Research Section Newsletter

Quarter 3

Greetings all!

The Fisheries Research Section of the Seychelles Fishing Authority (SFA) is responsible for developing and implementing various applied research projects, with the aim of improving our understanding on fisheries. We provide scientific advise to Resource Managers on the management and development of fisheries in Seychelles.

Through this newsletter we aim to promote the quarterly activities undertaken within the Section.

During Quarter 3, the focus was mostly on developing and testing various research protocols for upcoming research projects planned during Quarter 4.

Hope you enjoy this 3rd issue.

Happy reading!!!

Sea cucumber fishing season officially opened on 15th September 2020.

Pentard

Kokosye Blan

Sanpye

Figure 1: Commercially important sea cucumber (SFA 2018)

Sea Cucumber fishery goes digital!

The sea cucumber fishery adopts an electronic logbook system for data collection via a smartphone.

Our research scientists Dr. Ebrahim, Mrs. Gabriel and Ms. Hollanda have been working closely with the sea cucumber fishermen on the effective implementation of an e-logbook system. The system allows on-site data, such as, catch, dive times, fishing locations and water visibility to be collected quicker and more accurately. Once back into port, the data is easily offloaded onto a server where it can be processed to produce estimates of sea cucumber density by zones. This data will be used to assess changes in the abundance of harvested species over time, which will be useful information for the sustainable management of the fishery.

The research team will test the new system during the first trip of the sea cucumber season to determine its validity. If successful, it will replace the old paper logbook system!

Figure 3: eLogbook Training guides for sea cucumber fishers (Gabriel, K. 2020)

Figure 4: eLogbook manual training workshop

Have you heard about BRUV Research Project?

BRUV stands for "Baited Remote Underwater Video", a method commonly used to assess underwater fauna using camera recordings. This method has been adopted in our baseline study to investigate demersal fish assemblage on the Mahé plateau.

The research team has been busy developing the research protocols for the BRUV project which commences during the fourth quarter. Leading scientist Ms. Mangroo and the research technicians conducted several BRUV calibration exercises at the Roche Caiman swimming pool in preparation for the field activities.

Figure 5: BRUV - Retrieved from Johansson et al., (2008)

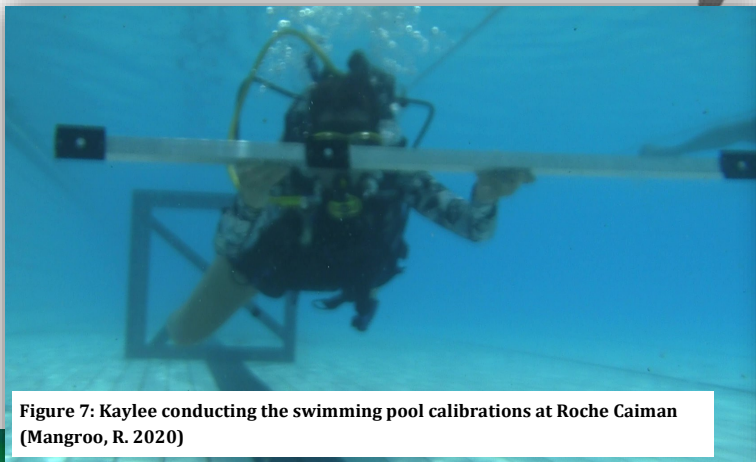**Figure 6: Testing the effectiveness of the BRUV (Mangroo, R. 2020)**

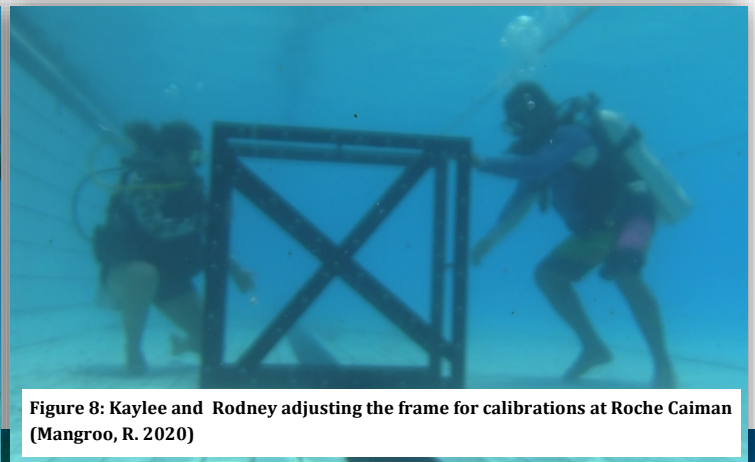**Figure 7: Kaylee conducting the swimming pool calibrations at Roche Caiman (Mangroo, R. 2020)**

Figure 8: Kaylee and Rodney adjusting the frame for calibrations at Roche Caiman (Mangroo, R. 2020)

Sea cucumber Stock Assessment Research

The Research Section procured a new Videoray pro 4 ultra base ROV in May 2020.

