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# A Situational Analysis of Small-Scale Fisheries in Tanzania: From Vulnerability to Viability

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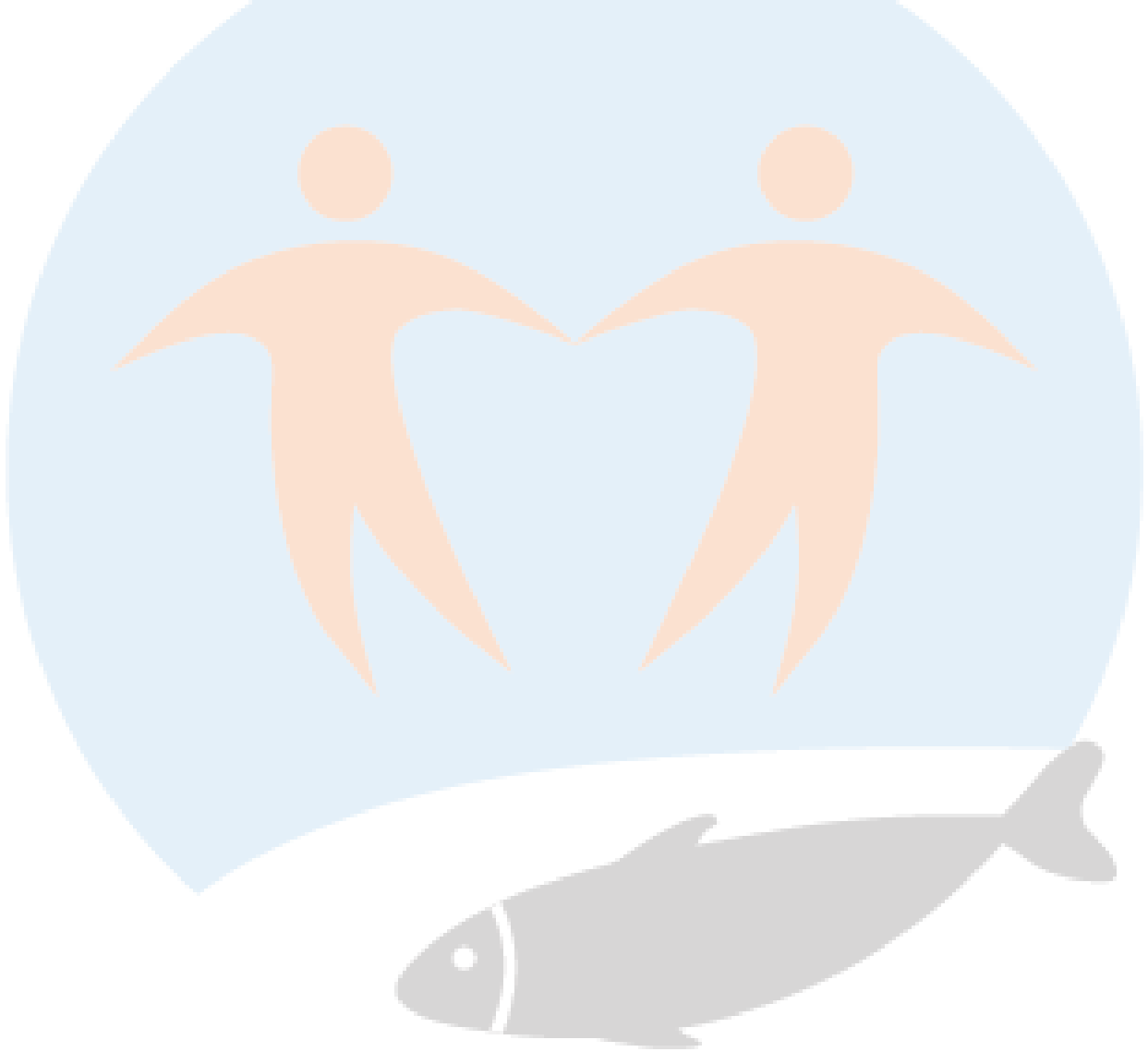
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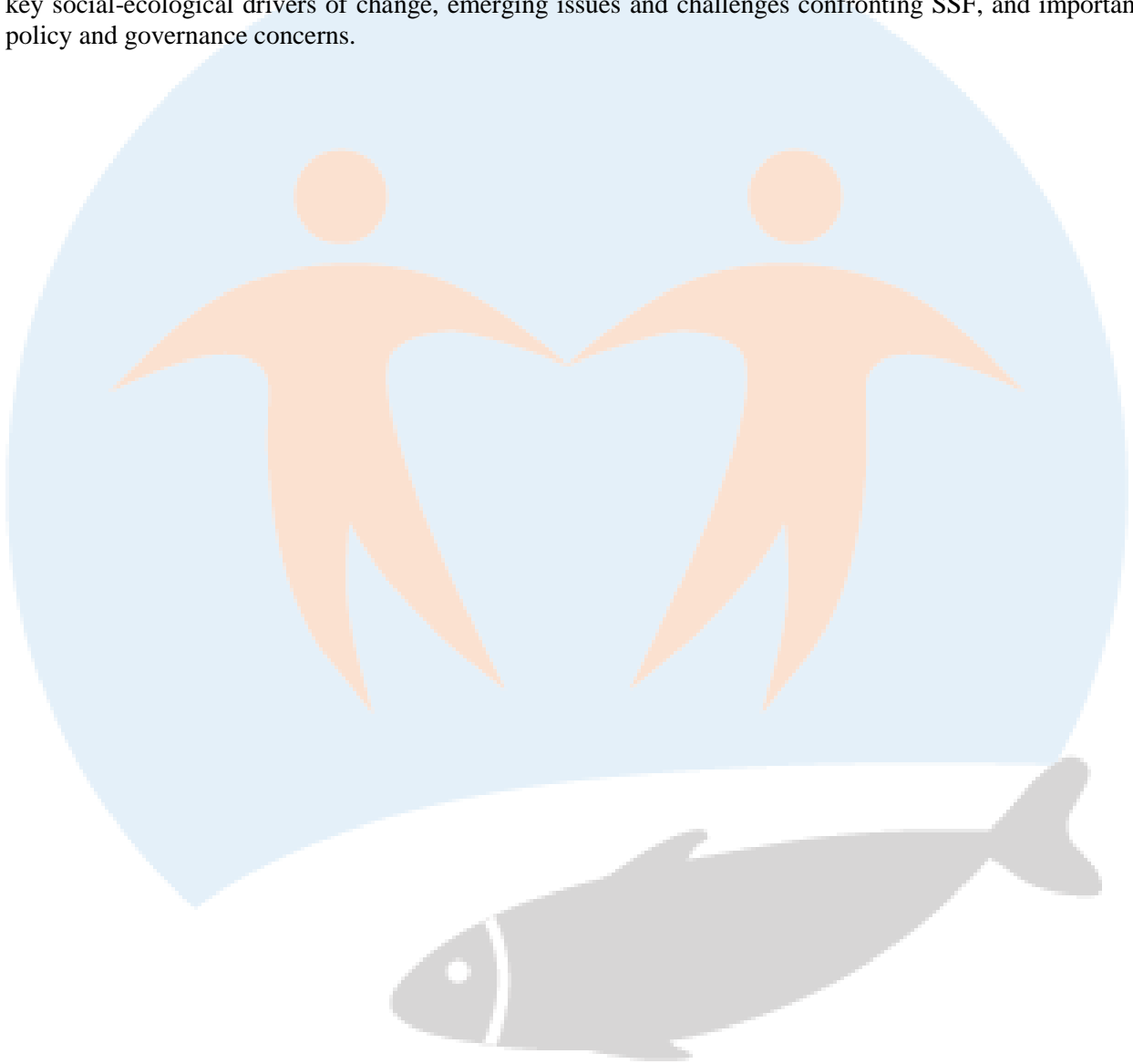
## V2V Working Paper Series

