CONTRIBUTION 10.1

National Report on the Status of Fisheries and Aquaculture in ANGUILLA

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1. FISHERIES SUB-SECTORS AT A GLANCE

Anguilla is the most northerly of the Leeward Islands, geographically positioned at 18.22° N, 63.07° W. The island land mass measures 35 square miles, 16 miles long and 3 miles wide and has a geological make up of predominantly coral and limestone. The highest elevation on the island rises to 213ft, while the rest of the island and its surrounding cays remain relatively flat. The main economic driver on the island is tourism, but fishing as a small industry also generates direct revenue for ~ 400 of the 14,000 residents of Anguilla and contributes roughly 1.2% towards the GDP. Anguilla's exclusive fishing zone (EEZ) is 85,500km^{2,} and 2,000km^2 is submerged shelf. This submerged shelf supports the islands' fishery, and provides an abundance of shellfish products landed locally. The EEZ goes 200nm north into the Atlantic; with this abundance of fishing area, the local fishers only exploit up 35-40 miles.

The fishing industry of Anguilla is still very much un-developed, in the sense that there is no large-scale or commercial fishing industries and the technology, boats and equipment used are mundane. The 2022 record of licensed fishers shows that there are ~96 commercial vessels and ~240 fishers operating in Anguilla's fishery. Besides one large trawler (16m), most of the fishers operate from locally constructed 5-15m, outboard-powered open hull vessels. The fishing methods employed include: purse seines, line fishing, Antillean or Z fish and lobster traps, speargun, longlines, trolling rods and FADs rods, to capture target species such as jacks, hinds, butter fish, doctor fish, parrot fish, shark etc. The latter methods are used to capture important commercial species such as snappers, tunas, wahoo, mahi mahi, lobster and crayfish. The Queen Conch (*Strombus gigas*) is also an important commercial species, which is harvested by skin diving or SCUBA.

2. PRODUCTION

The Department of Natural Resources Fisheries and Marine Resources (DNR-FMRU) collects fisheries data through two primary mechanisms:

i. Fish Catch Data Collection (FCDC)

Fish catch and effort data are collected from six (6) main landing sites (Island Harbour, Road Bay and Cove Bay, Blowing Point, Crocus Bay, and Forest Bay) on a rotational basis daily, during the evening time when most landings are expected. FCDC is the main source of the data, however, this has been a challenge for the DNR considering that there are limited resources and the inability to be at different landing sites at the same time. Very little data were collected in 2021 and 2022 owing to fishers' reluctance to comply during the interview process. Data collection were further impeded by other ongoing external funded short term projects.

CITATION: Johnson, R., 2026. National Report on the Status of Fisheries and Aquaculture in Anguilla. Contribution 10.1, p1-10 *IN CRFM*, 2026. Volume II: National Reports on the Status of Fisheries and Aquaculture. Presented at the CRFM 20th Anniversary Scientific Conference, 28-31 August 2023. CRFM Special Publication No. 37, CRFM Secretariat https://www.crfm.int/index.php?option=com_k2&view=item&id=955

Catch estimates for 2021-2022 were made based on fisheries officers' observations and interviews with key fishers from each landing site. Sufficient data were obtained to calculate only the total landings (Table 1 & Figure 1) and the value of those landings (Table 1).

ii. Lobster Inspections

The DNR strongly encourages fisherfolk selling Caribbean Spiny Lobster, to inspect their catch to ensure that all landed lobsters are of legal size. Once the catch has been approved, fisherfolk are awarded with a Certificate of Inspection that is presented to their buyers. These inspection forms continue to be a great source of fisheries data and serve as a way of ensuring fishers are complying with fisheries regulations. Recently there has been a noticeable decrease in the number of people requesting lobster inspections. This decrease indicates that some markets are no longer ensuring that the fishers are in compliance fish fisheries regulations and have a certificate of inspection.

