

Appendix 3

Unguja Island, Zanzibar

The Zanzibar archipelago is a semi-autonomous region of Tanzania, a county formed by the union of Tanganyika and the People's Republic of Zanzibar in 1964 after the British terminated the Zanzibar protectorate. Zanzibar is comprised of two main islands, Unguja being the biggest at 1,666Km², and Pemba, as well as many smaller islets. As of 2012 there was 896,721 people living in Unguja. This island archipelago is diverse in terms of its ethnic origins with a mix of Bantu, Swahili, Arab and Indian, whom predominately practice Islam. Zanzibar has a millennia old history of global trade that has strongly contributed to its unique cultural identity, including slaves, ceramics and spices, dating back to at least the 5th century and largely connected with the Gulf.

Traditionally Zanzibaris have never entirely depended on only one income, usually bringing together a range of income generating activities based on agriculture, animal husbandry, seaweed farming and fishing. In 2012 the largest contributor to Zanzibar's GDP was the service industry, largely linked to the huge growth in tourism, which in 2009 contributed a total 35% to the country's GDP. However, the economy is still agriculturally based. 25% of the population is employed by SSF while 98% of Zanzibaris rely on these seafood products for their animal protein intake (DoE Department of the Environment 2009). In 2015 Unguja 18.5% of the population were classed as poor, or living under the National monetary poverty line (Belghith et al. 2017).

Coral reef associated species such as emperors, snappers, rabbitfish, parrotfish, groupers and goatfish are most commonly landed and are the most important for small-scale fisher folk due to their accessibility (Jiddawi and Öhman 2002). There are also fisheries for small-pelagics such as anchovies and scad (Jiddawi and Öhman 2002) Department of the Environment 2009) which are often exported across continental Africa as far as the Democratic Republic of the Congo (*pers comm* by respondents for another part of this project), as well as larger pelagics like tuna, swordfish and kingfish. Together these species make up over 70% of Zanzibar's fishery landings (Jiddawi and Öhman 2002, DoE Department of the Environment 2009)

Today the SSF systems of Unguja are reported as degraded, fish biomass and biodiversity show decreases while there is admitted over-use of the coastal environment for resources i.e. coral reefs and mangroves (DoE Department of the Environment 2009, Crona et al. 2010). There are a range conservation issues currently impacting the system, for example the influx of migrant fishers, gender bias in trade, lack of law enforcement, destructive fishing gear and inadequate market systems (DoE, 2009).

SSF landings in Zanzibar are mainly consumed locally and high value seafood products like sea cucumbers, prawns, lobsters and seaweed currently reach the East Asian and European Markets, however, in very small amounts (approx. 200 Metric Tonnes per year) (DoE, 2009). Accordingly Zanzibar does not have as strong a connection to global seafood trade as of yet

(Jiddawi and Öhman, 2002), even so, trade liberalization since the nineties has contributed to the dissolution of many fishing cooperatives, from over twenty to just a handful, and cooperative shops, from over one hundred to only three (Maghimbi 2010). The tourist industry has profoundly impacted the fisheries and trade in the area introducing new market incentives, principles and financial systems.

Concepcion, Iloilo

The Municipality of Concepcion is part of the province of Iloilo, which lies on the southern half of Panay Island in the Western Visayas Region (Region VI). Iloilo's socio-economic and political history has been greatly shaped by colonization by western powers. The vast majority of the population is Christian, specifically catholic. For hundreds of years Iloilo experienced Spanish occupation (starting in 1566 and only ending in 1898) during which time the area began to economically prosper due to booming textile and sugar industries. After five decades of occupation by the U.S.A World War Two severely devastated the area and Iloilo experienced economic decline into the millennium. Today the capital of Iloilo is a hub for business, IT, real estate, shopping and medical centres, however north in the study area the economy is primarily based on the fishing industry.

The municipality of Concepcion, which includes all the fishing barangays in this study, boasts a population of 43,159 (as of August 2015, Philippine Population census). 36.8% of the population was classed as poor in 2012 according to a model based on income, expenditure and census data (PSA Releases the 2012 Municipal and City Level Poverty Estimate). Besides fishing, subsistence farming and cash crops like rice and corn support the local population however due to poor terrain in most of the islands these activities have traditionally been marginal. The Visayan sea is referenced as the world center of marine biodiversity (Ferrer 2009, 2016). In 2016 the most landed species at Concepcion port were *Sardinella lemuru*, *Sardinella gibbosa*, *Photololigo duvaucelii*, *Rastrelliger brachysoma* and *Selaroides leptolepis*; a mix of small pelgics and squid (National Stock Assessment Program 2017). However currently this hot spot of marine life is experiencing a dramatic depletion of resources (NEDA, 2011; Ferrer, 2009). The small-scale fishers who work in the area are experiencing, relative to the rest of Iloilo, widespread poverty exacerbated by crashing fish stocks. Disturbances and drivers include management problems (lack of law enforcement, fishing registration) uncontrolled coastal land-use, illegal fishing, conflict between larger-sale and smaller-scale fishers, rapid technological increases and inefficient market systems (Ferrer, 2009).

Since the early 2000s roads, bridges and airports in Iloilo have all been upgraded to facilitate more international marine food trade (NEDA 2011).The Visayan Sea region is one of the top exporters of seafood in the Philippines thus strongly connected to global seafood markets

(Hernando, 2005; NEDA, 2011). The SSF of the region market almost all landings, only negligible amounts are rejected by middlemen and used for household consumption (Hernando, 2005). In many parts of Iloilo fishers sell 100% of crab and squid meant to the export market e.g. Taiwan, China, Japan (Hernando, 2005); typically the high value products like these as well as sea cucumbers, live groupers and lobsters are exported abroad (Perez et al. 2012). The current political agenda in the Philippines aims to capitalize the increasing global seafood demand by developing fisheries towards cheap consumer exports as a means to pay back major external debts (Ferolin and Dunaway, 2013).