V2V Global Partnership “Working Paper Series” aims to facilitate the exchange of ideas, mobilize knowledge and generate broad-based discussions on vulnerability-viability themes within the context of small-scale fisheries. The Working Paper Series will provide a collaborative and interactive platform for academics, practitioners, representatives of civil society, and individuals interested in making written contributions to the theoretical, methodological, practical, and policy aspects of small-scale fisheries, both locally and globally. To contribute to the V2V Working Paper Series, please contact [v2vglobalpartnership@gmail.com](mailto:v2vglobalpartnership@gmail.com).



## A V2V Situational Analysis of Small-Scale Fisheries

Small-scale fisheries (SSF) are an important economic resource, both at the local and global level; their depletion has ramifications on fundamental aspects of life, spanning from food security to society's wellbeing and culture. On the global scale, SSF provide food security and a source of livelihoods and income for more than 100 million people. The objective of the V2V Situational Analysis is to build a global perspective on key vulnerabilities and opportunities associated with SSF viability across six countries in Asia (Bangladesh, India, Indonesia, Japan, Malaysia, Thailand) and in six countries in Africa (Ghana, Malawi, Nigeria, Senegal, South Africa, Tanzania). Each country-level situational analysis identifies the key social-ecological drivers of change, emerging issues and challenges confronting SSF, and important policy and governance concerns.



**IN MEMORIAM**  
by Batuli Mohammed Yahya

Dr. Paul Ochien’g Onyango, the Country Coordinator for the V2V Global Partnership Project in Tanzania, passed away on April 10, 2022. UDSM and Tanzania have lost one of their greatest servants and experts.

He obtained his doctorate (PhD) in Fisheries Management in 2011 from the University of Tromsø Norway. He was a senior lecturer at the School of Aquatic Sciences and Fisheries, University of Dar es Salaam (UDSM), held various positions within and outside UDSM, and actively participated and carried out research on fisheries socio-economics and many other areas related to fisheries and local communities.

He also invested so much effort in building the V2V Global Partnership Project in Tanzania and was instrumental in the success of the Partnership.

Thank you, our beloved Dr. Onyango, for your advice, guidance, and positive impact on our careers. Your experience and expertise showed us the way. May Almighty God grant you paradise. We have understood your ambitions for us and will continue your work with the help of the Almighty. Thank you for the passion to research that you have transmitted to us. Your rigor and high sense of work well done will be remembered and missed forever.