Table 1. Estimated total landings, price, and gross value for the major species groups in 2022

Species	Landing (pounds)	Average price per pound (XCD	Gross Value (XCD)
Lobsters	161,196.00	$ 26.88	$ 4,333,270.87
Crayfish	41,995.80	$ 34.95	$ 1,467,610.42
Conchs	47,000.00	$ 17.78	$ 835,660.00
Reef fish	675,954.00	$ 13.30	$ 8,990,188.20
Snappers	114,839.42	$ 22.85	$ 2,624,046.39
Other small coastal pelagics	-		$ -
S. pelagics(Round Scad)	-		$ -
L. Pelagics (tuna, wahoo, dolphinfish)	139,960.55	$ 21.51	$ 3,009,935.56

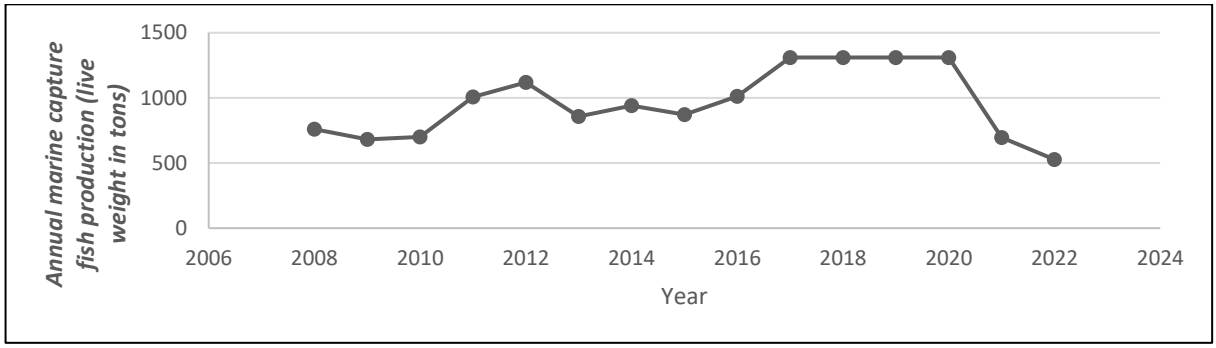

Figure 1. Anguilla annual marine capture fish production (live weight in tons) for the period (2008– 2022)

The tourism season directly influences the effort and marketing of marine fisheries, especially that of lobsters, snappers, queen conch and pelagic fish. It runs from November- August, with peak months being December, January, February, and March. During these peak months, fish catch increases as well as the income (*figure 2)* with the catch consisting almost completely of lobster, which also brought in the most income.