ROV stands for " Remotely Operated Vehicle" maneuverable underwater machine used to explore oceans depth whilst being operated by someone at the water surface. Similar to playing a video game!

In July 2020, Research technicians undertook trials to adjust the ROV buoyancy in tanks at the Aquacultures', Broodstock, Acclimation and Quarantine Facilities (BAQF) in Providence.

The ROV will be used to identify and count sea cucumbers at depths beyond scuba diving limits during the survey. The method will be trialed during the pilot research cruise planned during the forth quarter.
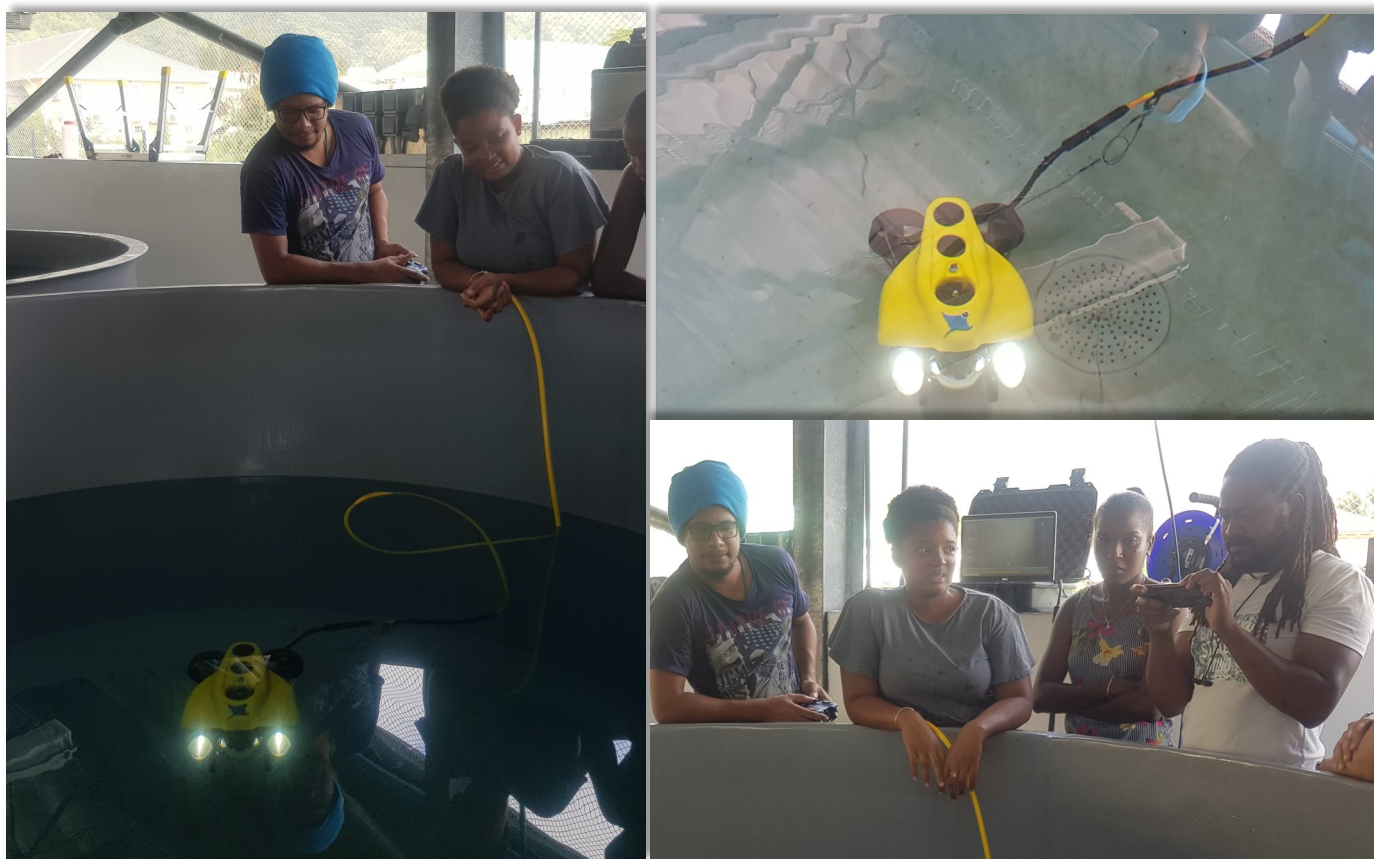