Rest in Peace our beloved Dr. Onyango.



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# A Situational Analysis of Small-Scale Fisheries in Tanzania: From Vulnerability to Viability

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## 1. Introduction

Tanzania is a country made up of Zanzibar Island and Tanganyika, it is coastal state on the Western Indian Ocean, and has maritime borders with Kenya, Comoros, Seychelles and Mozambique. Tanzania’s coastline is approximately 1,424 km (including the coastline of the major islands and islets) and the width of the continental shelf is 5.8 km which drops off to waters with depths greater than 500 meters quite near to the coastline, except in the Zanzibar and Mafia channels where it reaches a width of about 62 km (Mangora et al., 2016). Due to its narrow continental shelf, a large part of the fishing effort in Tanzania is therefore concentrated in the near-shore coastal waters. Approximately 90% to 95% of the marine fish production comes from fishing within the territorial sea. The Marine fisheries in Tanzania can be broadly divided into 3 main fisheries: the small-scale coastal fisheries, the prawn fishery and the offshore fishery (within the EEZ and beyond). The Exclusive Economic Zone has an area of 223,000 km<sup>2</sup>, but only a few Tanzania vessels exploit the full extent of the EEZ most of fishing vessels are foreign targeting tuna and tuna like species (MALF, 2016).

The country is well endowed with inland waters and lakes, with a total area of 64,500 km<sup>2</sup>. It shares the waters of important Rift Valley lakes with its neighbors, one of which Lakes Victoria, Tanganyika and Nyasa are some of the world’s largest inland water bodies (MALF, 2016), there are no major inland water bodies in Zanzibar islands. In Tanzania the available water bodies yield a wide range of aquatic resources, where the scale of operations ranges from small-scale subsistence fishing to industrial fish processing. The small-scale artisanal fishery is considered to be the most important fishery as it supports majority of the fishing communities (Silas, 2011). Approximately 80 % of the national fisheries production is attributed to the freshwater fishery. Small-scale fisheries are done in shallow waters where group of fishers embark on a small sized fishing boat, work on a daily basis using largely non mechanized gears and employ less technology, and the catches usually comprise a variety of finfish and invertebrates. Tanzania is among the poorest countries of the world. The economy is heavily dependent on agriculture, which provides 85% of exports, and employs 80% of the work force. The fisheries sector falls within the agricultural sector (Francis & Bryceson, 2007).

Small-scale fisheries provide substantial employment, income, livelihoods, recreation, foreign earnings and revenue to the country. The majority of coastal communities in Tanzania derive their economic livelihood from the sector (MLF, 2010). The fishery typically involves a variety of fishing techniques targeting a large number of species (Jiddawi & Ohman 2002). The fisheries fleet operates mostly with small dug-out canoes between 3 and 5 metres in length, and wooden planked boats that range from 6 to 15 meters. Smaller vessels are powered by paddle and sail, larger vessels by inboard and outboard engines (MALF, 2016). The main targeted species for Dhow and motorized vessels are kingfish, tuna, sailfish and marlin, while those using outrigger canoes, dugout canoes, or fishing by foot, are mostly targeting reef fish (ZFFS, 2016). Most of the gear used by small-scale fishers are handlines, traps, longline, gill net, spear gun, octopus stick, beach

seine and purse seine. There is a vibrant export market, exploited by small-scale fish processors and traders serving the regional market, and by large fish processors selling into international markets.

## **2. Meaning and status of small-scale fisheries**

### **2.1 Small-scale fisheries contribution to Tanzania**

In Tanzania, the terms “small-scale fishery” and “artisanal fishery” are synonyms. The fishing sector in general contributes significantly to the livelihoods of coastal communities of Tanzania providing employment and food security, contributing about 1.4% to the Gross Domestic Product (GDP) in Tanzania mainland and about 5.7% in Zanzibar. In mainland Tanzania the sector is estimated to employ over 147,479 inland fishers operating 42,288 (mostly very small) vessels, and about 53,035 marine fishers (Marine Fisheries Frame Survey 2018) operating almost 9,200 fishing vessels. Moreover, in 2014, there were some 183,800 persons engaged in fishing, accounting for about 0.7% of the work force, with a large, but unknown number, also engaged in fish trading, processing, transporting and fish carrier activities, and net repair (MALF, 2016). In Zanzibar a total of 49,332 fishers were counted operating 6,523 fishing vessels while the number of fishers has increased progressively from 34,269 in 2007 to 49,332 in 2016. This represents an increase of 44% within a span of nine years (ZFFS, 2016). Fish constitutes up to 30 % of the animal protein supply of the overall population of Tanzania and over 90 % of that of the coastal communities (January and Ngowi, 2010)

In mainland Tanzania the marine fisheries land an average of 55,677.08 (14.30%) MT of fish annually (MALF, 2018). The catch from marine fisheries increased from 335674.3 MT in 2009 to 470309 MT in 2019, while inland water landings increased from 288058.5 MT in 2009 to 409332.72 MT in 2019. In Zanzibar, landed fish catch is estimated to be 30,000 MT per year (DFD, 2017). There is an increase in fish landings from 25,694.98 MT in 2010 to 38,106.98 MT in 2020 and then a decrease to 28694.42 MT in 2021. The reason for the change could be due to increased fishing pressure and number of fishers contributing to the decline of fisheries resources.

