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More than Just Fishing: The Formation of Livelihood Strategies in an Urban Fishing Community in Mangaluru, India

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ABSTRACT *This article examines livelihood strategies of fishers and youth in an urban fishing community in India. Situated next to the busiest fishing harbour in Karnataka, I show how proximity to the city provides fishers and youth broader occupational choices to diversify their livelihoods by intensifying or taking on several fisheries-based activities, moving into the service sector, or getting urban jobs. Urban conditions have largely influenced how fishers and youth decide their livelihood strategy. The article shows how the fishers and youth have employed livelihood diversification via both accumulation and risk management strategies. Due to the lack of analysis drawing on urban fisheries case studies, the narratives of small-scale fisheries have largely been based on rural contexts, which often portrait small-scale fishers as either inefficient or vulnerable. This study, however, allows us to open up existing small-scale fisheries narratives to view fishers as active agents. Therefore, this study calls for more systematic emphasis on studying urban implications in small-scale fishing communities with important repercussions for urban fishers and their livelihood strategies.*

1. Introduction

Narratives in small-scale fisheries (SSF) research have been shaped by studies that predominantly discuss, explore and draw conclusions based on a context of rural fisheries (Allison & Ellis, 2001; Béné, 2003). The SSF voluntary guidelines prepared by Food and Agriculture Organisation (FAO) even define small-scale fishing communities as ‘commonly located in remote areas’ (FAO, 2015, p. xi). The assumption that SSF is rural livelihood activities has become dominant for scholars and policy makers guiding frameworks and research agendas within the field (Béné et al., 2016; Béné & Friend, 2011). This assumption has influenced the dominant narrative of SSF, in which small-scale fishers are perceived as a vulnerable group with limited access to capital, market and services needed to support their livelihoods.

Coastal habitats are, however, increasingly subject to urbanisation, both in the Global North and South (Cabral & Alino, 2011). Many areas that used to be rural fishing locations are today becoming part of urban expansion processes (Arabindoo, 2009; Hellebrandt, 2010; Kumar, Saravanan, & Jayaraman, 2014). Small-scale fishing communities have for quite some time been competing for space with numerous coastal economic activities such as the tourism industry, coastal gentrification for growing

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middle classes, harbour extensions and industrial complexes among other activities (Bennett, Dearden, Murray, & Kadfak, 2014; Colburn & Jepson, 2012). However, the influence of urbanisation on urban fishing communities remains unseen in policy and academia (Béné, 2006). Often, the effects of urbanisation are discussed in relation to increasing food consumption, rather than the production side (FAO, 2014, pp. 62–69). In academia, a recent evaluation of SSF literature in relation to food security and poverty alleviation by Béné et al. (2016, p. 185) confirmed the near absence of urban fisheries' case studies among 202 articles published 2003–2014 with the exception of a few cases on aquaculture in urban areas.

Rapid urbanisation processes underline the urgent need to investigate how fishers' experience and plan their livelihood strategies. This is because the dominant narratives and the limitations of urban fisheries examples have restricted the understanding of urban fishers' livelihood strategies. Moreover, it is important to expand our attention beyond poverty alleviation and food security, and involve, for instance, urban planning and urban development policies in the development of fisheries policy.

The general literature on urban livelihoods, although limited in comparison to rural livelihood studies, shows characteristics that differentiate them from rural conditions (Rakodi & Lloyd-Jones, 2002). In urban livelihoods, cash income and the monetary economy are likely to be even more important to secure housing, food and urban services (Rakodi, 2002b). Moreover, natural resources are often limited in comparison to rural areas (Hendriks, 2011, p. 114). This pressures urban dwellers to participate and engage in a multitude of entrepreneurial activities or become involved in the informal economy, generally via casual wage labour (Beall, 2002, p. 74).

In general, urban living offers a wider choice of occupations beyond primary production (Meikle, 2002, pp. 38–40), more extensive infrastructures and improved services (Rakodi, 2002a, pp. 27–28), as well as easier access to markets and consumers (Thara, 2016, p. 430). Monetary services such as banks, saving and credit associations are more available in the city (Verrest, 2007, p. 117). Diverse employment opportunities and availability of secondary and tertiary activities cater to different social groups and skills. Hence, diversification as well as specialisation may become key strategies for the urban poor. Urban labour markets also offer greater possibilities for women and youth (Foeken & Owuor, 2008). Furthermore, human capital (e.g. education, skill and health) comes to be one of the most important assets for urban livelihoods (Verrest, 2007, p. 116).

