



JODARI

Newsletter



“Investment in the Tanzanian EEZ Enhanced”



DEEP SEA FISHING REGULATOR COMES OF AGE

Editorial Board

Chief Editor

Dr. Islam S. Salum

Assistant Chief Editor

Dr. Emmanuel A. Sweke

Editors

Amour M. Makame

Zuwena J. Hamad

Asha A. Khatib

Graphier

Khalid A. Mohamed

*The newsletter provided
by the Deep Sea Fishing
Authority (DSFA)
Fumba Zanzibar - Tanzania*

Address

P.O.Box 56

Zanzibar - Tanzania

Phone: +255 779888241

+255779888215

Email: info@dsfa.go.tz

Website: www.dsfa.go.tz

Director General's Message



Dr. Islam Seif Salum

Director General

Welcome our readers to the Second Issue of the Jodari biannual Newsletter aiming to address matters related to deep sea fishing Authority (DSFA). You will find the most updated information related to the management and development of deep sea fishery and promotion of the blue economy in the country.

The Management, and staff of DSFA joins all Tanzanians to congratulate HE. Dr. John Pombe Magufuli for being re-elected as the 5th President of the Government of the United Republic of Tanzania through a landslide victory at the general election held on 28th October and HE. Dr. Hussein Ali Mwinyi for being elected as the 8th President of Zanzibar and Chairman of the Revolutionary Council. DSFA will continue to work hand in hand with both governments in efforts to realize the development of blue economy of our nation.

We commend CCM manifesto and government plans to invest massively in construction of designated fishing ports with necessary infrastructure to support fishing, fish processing and tourism among others. Being both a coastal and lake region state, Tanzania directly depends on the ocean and its great lakes and rivers for regional and global maritime connectivity, trade, security, energy and minerals, fisheries and aquaculture,

tourism, social and economic growth. Therefore, we should put collective efforts and enhance engagement with communities, private sector, and development partners in exploring blue economy.

Zanzibar is surrounded by seas and endowed by richest marine resources yet so far, the island has hardly exploited these massive natural resources from ocean. Now is the time for the national's thinkers and planners to get up speed and capture the enormous opportunities the oceans and seas around us. Blue Economy is very promising area with high returns which Zanzibar and its people can benefit from untapped resources in the sea.

DSFA would like to take this great opportunity to welcome the new Ministry of Blue Economy and Fisheries Zanzibar. We believe that the new Ministry will foster implementation of the government plans and strategies on Blue Economy to promote marine tools such as establishing marine spatial plan, developing coastal fisheries and aquaculture, investing in Exclusive Economic Zone (EEZ) fishing, improving Monitoring Control and Surveillance (MCS), strengthening maritime services, exploring gas and oil, improving coastal and sport tourism to mention a few.

Again, the DSFA retaliates its commitment toward implementation of national blue economy policy and programs, fostering fisheries governance, mainstreaming climate change dimensions and environmental sustainability, building stronger workforce for transformative blue economy actions in the country.

A BRIGHT FUTURE AHEAD OF THE DEEP SEA FISHERIES SUB SECTOR



By Keis I. Abdalla

His Excellency Dr. John Pombe Joseph Magufuli, the president of the United Republic of Tanzania on 15th June 2020 signed the Deep Sea Fisheries Management and Development Act No. 5 of 2020. The Act legislated after being tabled and passed a bill in the Parliament to repeal the Deep Sea Fishing Authority Act No. 1 of 1998.

More specific the Deep Sea Fisheries Management and Development, 2020 puts measures for conservation, management and development of fishery resources in the Tanzania Exclusive Economic Zone (EEZ), provides a room for designation of zones for conservation of fishery resources, directs the establishment of fisheries management plan, conducting fishery research, protection of marine biodiversity and environmental quality. The global challenge in fishing subsector illegal, unreported and unregulated fishing “IUU” is addressed by placing

port state measures for port control among others to prevent landing of illegal catches in Tanzania and taking legal action against the respective fishing vessel.

On the other hand, the Act demonstrates “a genuine link” between Tanzania as a “flag state” and a “Tanzania fishing vessel” fishing or conduct fishing related activities in EEZ or area beyond national jurisdiction “ABJN” and simultaneously impose compliance obligations to the vessel owner including possession of authorization to fish “ATF” beyond EEZ.

The monitoring, control and surveillance “MCS” activities are strengthened by using Vessel Monitoring System “VMS” and Automatic Identification System “AIS” and a satellite-based system to monitor the entire EEZ and more specific licenced fishing vessels and Tanzania fishing vessels while operating in area beyond

national jurisdiction. There is also established information system register to keep records of such information, statistics, fisheries data including EEZ and coastal.