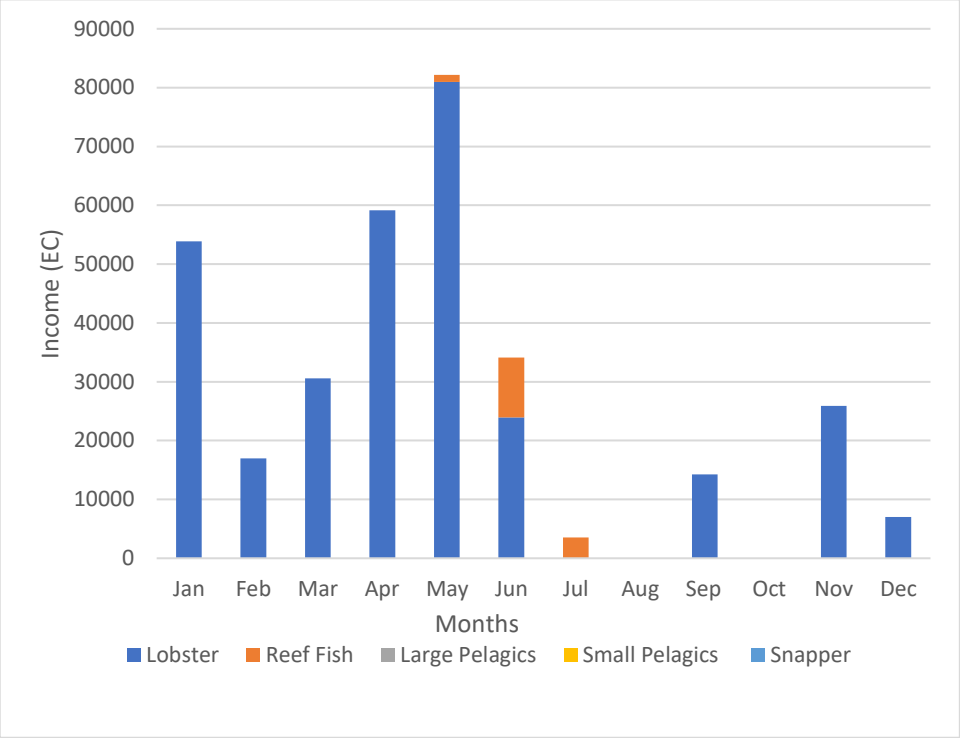

Figure 2. Total Monthly income (EC) of catch in 2021: depicting relative percentage of species caught each month

3. AQUACULTURE

Currently, there are no Government owned and operated aquaculture or aquaponic operations in Anguilla. In 2023, Anguilla was granted € 292,692.00 through the EU supported, Resilience, Sustainable Energy and Marine Biodiversity Programme (RESEMBID) for a project titled 'Piloting backyard recirculating aquaponics systems in Anguilla.' This one-year pilot project aims to establish five (5) small-scale recirculating aquaculture systems to cultivate tilapia and vegetables. These systems will demonstrate the how aquaculture could be used to sustainably bolster Anguilla's food security and economic development. Overall, this project aims to increase our national capacity in the field of aquaculture production and encourages Anguillans to establish their own small-scale aquaculture systems.

Prior to this project, there was only one privately owned aquaponics business, 'Anguilla jammin,' established in Anguilla. This operation was unfortunately destroyed during the passage of hurricane Irma in 2017.

4. EXPORTS

St. Martin/St. Maarten is Anguilla's main export market. St. Martin stopped importing fish products from Anguilla in 2021 because Anguilla is a British Overseas Territory and could not meet their hygiene

standards. Also, Anguilla fishers were not paying taxes and fees to enter their markets. The loss of access to this traditional and lucrative market has forced some of our fishers to revert to selling their catch in Anguilla and some have left the fishery to seek alternative livelihoods.

5. MANAGEMENT MEASURES

The general national fisheries management objective is to ensure the sustainable utilization of the fishery resources for the maximum economic and recreational benefit of the people living in Anguilla. In doing so, measures are taken to ensure that the lobster fishery, in particular, does not become industrialized and that it is open only to residents of Anguilla. The large pelagic fishery is under review, within the proposed legislative amendments as a fishery with potential for foreign, commercial fishing, special partnerships. Currently, only sport fishing (catch and release) boats operating out of St. Maarten/St. Martin are licensed to operate in the large pelagic fishery.

Other conservation measures include the prohibition of:

- The use of gillnets;
- The taking of sea turtles;
- The use of fish traps with a wire mesh size of less than 1.5 inches;
- The taking of lobsters with a carapace length of less than 95 mm or egg-bearing and moulting lobsters;
- The taking of conch with a shell length of less than 18 cm;
- The use of explosives, lime, bleach, or any other noxious substances when fishing; and
- The taking of marine products using SCUBA or spear gun unless the person is a resident of Anguilla.

6. INSTITUTIONAL AND LEGAL FRAMEWORK

The existing legislation, which guides the local fisheries and marine operations, are the Fisheries Protection Act of 1986, the Fisheries Protection Ordinance of 1988, the Marine Parks Act 2000, and most recently the Convention on the International Trade in Endangered Species Act 2010. Regarding roles and responsibilities, the lead agency responsible for marine capture fisheries management is the Department of Natural Resources-Fisheries and Marine resources Unit (FMRU). This responsibility is shared with the Attorney General's Chambers and Judicial Office. The Marine Branch of the Royal Anguilla Police Force also assumes responsibilities as an enforcement authority for marine fisheries related issues. There are no local/community managed areas for any of the fisheries.