Due to the limited employment opportunities, coastal communities are still depending heavily on the fishing industry, and small-scale fishing plays an important role in supporting the local economy and continues to make a major contribution to livelihoods. As the younger generation drop out from school and join fisheries activities, the age of the fishers is increasingly skewing younger, with the age range of 18 to 55 years old. This has led to an increase in fishing efforts in artisanal fishing grounds and has led to high fishing pressure which causes the decline of fish stocks. Most of the fishing production factors i.e., fishers, fishing vessel and gears (fishing inputs), showed a significant increase in recent years (ZFFS, 2016). As the current situation shows, the Tanzania fisheries industry is losing its stability and the viability of fishing communities is also at the brink of being lost. Fishers are worried about the very poor situation of the coastal fishery and have become vulnerable to the situation. There is an identified need to strengthen fisheries management.

### **2.2 Small-scale fisheries profile in Tanzania**

As noted, most fisheries in Tanzania are small-scale, and there is no formal definition for what they refer to. Small-scale fisheries (SSF), or artisanal fisheries, are a type of fishery that operate on a small-scale using relatively little capital. They operate in inner waters and mostly use non-mechanized fishing vessels and gears.



**Table 1***Summary of small-scale inland fisheries profile in Tanzania*

Terms used in SSF	Gear types	Vessel types	Ecosystem/ target species	Ecosystem/ target species
<ul style="list-style-type: none"> <li>• Artisanal</li> <li>• Commercial</li> </ul>	<ul style="list-style-type: none"> <li>• Gillnets</li> <li>• Cast nets</li> <li>• Seine nets</li> <li>• Drag nets</li> <li>• Scoop nets</li> <li>• Basket traps</li> <li>• Hand lines</li> <li>• Long lines</li> <li>• Troll lines</li> <li>• Spear stick</li> <li>• Harpoons</li> <li>• Mosquito nets</li> <li>• Trawl nets</li> </ul>	<ul style="list-style-type: none"> <li>• Boat</li> <li>• Canoe</li> <li>• Outrigger canoe</li> <li>• Dhow</li> <li>• Dinghy</li> <li>• Mashua</li> <li>• Ngalawa</li> <li>• Catamarana</li> <li>• Sesse flat one end</li> <li>• Sesse pointed at both ends</li> </ul>	Freshwater ecosystems: <ul style="list-style-type: none"> <li>• <i>Lates niloticus</i></li> <li>• <i>Oreochromis niloticus</i></li> <li>• <i>Tilapi zillii</i></li> <li>• <i>Oreochromis rukwaensis</i></li> <li>• <i>Oreochromis leucostictus</i></li> <li>• <i>Balirius tanganyicae</i></li> <li>• <i>Tilapia rendalli</i></li> <li>• <i>Cintharinus gibbosus</i></li> <li>• <i>Clarias theodora</i></li> <li>• <i>Clarias liocephalus</i></li> <li>• <i>Clarias gariepinus</i></li> <li>• <i>Protopterus aethiopicus</i></li> <li>• <i>Astatotilapia nubile</i></li> <li>• <i>Haplochromis pallidus</i></li> <li>• <i>Haplochromis obesus</i></li> <li>• <i>Haplochromis bloyeti</i></li> <li>• <i>Nematopalaemon tenuipes</i></li> <li>• <i>Ostrothrissa miodon</i></li> <li>• <i>Rastrineobola argentea</i></li> <li>• <i>Oreochromis sp.</i></li> <li>• <i>Rhamphochromis</i></li> <li>• <i>Opsaridium sp.</i></li> <li>• <i>Haplochromis sp.</i></li> <li>• <i>Bathelarius nyasensis</i></li> <li>• <i>Engraulicypris sp.</i></li> <li>• <i>Labeo</i></li> <li>• <i>Synodontis</i></li> <li>• <i>Bagrus</i></li> <li>• <i>Oreochromis urolepis</i></li> <li>• <i>Synodontis spp.</i></li> <li>• <i>Hydrocynus spp.</i></li> <li>• <i>Clarias spp.</i></li> <li>• <i>Bagrus spp.</i></li> <li>• <i>Alestes spp</i></li> </ul>	Marine ecosystems: <ul style="list-style-type: none"> <li>• <i>Lethrinus rhodopterus</i>;</li> <li>• <i>Cephalopholis argus</i>;</li> <li>• <i>Caesio xanithonotus</i></li> <li>• <i>Gymnasada nuda</i></li> <li>• <i>Gerres oblongus</i></li> <li>• <i>Penaeus bubulus</i></li> <li>• <i>Panulirus ornatus</i></li> <li>• <i>Oedalechilus kesteveni</i></li> <li>• <i>Upeneus oligospirus</i></li> <li>• <i>Nemipterus japonicus</i></li> <li>• <i>Octopus chromatus</i></li> <li>• <i>Sardinella neglecta</i></li> <li>• <i>Carrotomus spinidens</i></li> <li>• <i>Scomberomorus plurilineatus</i></li> <li>• <i>Restrelliger chrysozonus</i></li> <li>• <i>Loligo duvauceli</i></li> <li>• <i>Carcharinus falciformis</i></li> <li>• <i>Anchoviella commersonii</i></li> <li>• <i>Siganus oramin</i></li> <li>• <i>Sphyaenella chrysotaenia</i></li> <li>• <i>Caranx cynodon</i></li> <li>• <i>Naso hexacanthus</i></li> <li>• <i>Arius serratus</i></li> <li>• <i>Chanos chanos</i></li> <li>• <i>Chirocentrus dorab</i></li> <li>• <i>Pomadasys multimaculatum</i></li> <li>• <i>Hemiramphus commersoni</i></li> <li>• <i>Xiphias gladius</i></li> <li>• <i>Alutera monoceros</i></li> <li>• <i>Rachycentron canadum</i></li> <li>• <i>Hypolophus sephen</i></li> <li>• <i>Holocentrus servus</i></li> <li>• <i>Lutjanus bengalensis</i></li> </ul>