Above all, the Act extends incentives to the national investors and entities owned by Tanzania citizens to empower local fishing operators in EEZ fishing. Likewise, it introduces an alternate fisheries access, namely partnership between foreign and local in joint venture, chartering and bilateral agreement for realization of more benefits apart from the licence fees including technology and skills transfer, employment/training of Tanzania crews and development of local fishing processing industries to be fed by the EEZ’s landed catches. It is anticipated that the new Act will set a bright future in EEZ fishing in furtherance of “Blue Economy”.

TRAINING, MODERN FISHING GEAR BOOSTS CATCHES BY ARTISANAL FISHERS



Fishers at Wetë Pemba hauling Yellow fin tuna from a fishing boat ready for auctioning

By Dr. Islam S. Salum

Fishing operations in Exclusive Economic Zone (EEZ) involves industrial fishing vessels that are normally large (above 24 m long) and use modern fishing technologies to search and easily harvest the resources. Thus, it is difficult for small artisanal vessels to access because EEZ ranges from tens to hundreds of kilometers from the coast and the sea conditions are rough such a strong winds and huge waves. Artisanal fishing vessels in Tanzania mostly operate within the inshore waters of coastal areas of mainland Tanzania and Zanzibar.

Although the Deep Sea Fishing Authority's (DSFA) is mandated to manage and develop fisheries in the Tanzania EEZ, it supports artisanal fishers as its corporate

social responsibility (CSR) to the communities given that the tuna and tuna-like species are highly migratory and ecological impacts are likely to be far reaching.

During its operation, DSFA has formulated and implemented various strategies to support the small-scale fishers, including capacity building, identification of potential fishing zones (PFZs) and installation of fish aggregative devices (FADs). Forty six (46) seamen, 23 from Zanzibar and 23 from Mainland Tanzania were trained on fishing skills and some elibly secured jobs in local and foreign fishing vessels. In addition, 149 artisanal fishers (75 from Zanzibar and 74 from mainland Tanzania) were trained on productive fishing and use of modern gears. These programs

were jointly funded by DSFA and the World Bank through SWIOFish Project.

To boost productivity in the territorial water, DSFA supported installation of 72 FADs in the fishing grounds of Bagamoyo in Mainland Tanzania and Nungwi Channel in Zanzibar. FADs are permanent or temporary structures made of various materials and float to attract and aggregate fish that can be easily caught. Traditional FADs can be made from local materials and used in shallow coastal waters by small-scale fishers to catch small pelagic fish and baits. However, modern FADs can be anchored to waters of over 3,000 meters deep. The FADs have helped artisanal fishers to reduce fishing time, fuel cost,



A fisher demonstrates a Yellow fin tuna in Kilwa District

and risk during fishing, increase fish catches and earnings hence improved livelihood of coastal communities.

DSFA also supported fishers with portable Global Positioning System (GPS) that help them to identify potential fishing areas. Fishers have witnessed that using

GPS technology, they sail straight to the potential fishing grounds that helps to reduce fishing costs while increasing catches.



Artisanal fishers in Tumbatu, Zanzibar supported with GPS by DSFA showing their catch of a day.

PROS AND CONS OF THE COVID - 19 PANDEMIC ON DEEP SEA FISHERIES



A purseine vessel from Spain anchored at Dar es Salaam port for embarking and disembarking crews during the COVID-pandemic

By Dr. Emmanuel A. Sweke

It is apparent that the COVID-19 pandemic has not impacted fish stocks, but profoundly the fisheries sector including deep sea fishing in the world. Specifically, the COVID-19 pandemic continues to negatively affect the known key components of fisheries, namely fishers; processors; consumers; fisheries managers, law enforcers and scientists. Scientists have reported a reduced fishing efforts attributed to lock-downs, social distancing, reduced fishing trips and time, consequently decline in fish landings. On the other hand, the world witnessed a decline in consumption of seafood because of misleading

perceptions in some parts of the globe, resulting into decline in fish and fish products. One would say, because of reduced fishing efforts, a fish stock is the only part of the fisheries that was positively affected with the COVID-19 pandemic.

Deep sea fishing activities heavily depends on availability of crews that normally come from developing countries in Asia and Africa. However, because of travel restrictions and stringent measures imposed by the countries to deal with the spread of COVID-19, fishing vessels had to postpone their fishing operations. In September 2020,

The International Maritime Organization (IMO) reported that about 300,000 seafarers in the world could not be repatriated after being trapped working abroad ships and equal numbers were ashore unable to board ships because of COVID-19 pandemic. It became practically difficult to recruit seafarers in fishing vessels. For instance, in early February 2020 the Deep Sea Fishing Authority signed memorandum of understanding with Orthongel of Spain and Calm Seas Ltd of Seychelles to deploy fishing vessels in the Tanzania EEZ, but the companies postponed to take fishing licenses because of COVID-19.



