fishing rights	$2,314,357	$3,302,312	$3,143,085
4	Observers fees	$766,760	$826,797	$825,987
5	Transshipment fees	$538,000	$475,500	$596,000
6	Fishing violation fines	$200,000	$550,000	$715,000
7	Boat chartering fee	$0	$700,000	$700,000
8	Others	$73,253	$176,904	$196,430
	TOTAL REVENUES	**$34,609,266**	**$34,194,597**	**$34,064,894**
	Bad debt expense	(12,000)	(256,536)	(7,470)
	Net Revenues	$34,597,266	$33,938,061	$34,057,424
	Overall Change FY2019 vs FY2018	**($659,205)**	**0.02%**	

The resource and mapping surveys of the northern atolls of Bikar and Bokak in late 2019 were a first for MIMRA.

Survey a 'milestone'

The milestone achievement of completing resource and mapping surveys at the uninhabited atolls of Bikar and Bokak atolls in the northern Marshall Islands in late 2019 demonstrated MIMRA's ability to undertake valuable study work that will continue in other atolls. Ten years ago, MIMRA did not have this capacity. But with Coastal Division capacity development and networking with key partners, MIMRA demonstrated it is now able to conduct this essential research work to document baseline information about island habitats, which differ, often significantly, from island to island.

The three-week survey trip to Bikar and Bokak, both uninhabited and among the most isolated atolls in the Marshall Islands, was unprecedented for the Coastal Division in terms of the volume and quality of data collected and the coordination with and participation of partner organizations that added essential experience and technical expertise to the survey mission. Of great significance, the survey mission linked together and implemented the objectives of local (Reimaanlok Process), national (Government's National Strategic Plan, National Ocean Policy, PAN Act, the National Environmental Protection Act, and others), regional (Micronesia Challenge, and partnerships with PNA, FFA, SPC and WCPFC), and international (UN Convention on the Law of the Sea, UN Framework Convention on Climate Change, International Convention for the Prevention of Pollution from Ships/MARPOL, UN Sustainable Development Goals, and others) good governance frameworks for sustainable ocean management practices.

In addition to MIMRA Coastal staff, participating in the survey were representatives from the Pacific Community (SPC), University of Guam, The Nature Conservancy and Speiz laboratory in Switzerland. The diversity of expertise on the team made it possible to:

- Assess the coral reef resources and status of populations by completing a marine baseline survey on benthic habitats, finfish, and invertebrate resources.
- Investigate ciguatera and the level of toxicity by collecting seaweed samples for analysis in Majuro.
- Investigate radiation contamination through seawater and sediment sampling
- Assess the terrestrial environments, available resources, level of biodiversity as well as ecosystem health and vitality
- Use a sensor drone and collect topographic records in order to better understanding the shape and structures of the islands

The goal for follow up to the survey mission is to provide information about the resources in Bikar and Bokak using all the scientific data obtained for the resource owners to make informed decisions for establishing resource management and protecting the atolls under the Protected Areas Network Act.

www.mimra.com