### **3. Social, economic, ecological changes and key drivers**

This section presents information on the key social-ecological changes as well as the key drivers of change with respect to vulnerabilities and viabilities of Tanzanian SSF, whereby vulnerability is defined as a function of exposure, sensitivity and capacity to respond to threats. Here the term viability is used not only in economic sense but also to include its social, political, and ecological aspects.

#### **3.1 Social changes**

##### ***3.1.1 Population upsurge and dependency on fisheries resources***

The rapidly growing population of 2.7% compared with limited coastal resources available, increases the demand for fish, which can only be satisfied by imports or increased production (MALF, 2016). The high dependency ratio together with unprecedented levels of urbanization is placing a significant strain on fisheries which are fully, if not over-exploited. There are a high number of students dropping out from school, especially adolescents, and this high rate is attributed to the lack of financial support for education because most parents in the coastal villages are poor. This contributes to the increase in the number of fishers in recent years which are mostly young. This group of young fishers were reported to use the most destructive fishing gears to catch fish, further leading to overexploitation and depletion of fish stocks (Benansio et al., 2016).

The Lake Victoria watershed also supports a rapidly growing human population of riparian communities. To most of these people, the lake is simply a source of food (fish), as they do not directly benefit from the fish exports. There is a reported decline in the total estimated catch of Nile perch in recent years, tied with a shift in contribution of catches from higher trophic level species (Nile perch) to lower trophic level (dagaa) species (Njiru et al., 2008). Fishing in Lake Victoria has been occurring at such high rates that the lake is yielding harvest beyond sustainable levels as evidence by decrease in Nile perch catches in recent years.

##### ***3.1.2 Pollution in coastal areas***

In developing countries, such as Tanzania, rapidly urbanizing areas with high population growths often suffer from insufficient infrastructure and uncontrolled urban development making it difficult to manage the large amounts of waste produced (Scholz, 2004). The coastal water is among the most populated areas of Tanzania, and Dar es Salaam and Zanzibar are considered to be highly polluted. For example, in the old stone town in Zanzibar, around 70% of the waste that is generated is randomly disposed (Kalin & Skoog, 2012) and sewage systems are directly discharging untreated waste waters into the Indian ocean. The lack of sufficient wastewater treatment facilities is the main cause of current levels of some pollution in the coastal marine environment off Dar es Salaam as well. The concentration of mercury (Hg) from Mtoni also approached the upper limit recommended in FAO/ WHO guidelines posing a high risk to marine organisms and humans.

The high population growth and improved income fostered the transition from local food markets towards supermarkets with high packaging content (Jambeck et al. 2018). The plastic wastes such as water bottles, food wrapping, and bags are increasing at high levels in coastal waters. Unquantified amounts of mismanaged plastic materials are discharged into coastal waters and have detrimental effects on local marine environments and the livelihoods of artisanal fishers. For example, in Zanzibar there are cases of floating plastic waste in the ocean, which are often swallowed by marine turtles, causing their death.

## **3.2 Economic changes**

### ***3.2.1 Growing tourism industry in Tanzania***

Coastal tourism has become an extremely important source of revenue for Tanzania in recent years (Mohammed, 2002). However, as the economy has flourished, local populations and construction activities along the coast have increased substantially. Until recently, most tourist developments have had little regard for the environment, with most being built right on or beyond the highwater mark, destroying wetlands and cutting away vegetation. In areas such as Nungwi, Zanzibar for the most part, the pursuit of providing calm ‘get-aways’ for tourists has destroyed what was once a pristine coastline. Some of the more recent resorts have been more circumspect, while in some cases, fishers are being denied access to historical fishing areas through “privately owned” resort properties. There is reported conflict over resources use, and local fishers perceive that tourism related activities such as diving and snorkeling, boat riding, and dolphin tourism, have negatively influenced their fishing activities. In turn, this has negatively impacted fishers’ household income. On other hand a flourishing tourism sector (pre-pandemic) has increased demand in fisheries resources, and local fishers have intensified the frequency of fishing activity due to high demand for fish and seafood in the tourism resorts/hotels along the coastal villages (Benansio et al., 2016).