The current legislation does not provide specific guidance on management tools and approaches, nor a formal process and fixed timeframe for implementation. Furthermore, except for Sea Turtles, Queen Conch (S. gigas), Caribbean Spiny Lobster (P. argus), and Caribbean Spotted Lobster (P. guttatus), no management measures and regulations for individual fisheries are specified. The legislation does not stipulate that management decisions be based on information derived from: biological analyses, stock assessments, economic analyses, social impact analyses, ecosystem analyses/assessments, monitoring, or enforcement activities.

Enforcement and prosecution activities, whether involving local or foreign fishing activities are currently handled by the Magistrate Court System. Specific provisions for illegal fishing by foreign vessels include seizures and fines. According to legislation, if FMRU has reasonable grounds to believe that an offence under the Fisheries Protection Act or any regulations has been committed, FMRU Officers have the right to enter and search, any vehicle or any premises, other than premises used exclusively as a dwelling house, and seize anything appearing to be connected to an offence. FMRU Officers also have the right to

seize any vessel, vehicle or any other property. However, one of the difficulties and weaknesses with enforcement is that FMRU Officers do not have powers of arrest, nor is there any on-the-spot fining system. Furthermore, the Fisheries Unit does not have a marine vessel or vehicle.

Specific legislation for some fishing methods/tools exists at the national level and has been put in place under the Fisheries Protection Ordinance of 1986 and the Fisheries Protection Regulations of 1988. Such legislation serves to provide both a legal and administrative framework for the management of marine captured fisheries in Anguilla and is focused primarily on the national system. However, the legislation does not provide a definition of the term 'fisheries management', nor does it list objectives for the management of marine captured fisheries. It does not grant the fisheries management authority the legal power to meet the priorities and obligations of international agreements/conventions, regional agreements, or other multi-lateral arrangements. This situation may be related to Anguilla's status as a British Overseas Territory and the lack of political will to amend the legislation.

Legislative amendments that were proposed by FMRU in 2016, to the Fisheries Protection Act and the Marine Parks Act, were approved by the Executive Council and were slated to go to the House of Assembly in May and June 2017. The Government of Anguilla and the people of Anguilla have recognized the need for stricter rules and regulations to conserve our fragile marine environment. The implementation of some of these new laws will also mean that obligations to various binding and nonbinding treaties and agreements, to which Anguilla is signatory, have been fulfilled. Unfortunately, by the end of 2017, the proposed amendments were still not taken to the Anguilla House of Assembly.

FMRU suggested changes to the Fisheries Protection Act and the Marine Parks Act in 2016. The Executive Council approved them, and they were set to go to the House of Assembly in May and June 2017. At present, none of the proposed amendments have been brought to the House of Assembly. In 2023, the FMRU reviewed and presented these amendments to the Executive Council. FMRU intends to conduct a series of public consultations on these proposed amendments in September 2023. We are hoping that the reviewed amendments will be passed by the end of 2024.

7. RESEARCH, EDUCATION, AND TRAINING

7.1 Research

In 2007, FMRU (formerly the Department of Fisheries and Marine Resources) began the Anguilla Marine Monitoring Programme (AMMP) as a pilot study. This is still the only research programme that assesses near-shore fish populations, the health of seagrass, and coral reefs around the island. Presently, there are fifteen monitoring sites (five seagrass beds and ten coral reef sites). The monitoring protocols are based on the Atlantic and Gulf Rapid Reef Assessment methodologies. Data collected included, but are not limited to, percentage cover of seagrass, algae and hard coral and fish density. The latest report shows that Anguilla's reefs are being dominated by algal overgrowth and the invasive midrib seagrass (Halophila *baillonis*) which is now the main type grass on the seagrass beds. In 2023 the FMRU began to incorporate the use of camera systems and underwater drones to further develop our capacity to monitor changes in the marine environment.