Fisheries Inspector, Mr. Peter Shunula and Captain of FV ARTZA filling key documents during inspection

On 9th June 2020, the Tanzania president, His Excellency Dr. John Pombe Magufuli declared the country COVID-19 free which was preceded by reopening of its skies for international passenger flights on 18th May 2020 contrary to the surrounding countries whose boundaries remained closed. The Mwalimu Nyerere International Airport and Dar es Salaam port served as points of entry and exists by crews from West Africa, particularly Ghana, Liberia and Ivory Cost. A total of 12 vessels, seven from Spain and five from Seychelles exchanged crews at the Dar es Salaam port between August and October 2020. Five Tanzanians also boarded one of these vessels. On average, 11 and 10 crews

boarded and disembarked one vessel, respectively. The usage of the port amid the COVID-19 signifies its name, “bandari salama” in Swahili meaning a safe port. This was the first time in the history for Tanzania to serve such huge number of fishing vessels. Therefore, it was an opportunity for the Tanzania authorities to experience serving such vessels.

It also alarmed authorities in the country, namely DSFA, Tanzania Port Authority (TPA) and Tanzania Shipping Agency Corporation (TASAC) how to work together in attending such vessels including collection of relevant fees and royalties, monitoring their compliance and sharing

of information. These fishing vessels and their crews had to meet necessary requirements including compliance of the Port State Measure Agreement (PSMA) of FAO (that Tanzania is in the process to finalize the ratification) and Tanzania legislations. The country generated income ranging from visa application, taxes and fees, hotels, transport, food and so on a few to mention. It was estimated that every crew costs about USD 250 that covered a number of services while in Tanzania. Therefore, the COVID-19 pandemic has not only negative impacts but also positive lessons on deep sea fishing in Tanzania and the world at large.

Events in pictures

Project pose on a group photo with the Secretariat during an annual meeting at Mvuvu house in Dar es Salaam in 2020.



Hon. Hussein Abdallah Kombo, the Minister for Blue Economy and Fisheries (Zanzibar), witnessing fish on FV AL-MAIDA, a long liner fishing vessel licensed to fish in Tanzania EEZ

Offloading of fish from FV AL-MAIDA at Malindi port in Zanzibar





DSFA staff and Fisheries Officers from the Fisheries Ministries attending a training at DMI, Dar es Salaam



Ministry of Livestock and Fisheries pose on a group photo during a workshop to review deep sea fishing policy held in Dodoma.



Hon. Hussein Abdallah Kombo, Minister for Blue Economy and Fisheries (Zanzibar) listening to the Consultant constructing a boat ramp at DSFA Head Office at Fumba, Zanzibar during his first visit to DSFA in December 2020.

COLLABORATIVE AND PARTNERSHIP RESEARCH MODERNIZED THE WELLBEING OF TUNA FISHERS IN TANZANIA



Weighting and recording of biometric data of tuna along the coast of Tanzania

By Ali Ussi Basha

Capture fishery along the coast of Tanzania ranges from small-scale subsistence fishing to industrial fish processing. The small-scale tuna fishers in Tanzania used to capture tuna and tuna like species by fish hunting system. This situation led to low fishing efforts that eventually caused frustrations especially to the small-scale subsistence fishers. It should be noted that small-scale subsistence fishing employs less technology, operates in shallow waters mostly with small dug-out canoes between 3 and 5 metres in length, and wooden planked boats that range from 6 to 15 metres. Smaller vessels are powered by paddle sometimes sailing, larger vessels powered by inboard and outboard engines.

Nonetheless, small-scale subsistence fishing is the most important as it supports majority of the coastal communities in terms of food security, income, and employment.

SWIOFish project was discontent with situation facing small-scale subsistence fishers along the coast of Tanzania. The project prompted and put forward the problem, set aside funds and commissioned the Tanzania Fisheries Research Institute (TAFIRI) to emerge with technological study with durable solution. First, TAFIRI developed Fishing Aggregate Devices (FADs). The FADs were made by simple, permanent, semi-permanent or temporary structures and devices from locally available materials

that are used to lure fish together and thus helped fishermen to catch with minimum operational cost. Second, TAFIRI earmarked Potential Fishing Zones (PFZs) using satellite dataset and deliver the collected information on areas with abundant fish to fisherman through mobile phones. Third, fishers were given Global Positioning System (GPS) to track the fishing zones.