## **3.3 Ecological changes**

### ***3.3.1 Habitat loss and degradation***

In Tanzania, ecological change of aquatic environments is associated with number of factors, including both anthropogenic and climatic induced changes, such as destruction of mangroves. These challenges have been identified in several coastal areas of the country, including for example, where mangroves are cleared for rice farms, charcoal and salt production, or construction of hotels. In Mafia Island, clearance of mangroves was for a prawn farm (Semesi, 1991). Moreover, activities such as improvement of the ports of Dar es Salaam and Zanzibar through dredging has contributed to altering the physical characteristics of the habitat by means of increased turbidity; blockage and diversion of rivers; destruction of coral reefs and mangrove forests; siltation and sedimentation; smothering of bottom organisms; beach erosion and intensive trampling on seagrasses (Kyewalyanga, 2011). Such induced changes are expected to expose the coastal populations and ecosystems into several dangers (Michel & Pandya, 2010).

Corals and coral rocks are mined and used as sources of calcium carbonate, and in some coastal areas of Tanzania, the rocks are baked for the production. In other places, especially on Zanzibar islands, coral rock and coral colonies are used as building blocks, these activities cause potential destruction of breeding areas and a significant impact to small scale fisheries. Dynamite fishing has contributed to the decline in the productivity and catches of artisanal fishery. It has degraded the coral reefs to such an extent that only two (Latham and Mafia) of the eight coral reef sites recommended for marine parks in 1968 had intact coral reefs in 1983 (Salm, 1983). The rest of the reefs have been reduced to rubble.

The inland fishery in mainland Tanzania is mostly comprised of landings from lakes (through Lake Victoria, Tanganyika and Malawi). For example, Lake Victoria supports a valuable artisanal and commercial fishery, and is a source of domestic and industrial water supply (Abila, 2000). The annual population growth around the lake is ~3.8% per year (Bootsma & Hecky 1993), leading to the encroachment of swamps surrounding the lake to clear more land for settlements and food provision. More than 60% of the Lake Victoria Basin suffers from degradation such as loss of land cover, increasing soil erosion, declining soil fertility and agro-chemical pollution, water pollution from municipal waste (untreated waste and storm water) and industrial waste. These have all contributed significantly to the eutrophication of the Lake, especially in

the Bays and Gulfs (Njiru et al., 2008). There is an increase in decomposition of algal and detritus which has contributed to increased anoxia in the deep-water layers in the lake. This reduced water transparency also is considered a possible explanation for the disappearance of some haplochromines wherein their vision is important in their reproductive behavior (Seehausen et al., 1997). Reduced income sources from the fishery have resulted in the clearance of wetlands in order to facilitate the growth of horticulture cash crops.

### **3.3.2 Biomass reduction**

Over the past decade, lakes in Tanzania have undergone dramatic ecological changes associated with physical, chemical and biological processes. For example, in Lake Victoria an exotic introduction and increased fishing pressure have led to a decline in fish catches, and changes in the lake's biodiversity, threatening the sustenance of the lake fishery upon which millions depend for their livelihoods. The water quality of Lake Victoria has deteriorated dramatically over the past few decades, especially regarding eutrophication as a result of increased nutrient inputs (Lung'ayia et al., 2000; Mugidde et al., 2005). The lakes phytoplankton community has become increasingly dominated by unpalatable, toxic cyanobacteria (Lung'ayia et al., 2000), and this has accelerated anoxic condition in the Lake, especially in some seasons of the year. The accumulation of toxic compounds forced less-tolerant natives fish species to move into the oxygenated surface waters, where they are subsequently exposed to heavy predation by other species like Nile perch, and possibly a higher fishing mortality (Getabu et al., 2002). Moreover, the ecological surveys in some areas of Zanzibar Island suggest that current fishing effort and pattern has led to biomass reductions of many target species below the 50 % of the virgin biomass threshold (e.g., the west coast of Unguja Island).

## **4. Emerging issues and challenges**

In Tanzania, the challenges that drive SSF vulnerabilities are in part related to topics described below. Firstly, inadequate facilities and infrastructure make SSFs more vulnerable. Post-harvest handling infrastructure such as ice making machines or drying racks are not up to standard and cause post-harvest loss of supply. Post-harvest in fish losses occur at many stages of the distribution chain from capture to consumption, and as a result, supply and fishing efforts are lost as the catch is no longer up to standards for sale or consumption. Sometimes fish are thrown away due to market oversupply and that brings a huge loss to fishers (Ibengwe, 2010). For example, the anchovy “dagaa” fishery is resilient to high levels of fishing pressure, and continues to make a major contribution to livelihoods, but is associated with high level of post-harvest loss, both physical and quality losses. They are largely sun dried on sand and grass, and during the rainy season the processors can become overwhelmed, and are seriously challenged to dry the catches before the fish spoils. As a result, much sun dried dagaa is of low quality and is more suited to animal feed than human consumption. In Lake Tanganyika for example, post-harvest losses range from between 35% to 50% which denies needed income to fishers, as nearly half of their harvest turns to waste.

Secondly, the decline in fish catch and associated resource users' conflicts are key sources of vulnerabilities. Fisheries conflicts are increasing in both frequency and intensity. The primary causes of fisheries conflict are illegal fishing, declining fish populations and the rising demand for seafood. Along the coastline, illegal dynamite fishing has caused community protests, clashes between fishers and security forces, and territorial fights between tourist hotels and fishing communities. The presence of migrating fishers which results in a temporal increase of fishing effort in certain areas are among the future problems in the management of fisheries resources.