Figure 9: Research technicians, Stephanie and Achille along with the Aquaculture team testing the ROV (Hollanda, S. 2020)

Project Updates:

Demersal & Semi-Industrial Fish sampling

Length frequency sampling for demersal and semi-industrial fish species has been challenging, given the unknown landing location and time. However, the Research technicians ensures consistent data collection. A great number of semi-industrial species were sampled this quarter with a relatively high number of Swordfish (SWO) (Figure 10).

A total of 376 fish species were sampled which includes Swordfish (79), Yellowfin (209) and Big Eye tuna (88). The minimum size range was 30-35cm with the maximum size of 125-130 cm (see Figure 11).

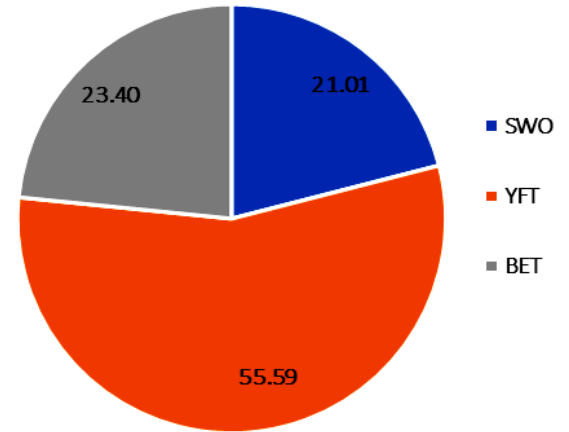Solely Bourgeois were sampled this quarter as demersal species with a total number of 59 fish.

Figure 10: Total percentage of semi-industrial species (Swordfish, Yellowfin & Bigeye tuna) sampled during July - September 2020.
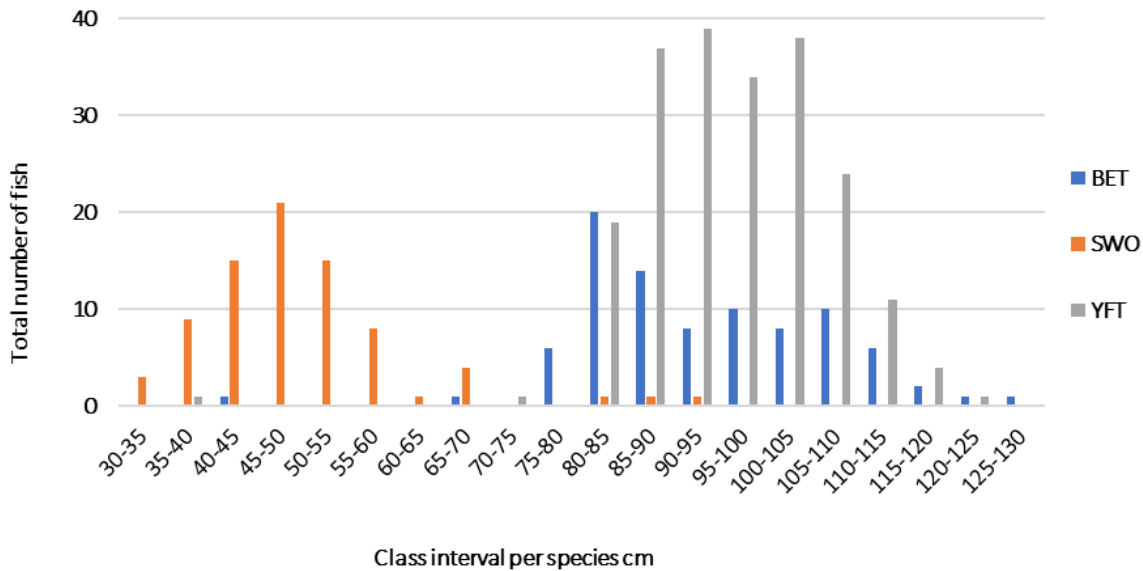

Figure 11: Total number of semi-industrial fish species (Swordfish, Yellowfin & Bigeye tuna) sampled per size class during July – September 2020

Tuna Biological Sampling

Data collection of total weight and length, organ weight, stomach content, and gonad maturity stages of the three major commercial tuna species continues at the Indian Ocean Tuna (I.O.T) factory.