The TAFIRI piloted and launched the initiatives in four areas of Mafia, Tanga, Wete and Nungwi. In response, fishers are now spending less time and fuel with reported increase in fish catches. These outcomes lead to up scale the project to three areas, namely Kunduchi, Kilwa and Mtwara.

Thus, the project improved food and nutrition security, income, well-being of the fishers and resilient to climate variability that is being claimed to reduce fish abundance.

Collaborative partnership and teamwork contributed significantly to the success of these initiatives. SWIOFish project as the funder, TAFIRI as professionals and Coastal community as recipient and project beneficiary. As no single person is totally self-sufficient, working in team, increases efficiency and performance of the SWIOFish program.

Notwithstanding the success, there are limitations and

difficulties that need to be rectified in the forthcoming project phase. First, some difficulties were noticed in handling complexity and conflicts between different expectations and demands of fishers. It has been learnt that handling of such difficulties requires time, resources, knowledge, interactive learning and skilled project management. Second, on some occasions, there is lengthy delivery of satellite data sets to the fishers' community again satellite datasets happened to fall at far distant position beyond the fisher's capability. Third, the GPS are sought to be relatively expensive, and in some cases, produced instrumental and human errors. Fourth, during

cloud weather, the satellite and GPS have limitations to precisely discover the geo-positions. The motive behind this project initiative was to build learning structures and eventually improve efficient ways of fish catch. Next step after acquiring knowledge and learning, is to incorporate research into policy and wider practices. In this way more attempts are now required to bridge the gap between research, practices, and policy.



A team of fisheries experts collecting samples for genetic analysis

DSFA GOES DIGITAL IN FIGHTING AGAINST ILLEGAL, UNREPORTED AND UNREGULATED FISHING (IUU)



Hon. Ambassador Mbarouk Nassor, Director for Union Affairs in the Vice President Office receiving explanation on Vessel Monitoring System (VMS) during his visit at DSFA Head Office at Fumba, Zanzibar.

By Dr. Islam S Salum

Vessel Monitoring System (VMS) is used to track and monitor fishing vessels activities at sea. In efforts to strengthen the monitoring control and surveillance operations, Deep Sea Fishing Authority (DSFA) has upgraded its computer-based VMS from META to satellite-based (the web-based system -Themis Web Center). DSFA also uses Automatic Identification System (AIS).

DSFA has invested in these systems to combat illegal,

unreported, and unregulated fishing (IUU) in the Tanzania waters by ensuring that fishing vessels in Tanzania' EEZ abides to their license conditions. IUU fishing undermines conservation and management measures (CMMs) and legitimate industry; threatens the livelihoods of people who depend on fisheries; risks food security; and is often linked to violation of human rights.

Since its establishment, the Authority successfully registered 416 patrols against IUU, leading

to arrest of 10 fishing vessels engaged in illegal fishing and fined 390,000 USD (over TZS 900 million). In 2019, no case was reported to engage in IUU fishing in the EEZ of Tanzania. This was accomplished through coherent collaboration with the country's law enforcement agencies from Mainland Tanzania and Zanzibar including marine POLICE, NAVY and KMKM.

The ratification of the Port State Measures Agreement (PSMA), which the Government of Tanzania is in the final stage

of signing after approval by the National Assembly on November 2019, will add impetus on fighting against IUU and other crimes at sea. After ratification, DSFA will be benefited with the support of the SWIOFish project in the second phase to develop an electronic Port State Measure (e-PSM) application for the implementation of IOTC Resolutions 16/11 on Port State Measures.

For further improvement on MCS activities, DSFA under ECOFISH support for National and Regional Observer Programs

of IOTC, will pilot a program that deploy CCTV Camera to licensed fishing vessels to collect fisheries information on board without human intervention. It is believed that the use of electronic monitoring observer (EMO) will further strengthen the country's monitoring, control and surveillance (MCS) efforts. EMO is most efficiency and less cost way of collecting fisheries data and control fishing activities in the EEZ.

While Tanzania is reporting zero IUU cases amid statistics showing that IUU fishing remains

a serious global problem, costing countries between 11 and 26 million tons of fishes, which are harvested illegally annually in the world.

Various programs including vessels inspection and patrols under supervision of both governments of Mainland Tanzania and Zanzibar to combat IUU and fishery crimes have fled poachers in the Tanzania EEZ. This is a huge achievement toward blue economy development of our country.



Hon. Hussein Abdallah Kombo, the Minister for Blue Economy and Fisheries (Zanzibar) receiving explanation from the Captain of FV AL-MAIDA.