In addition to the AMMP surveys, FMRU has also assessed the distribution of Stoney Coral Tissue Loss Disease (SCTLD) in Anguilla. FMRU has also completed a population assessment of Diadema in March 2023, following the recent mass mortality of the specie.

FMRU has been monitoring the erosion and accreditation rates of Anguilla's beaches since 1992. In 2022, a beach monitoring report was produced by the FMRU for the 2014-2022 period. The report showed that

at least four of our beaches are severely eroded but concluded that there needs to be further research to determine the actual causes of this dynamic. Overall, the report has been a tremendously useful tool to support our decision on coastal development plans. There is ongoing effort to use funds from the United Kingdom's Blue Belt Program, to purchase materials (aerial drones, GPS units, laptops, mapping software etc.) that would enable the department to modernize the data collection and analysis of such datasets.

7.2 Education

In 2019, the Government of Anguilla invested in the tertiary education of two students, one in Ocean Conservation and another in Marine Biology. Both students have completed their degree programs and are currently employed at the FMRU. The recruitment of these staff members has thus far greatly improve the technical capacity of the FMRU. One of the FMRU staff has also participated in the fisheries assessment and data modelling training that was held in Barbados on 21-27 June 2023. In addition to this, the team has also received training in the realm of rearing sea urchin in aquarium and the treatment and management of stoney coral tissue loss disease (SCTLD).

7.3 Outreach

There is one Outreach Officer at the FMRU, however, all staff members assist with outreach activities when needed. Outreach activities for 2023 included a turtle interaction day. On this day, FMRU staff collaborated with fishers from the Island Harbour community to conduct a Sea turtle tagging activity. The public and schools were invited to the interactive session. Outreach sessions were also conducted in the secondary schools, the House of Assembly, and other local venues to speak about the recent spread of SCTLD and the regional Diadema mass mortality event. The team also worked with the Department of Education to develop a marine-related coloring book for students between the ages 3-11 years old.

A two-day workshop was held in June 2023, which was geared towards improving the relationship between fisherfolk and fisheries management agencies. In addition to these workshops, the team has met with fisherfolk to discuss issues related to IUU and Anguilla's intentions to join the Marine Stewardship Council (MSC) certification scheme. Low fisherfolk attendance at these important workshops and meetings remains a significant barrier to the FMRU's goal of involving fisherfolk in all aspects of fisheries management. The FMRU is increasing its outreach campaigns by using social media and traditional platforms.

8. KEY DEVELOPMENT TRENDS OVER THE LAST 20 YEARS

8.1 Changes in the Fleet

There has been minimal change in fishing communities and the methods they employ to fish over the past 20 years. FMRU has observed that over the past seven (7 years) most vessels now have housing that protects at least two persons from the elements and provides secure storage for catches. Additionally, the majority of fishers are now utilizing GPS units and many also utilize cell phones to monitor weather conditions. Most of the older fishers (above 60) have now exited the fishery and men between the ages of 18-55 now dominate the fishery. While they still fish for the lobster, we noticed that the younger fishers are showing much interest in targeting pelagic stocks. Furthermore, it seems they are also more open to adopting the use of new fishing techniques and technology. Unfortunately, we only noticed this youth recruitment at Island Harbour and Road Bay.

8.2 COVID recovery

Fisher folk and the industry were hit hard from the onset of the CoVid-19 pandemic. Anguilla's borders were closed on the 20th of March 2020, preventing visits from tourist and Anguillans living overseas. This forced many restaurants and hotels to shut down, drastically reducing the demand for fish, as well as increasing local unemployment. During the pandemic, Anguilla temporarily mandated that all fishing vessels be fitted with a vessel monitoring system (VMS). This enabled Anguilla to secure its borders and allowed our fishers to continue fishing during a period of restricted social mobility. The successful trial of this system has demonstrated to the FMRU that VMS with geofencing capabilities can aid in combatting IUU and search and rescue operations. The FMRU has proposed that the government of Anguilla mandates the instalment of VMS for the entire fishing fleet.