Thirdly, gender disparity and the present market situation in the sector makes women more vulnerable. With men dominating the industry, women are left out of precious employment opportunities that could lead to greater food security for many families. Men and women's roles in fisheries are often valued differently, both culturally and economically, and women's contributions are often not counted and not taken into consideration for management despite being critical to fisheries production. In recent years a number of women have been working as fish vendors, and many of them are selling fish by the road in a suburb. In such situations, they were obliged to pay a 50-cent mandatory fee to the municipality and a daily fee of 1 USD to a private landowner (Frocklin et al., 2013). In comparison, men have more options to sell their fish. For example, in Zanzibar men can sell fish from bicycles which require no fees, or to the tourist hotels or inside the main market. In contrast, one study has found that no women rented tables inside the main markets despite their request to get the chance (Frocklin et al., 2013). It is noteworthy that women are often the main caregivers of the family and are responsible for household finances and provision of food. Thus, gender inequalities not only impact the livelihoods of women, but the entire household and community.

Tanzania's fish markets remain quite vibrant across the country's various regions. However, because of the highly informal and unregulated nature, the government remains unable to reap the benefits of the markets' vibrancy. Many traders buy and sell fish independently while quality, availability of fish, price, and safety were reported to be less important and clearly not as important as having well established contacts. Overall, the market system is not well coordinated.

Fourthly, policy making and insufficient data causes vulnerability to SSF. First, there is little investment in research, resulting in very few data collectors. Second, the fisheries data in Tanzania are not organized in a structured and formalized method that allows for easy access and use of findings. Finally, there is a widespread inadequacy when it comes to meeting the standards of data and management.

Lastly, Illegal Unregulated and Unreported (IUU) fisheries in Tanzania is happening in both inshore and offshore fisheries creating a vulnerable situation, as it can lead to resource degradation and fisheries unsustainability (Luomba et al., 2016). IUU fishing is considered as a high-return activity and the offenders will continue to fish illegally as long as they gain more profit. Efforts have been made by government to eliminate IUU fishing, which involves improving fisheries management and governance, ensuring licensing and registration of fishing vessels, monitoring and surveillance. Despite the efforts of tackling the problem, corruption is said to be among the major hindrances to sustainable fishing behaviors. Low technology and poor equipment for monitoring and surveillance of deep-sea fishing creates a loophole for foreign vessels to illegally exploit the fisheries resources.

## **5. Policy and governance**

Small-scale fisheries in Tanzania are largely an open-access system in which the right to catch fish is available to all. The Ministry of Livestock and Fisheries Development has the mandate of overall management and development of fisheries resources in the country. This sector is coordinated by a Permanent Secretary (PS) in-charge of fisheries. Under the PS, there are four directorates, namely: (i) Department of Fisheries Development, (ii) Aquaculture Department (iii) Fisheries Research Training and Extension Services Department and (iv) Deep Sea Fishing Authority. The Department of Fisheries Development has several responsibilities: initiating and reviewing policies; aiding in formulating legislative guidelines; promoting investment in the fisheries sector; promoting development of market infrastructures; and overseeing the enforcement of fisheries legislations. The Department of Fisheries Development works with District Fisheries Officers who coordinate management activities at their respective districts.

In 1997, the government adopted the National Fisheries Sector Policy and Strategy Statement. Its main objective is to promote conservation, development and sustainable management of fisheries resources for the present and future generations. The strategies of the National Fisheries Policy reflect the Tanzanian government goals to reduce poverty and unemployment, enhance food security, increase economic growth and develop environmentally sound policies.

The Fisheries Department is responsible for policy making related to fisheries management. It ensures that policies are properly implemented while overseeing the sector's planning and development projects. It also aids the government in formulating and reviewing legislation governing the fishing sector, as well as aiding law enforcement in executing these laws. As well, it oversees research related to the development of the sector, capacity building, coordination of stakeholders, revenue collection and training experts in the industry while building curricula. Finally, it manages international and inter-regional collaboration.