VALUE ADDITION AND FACTORS ASSOCIATED WITH CONSUMPTION OF TUNA AND TUNA-LIKE SPECIES IN TANZANIA



Tuna landed at a fishing market for auction

By Dr. Mary A. Kische, Dr. Rushingisha M. George, and Dr. Baraka C. Sekadende (TAFIRI)

Fisheries sector in Tanzania is important as it provides food, employment, income, livelihood, and foreign earnings. The sector employs over four million people and contributes about 1.4% to the country's Gross Domestic Product (GDP). Tuna and tuna-like are the most commercially important fish species in Tanzania marine waters. The main tuna species found in the Exclusive Economic Zone (EEZ) are Yellowfin tuna (*Thunnus albacares*), Skipjack tuna (*Katsuwonus pelamis*) and Bigeye tuna (*Thunnus obesus*). There are also other large pelagic species including billfish and sharks found in significant quantities in the Tanzania EEZ.

There is poor understanding on value addition and factors associated with consumption patterns of tuna and tuna-like species in Tanzania that

can largely enhance food and nutrition security and investments opportunities in the deep sea fishery. In May 2020, Deep Sea Fishing Authority (DSFA) under the SWIOFish Research Grant Facility funded by the World Bank, commissioned Tanzania Fisheries Research Institute (TAFIRI) to undertake studies on “assessment of consumption patterns and factors associated with under consumption of tuna and tuna-like species” and “reduction of post-harvest loss of tuna and tuna-like species through value addition to improve food and nutrition security in Tanzania”. This article provides preliminary results that will enhance understanding on the status of tuna and tuna-like species in Tanzania marine waters and the factors associated with consumption patterns and techniques that will reduce the post-harvest losses in

the production value chain.

The tuna and tuna-like consumption patterns study revealed interesting preliminary findings. There is generally low level of consumption of tuna and tuna-like fish species (about 22% of the total catch) among the residents of coastal areas attributed to the fishery nature, which affects fish price in the local markets. However, the consumption increases during the high fishing seasons (September-December). The causes of low consumption were attributed to poor understanding of the nutritional and health benefits (85% of respondents) and high price of the species. For instance, one kilogram of highly valued tuna species such as Yellow fin tuna and Bigeye tuna was sold at 8,000 and 5,000 Tanzania Shilling during low and high fishing seasons,



Mr. Karim Juzee, a Fisheries Officer at Mtwara Municipal measuring weight of tuna landed by artisanal fishers

respectively. It is more likely that increase in catches of tuna and tuna-like species may reduce the market price and encourage their consumption in the country. Additionally, improved community knowledge on the health benefits of tuna, among the study objectives, will increase fish consumption per person in the country that is currently stands at 8.3 kg per year compared to that of the global, 20.5 kg per year.

Other interesting finding was that local market for the species in the country is beyond coastal areas where large quantities of tuna and tuna-like species are exported outside the fishing area, for example 78% of landings at Tanga was transported to Arusha, Dar es Salaam, Dodoma and Morogoro. The reason for the export is an attractive price and market availability. More investment, is therefore, recommended in the

tuna fishery to improve catches that will supply the local markets available beyond coastal areas.

The reduction of post-harvest loss through value addition to improve food security was assessed in Mtwara and Dar es Salaam. These two regions are among the potential areas for tuna and tuna-like fishery with the highest catch per unit effort (CPUE - an indirect measure of the abundance of a target species) ranging from 210 to 1,595 Kg/fisher/boat and 30 to 375 Kg/fisher/boat, respectively. The preliminary results revealed that the post-harvest loss of tuna and tuna-like species in Mtwara was higher than in Dar es Salaam and this is because most retailers in Mtwara have no storage facilities and it takes an average of six hours before selling their fish. Also, fishers and traders have experienced the highest post-harvest loss in terms of the market and physical

loss of tuna and tuna-like species in Dar es Salaam than in Mtwara. However, fishers do experience the highest quality loss of tuna and tuna-like species in Mtwara than in Dar es Salaam. The post-harvest loss in tuna and tuna-like species can be reduced through value addition and shelf stable products that will improve food and nutrition security of the surrounding communities and country in large.

It is anticipated that upon completion of the studies more lights will be shed on the value addition technologies and consumption patterns of tuna and tuna-like species in Tanzania as research priorities areas articulated in the Research Agenda for Fisheries in the Tanzania EEZ (2020 -2025) and the National Fisheries and Aquaculture Research Agenda (2020 - 2025).



DEEP SEA FISHING AUTHORITY

11