8.3 Fisheries Management

The Department of Natural Resources (DNR) now has the sole responsibility for fisheries research and serves as an advisory body to the Government of Anguilla. The DNR is the result of a merger that occurred back in June 2020, comprising 3 previous departments: Department of Agriculture (DoA), Department of Fisheries and Marine Resources (DFMR) and the Department of Environment (DoE). This merger is currently under review, and a pending decision on the future of this merger is expected to significantly affect how the Government of Anguilla manages its fisheries and marine resources.

FMRU and the Royal Anguilla Police Force (RAPF) lost their vessels during the passage of hurricane Irma. Prior to this, the agencies were able to independently monitor marine activity and enforce fisheries and marine legislation. The loss of these vessels has left the FMRU unable to enforce fisheries legislation and heavily reliant on the use of private vessels to conduct research. Fortunately, the FMRU received funding from the Government of Anguilla (GOA) and RESIMBID to build a 37' patrol vessel. This is just one of the examples that demonstrates that the Government of Anguilla is becoming more supportive, particularly in the realm of financing of the FMRU and the strengthening the legislative frameworks that underpin fisheries management.

Catch and effort data collection still relies on the staff visiting the landing sites, interviewing fishers, and noting those data on a paper form. FMRU has observed that between 2008 and 2016 the department exerted much effort towards the collection of fish catch and effort data. This effort has waned over the past five years owing to the department's lack of resources and its dedication to other projects. Fishers are increasingly unwilling to share catch and effort data, which hinders our ability to make data-driven decisions. Efforts are being made to amend the current legislation to make it mandatory for fishers to share catch data. Furthermore, efforts are being made to utilize newly acquired tablets (2) to collect catch and effort data electronically.

All collected datasets are currently being processed using Microsoft excel, which FMRU recognizes to be a functional yet limited piece of software. To address this limitation, the FMRU is slowly incorporating the use of complex and robust statistical (RStudio) and mapping software (QGIS).

8.4 Co-management arrangements

Established in 2014, the Anguilla Fisherfolk Association (AFA) is a non-profit organization. Their goal is to improve the fishing industry on the island, support fisherfolk in developing their skills, and advocate for their welfare. There is also a Fisherfolk cooperation that was established around the same period. Both

bodies have struggled to recruit and retain active membership and, as a result. The organizations presently have little impact and input on how fisheries are managed in Anguilla.
Aside from the inputs of the AFA, FMRU has also connected with marine stakeholders through 15 meetings sessions over the past year. While FMRU always seeks to involve marine stakeholders in all our management decisions, FMRU has found that fishers are reluctant to attend meetings even when incentives are provided. When fishers do participate in meetings and trainings, they mostly involve themselves when the topics being discussed have a direct impact on their livelihoods.

The FMRU has collaborated with the Anguilla National Trust and marine stakeholders like fishers and dive operators to create management plans for Anguilla's marine parks and boost their strength. The committee has developed management plans for two of the MPAs thus far. This is yet another area where fisherfolk have absented themselves from conversations on the development of MPAs, despite the fact that their livelihoods are directly affected.

9. SPECIAL PROJECTS AIMED AT ADVANCING THE SECTOR AND TRANSITIONING TOWARDS A BLUE ECONOMY

- *'Piloting backyard recirculating aquaponics systems in Anguilla.'* Funded by the EU supported, Resilience, Sustainable Energy and Marine Biodiversity Programme (RESEMBID) € 292,692.00. This project is a one-year project that started in 2023 and led by the Department of Natural Resources. This project aims to increase Anguilla's capacity to produce fish and vegetables using small-scale aquaculture systems.

- *Improving marine biodiversity through the promotion of sustainable fisheries and implementation of coastal ecosystems rehabilitation measures:* This OECS funded project aims to review and assess Anguilla's fisheries management plan, enhance the technical capacity of the FMRU staff, and to communicate the status of the project to the public.

- *BRUVS project:* A partnership between FMRU and Blue Abacus. The project aims to use Baited Underwater Video Systems (BRUVS) to assess the status of our fisheries and their ecosystems. FMRU intends to have the fisherfolk determine the species and habitat that we research during this project.