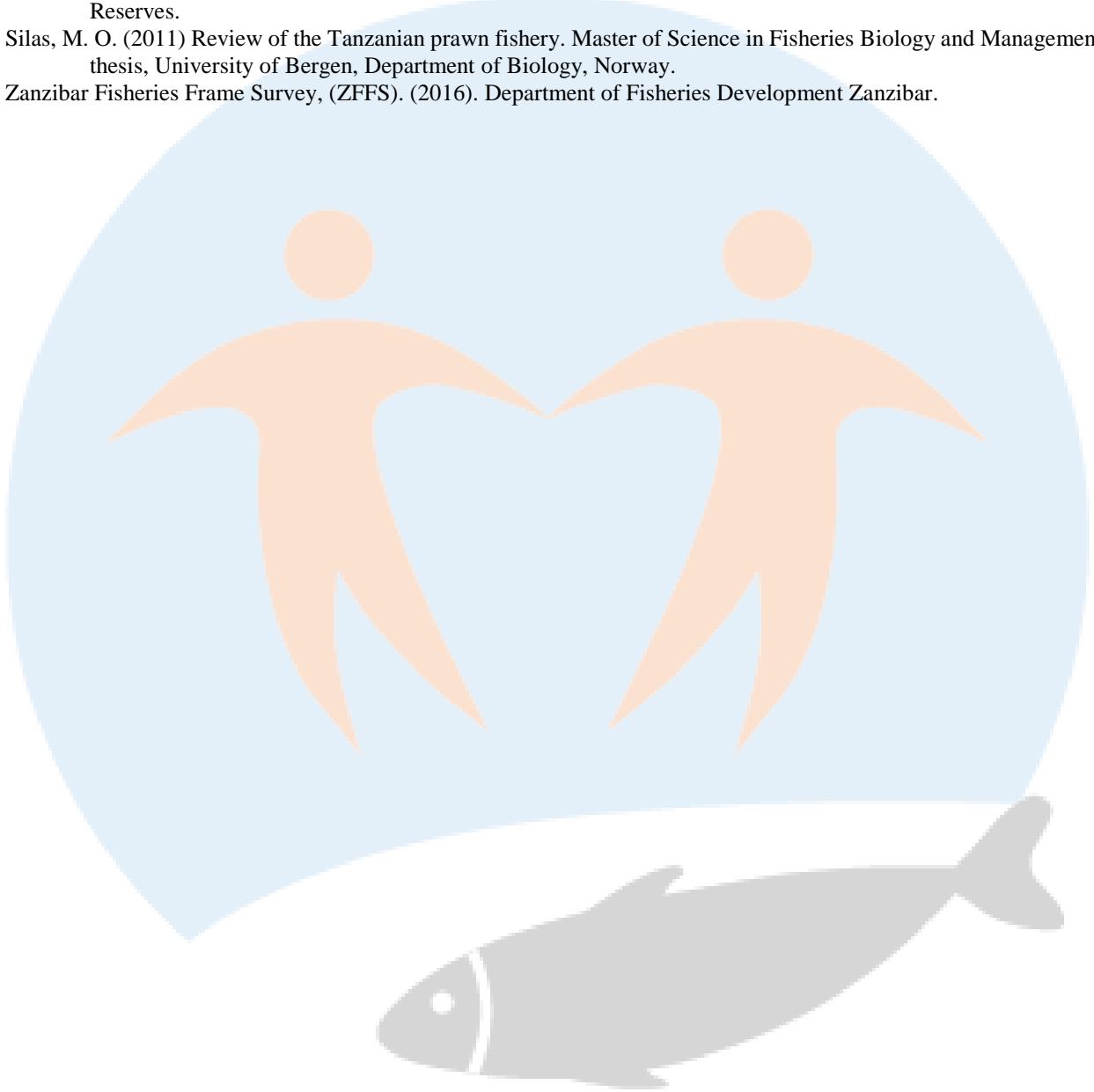
The management of fisheries resources in Tanzania is supported by a number of government policies, including: the National Environment Policy (1997); the National Integrated Coastal Environment Management Strategy (2003); the National Poverty Management Strategy (2003); the National Poverty Eradication Strategy (1998) and the National Tourism Policy (1999). As well, fisheries are regulated by such legislation as: the National Fisheries Master Plan; the Marine Parks and Reserves Act (1994); and the Mangrove Management Plan. Finally, there are several statutes related to fisheries management, including: the Forest Act (2002), Environment Management Act (2004); Village Land Act (1999); and Tanzania Investment Act (1997).

On a last note, the Ministry has the core function of Monitoring Control and Surveillance (MCS) as stipulated by the new Fisheries Act no 22 of 2003. Accordingly, its responsibilities in this area include: issuing fishing licenses and preventing illegal fishing. Policy enforcement is pursued at both the local and national level. For example, the Ministry may only issue fishing licenses to fishing vessels above 11 meters, while local authorities may issue licenses to vessels measuring up to 11m. In order to aid the state's MCS responsibilities, local authorities are empowered to enact and enforce by-laws at the district level. Such by-laws are enacted and approved by the district council elected leaders.

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## Vulnerability to Viability (V2V) Global Partnership

The Vulnerability to Viability (V2V) project is a transdisciplinary global partnership and knowledge network. Our aim is to support the transition of small-scale fisheries (SSF) from vulnerability to viability in Africa and Asia. Vulnerability is understood as a function of exposure, sensitivity and the capacity to respond to diverse drivers of change. We use the term viability not just in its economic sense but also to include its social, political, and ecological dimensions.

The V2V partnership brings together approximately 150 people and 70 organizations across six countries in Asia (Bangladesh, India, Indonesia, Japan, Malaysia, Thailand), six countries in Africa (Ghana, Malawi, Nigeria, Senegal, South Africa, Tanzania), Canada and globally. This unique initiative is characterized by diverse cultural and disciplinary perspectives, extensive capacity building and graduate student training activities, and grounded case studies from two regions of the world to show how and when SSF communities can proactively respond to challenges and creatively engage in solutions that build their viability. Further information on the V2V Partnership is available here: [www.v2vglobalpartnership.org](http://www.v2vglobalpartnership.org).

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