A total of 739 tuna species were sampled which includes 94 Yellowfin (YFT), 620 Skip Jack (SKJ) and 25 Big Eye (BET). Greater volume of Skip jack were processed at the factory which influenced the sampling result (see figure 12).
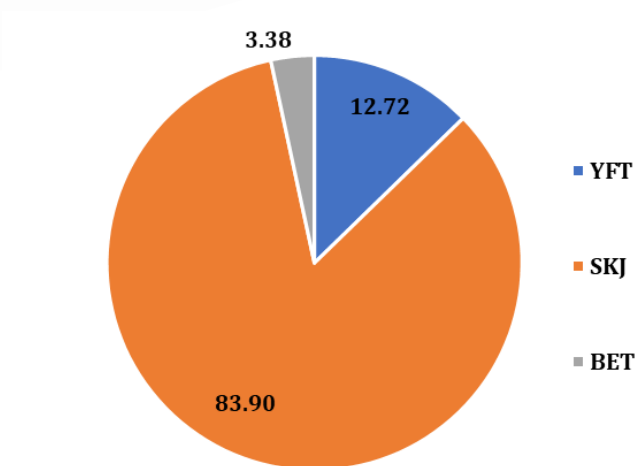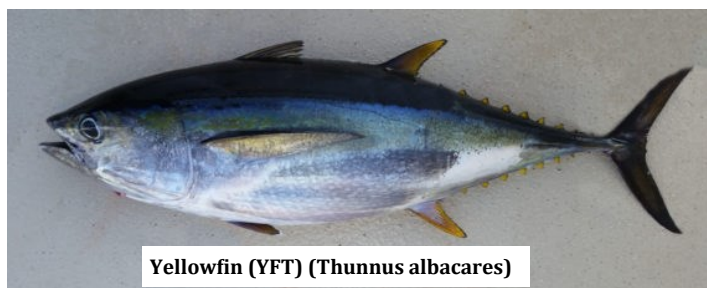
Patudo (BET) (Thunnus obesus)

Skipjack (SKJ) (Katsuwonuc pelamis)

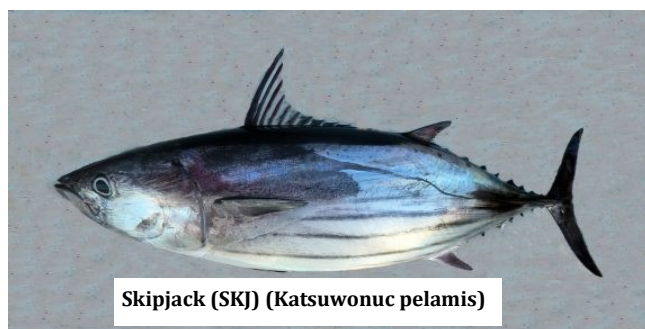Yellowfin (YFT) (Thunnus albacares)

3.38
12.72
83.90

- YFT
- SKJ
- BET

Figure 12: Total percentage of tuna species of Yellowfin (YFT), Skipjack (SKJ) and Bigeye (BET) sampled during April - June 2020.

Importance of transparency within the fisheries sector!

© Department of Blue Economy & Fisheries Transparency

Figure 13: Principal Scientist Ameer at the Transparency of Fisheries in Seychelles Initiative forum

Our Principal Fisheries Scientist, Dr. Ameer Ebrahim represented SFA during the Transparency of Fisheries in Seychelles Initiative forum.

The Forum was jointly organized by the Seychelles Department of the Blue Economy and the Fisheries Transparency Initiative (FiTI). It aimed to raise awareness on the importance of transparency within the fisheries sector and the sharing of information.

Transparency is not only a critical aspect in achieving sustainable fisheries, it is also a cornerstone of Seychelles' endeavors to transit to a sustainable ocean economy and a core principle of its "Blue Economy: Strategic Policy Framework and Roadmap".