- *Darwin Anguilla Shark Conservation project*. This project is a collaboration between the Marine Conservation Society, ANT and the FMRU. The project aims to utilize BRUVS platform to collect data on Anguilla's shark population that will be used to later inform future conservation measures.

- *Sea urchin restoration project*. This project was funded by SPAW-RAC in 2022 €8,000. The project aimed to assess and restore the Diadema population that was affected by the recent mass mortality event. The project began in August 2022 and ended in March 2023. Owing to limited funding , we were unable to achieve one of the major objective of this project, which was for the FMRU to establish a small- scale aquarium where we could rear/ rehabilitate infected urchins.

- *MSC certification of Anguilla's fisheries*. This project was funded by The Fishmongers Company. The project aims to complete a pre-assessment of Anguilla fisheries against the Marine Stewardship Council standards. This project is expected to grow Anguilla's fish export potential and encourage fishers to shift their fishing efforts towards the offshore areas. The project ends in 2023

- *Blue Belt work program:* Anguilla formally joined the Blue Belt Program in 2023. Joining the program is recognized as a key step towards addressing major marine related issues and developing our overall capacity to grow Anguilla's blue economy. The Blue Belt program is currently funding an ambitious two-year project, which seeks to assess and improve Anguilla's marine legislation, spatial planning, fisheries management, and coastal monitoring capacity. This project is expected to be completed by 2024

- *Coral reef monitoring and Stoney Coral Tissue loss Disease management project*: This three-year project (2020-2023) was funded by the Conflict Stability Security Fund through the Joint Nature Conservation Committee (JNCC) £59,355. Project funds were used to finance coral reef assessments, treatment of SCTLD, sea urchin population assessment, purchasing of mooring equipment, and public awareness campaigns.

- *Transforming Anguilla's Marine Parks:* Funded by RESEMBID. This ANT led project aims to strengthen Anguilla's ability to effectively manage its MPAs. A patrol vessel is currently being financed through this project.

- *Transforming Anguilla's Marine Parks:* This DARWIN funded project (£328,144) is led by the ANT. It aims to strengthen Anguilla's ability to effectively manage its MPAs. One of the main outcome of this project is to develop stakeholder led MPA management plans for all of Anguilla's MPAs.

10. OPPORTUNITIES AND PLANS FOR FUTURE GROWTH

To utilize the exclusive fishing zone and stimulate sustainable economic growth and reduce environmental vulnerability, through opening up the fishery and establishing fisheries partnership agreements and granting licenses

- Develop a commercial fishing sector locally
- Provide markets and processing and storage facilities
- Training local fishers to use modern equipment
- With prospects of improving the fishing industry hopefully funds can be secured to increase the level of research being conducted at the department
- Establish a rotational system of closed marine parks
- Successfully mark the boundaries of all marine parks
- Conduct research to realize the true benefits and functionality of marine parks
- Strengthen the institutional capacity of FMRU
- Collect data from key local and regional fish vendors (e.g. Species, unit price, name of fisher,)
- Attain Marine stewardship Council certification for at least one of our major fisheries
- Amend the Fisheries Act and the Marine Parks Act to strengthen FMRU's ability to address current and future fisheries and marine resources issues.
- Updating the fisheries development plan
- Removal of illegal fish aggregating devices

11. CHALLENGES

- Outdated and ineffective legislation
- Lack of enforcement capacity, resources, and staff
- General lack of understanding & appreciation of the resources by stakeholders
- Lack of involvement of fishers in decision making
- Slow recognition of Fisheries as a priority area
- Execution of the fisheries development plan
- Policies to support sector development
- No management plan on individual fisheries
- Lack of strong fisherfolk association(s)

12. PROS

- Interest in Government to update the legislation
- Interest in Government to develop the offshore fishery for export purposes
- Small fisheries, easy to manage
- Many young fishers whom have a greater understanding of ecological processes & exposure to positive media content