Seychelles is currently conducting the Country's first assessment of publicly available information on its marine fisheries sector, which will be released as the 'FiTI Report' by the end of this year. The outcomes of this assessment will not only provide a robust status of the availability, accessibility and credibility of basic information, it will also be an ideal tool in institutionalizing and improving the dialogue and cooperation with all bona fide stakeholders.

An Interview with Ms. Kethsia Georges!

Meet Kethsia Georges, another devoted staff with 30 years of experience.

"I joined the Seychelles Fishing Authority (SFA) on the 1st August 1990 as a Research Administrative Assistant in the Research Section. Fisheries Research was new to me but I was keen to learn, as it was very interesting.
I conducted administrative work in the section and started with logistics for the research vessel. I really enjoyed my work because everything was new to me!

There were fishing equipments, engines and spare parts that I had to manage. I was also responsible to coordinate international conferences such as Western Indian Ocean Tuna Organization and Tuna Management Meeting and act as Liaison Officer.

In 2008, the Procurement Act was established and I had to implement new working strategies.
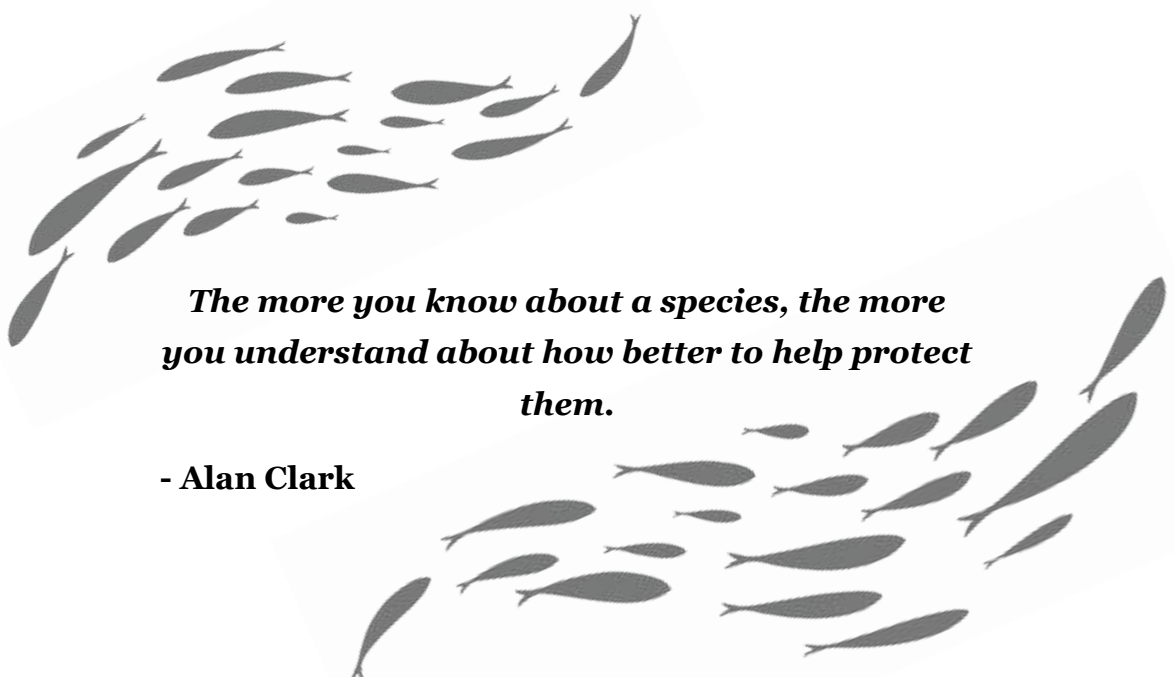
My greatest achievement was in July 2008 when I was nominated as Seychelles National Cruise Coordinator on behalf of Seychelles Fishing Authority (SFA). I represented Seychelles in the International Project of the Agulhas & Somali Current Large Ecosystems Project (ASCLME). During this time, I gained more experience and developed skills in administration.

I have encountered many challenges during this past 30 years, but my job has always been interesting and I enjoy it!"

Upcoming Research Projects

- **Participatory Lobster Monitoring Programme (PLMP)**

- **Sea Cucumber Stock Assessment Pilot survey**

- **BRUV Baseline study to investigate demersal fish assemblage on Mahé plateau**

- **Maintenance and downloading of temperature loggers**

The more you know about a species, the more you understand about how better to help protect them.

- Alan Clark