It is important to note that these characteristics do not totally differentiate the urban from the rural. Many rural areas share characteristics with areas that start to become urban and peri-urban (Rakodi & Lloyd-Jones, 2002). In Indian fisheries, the distinction of amenities, facilities and infrastructures between rural and urban areas have lessened in recent years. For instance, rural fishers have been able to modernise their fishing vessels and gear, along similar lines to those who live in urban areas (Subramanian, 2009). Moreover, since the 1980s rural fishers have benefited from better roads as well as improved means of transportation to improve the producer-consumer connection (Thara, 2016, p. 428). Rural fisheries have benefitted from increased access to markets, additional supply of labourers and expanded fisheries-related facilities, e.g. ice factories, which help improving the opportunities for livelihood diversification (Subramanian, 2009).

This paper contributes towards an improved understanding of how urbanisation influences fisheries livelihoods drawing on in-depth ethnographic research in an urban fishing community in Mangaluru, India. The Tota-Bengre case study shows, I argue, the relative success of how fishers and youth have adopted livelihoods diversification via both accumulation and risk management strategies during the economic expansion of Mangaluru city. Located opposite the largest fishing harbour in the state of Karnataka, Tota-Bengre has slowly transformed from exclusively depending on SSF to diversified livelihoods, including in large-scale fisheries, informal jobs and occasionally even professional jobs in the private sector or in government offices. This study calls for a more appropriate account of the implications of an urban context for small-scale fishing communities, with important repercussions for urban fishers and their livelihood strategies.

The paper starts off by reviewing existing SSF narratives problematizing the lack of attention these pay to urban conditions in Section 2.1. In Section 2.2, I review two relevant livelihood strategies for Tota-Bengre, and elaborate on the urban context, or rather lack thereof, of these two strategies. In

Section 3, I introduce an empirical account of urban fisheries in Mangaluru drawing on 8 months of fieldwork between 2013 and 2015, using a combination of ethnography and survey methods. I then discuss my results in relation to livelihood strategies among Tota-Bengre fishers and youth in the following section. In **Section 5**, I conclude by pointing to how Tota-Bengre illuminates limitations in existing SSF narratives with important implications for policy discussions and livelihood analysis.

2. Literature review

2.1. *Small-scale fisheries' narratives*

I select two dominant narratives associated with Blue Revolution policies and technologies (for a further discussion on Indian's Blue Revolution see Bavinck & Johnson, 2008), in relation to SSF development and the interpretation of SSF policies in developing countries. My reason for presenting these two narratives is to bring out discussions of how SSF livelihoods are perceived and situated in the larger context of policy development and global trends in resource management and open up a discussion about the room for, and location of, urban SSF in these narratives. The first narrative, presents the early view of SSF during the Blue Revolution, when fisheries mechanisation took place, while the second narrative depicts the later period when over-mechanisation has started to impact SSF sector.

The first narrative derives from the emergence of neoliberal fisheries policies intending to privatise and apply a market-oriented approach towards ocean resources worldwide. This narrative was first introduced in the 1950s and has come to strongly influence how fish resources are governed and accessed (Mansfield, 2004). Such fisheries policies have increasingly favoured large-scale/industrial fisheries at the expense of SSF often transforming self-employed fishers into fish workers (Sinha, 2012). Within this trajectory, the first SSF narrative portrays SSF as an *inefficient sector* which needs 'to be developed' through mechanised vessels, modernised fishing gear and techniques to improve productivity (Johnson, 2006; Subramanian, 2009). Fisheries' mechanisation has globally increased marine catches dramatically from less than 20 million tonnes in the 1950s to over 80 million tonnes in the 1990s (FAO, 2016).

The overuse of mechanised fishing gear and boats have, however, generated a negative impact on ecosystems and often resulted in difficult socio-economic conditions for small-scale fisherfolk. Consequently, developing countries have experienced widespread fish resource degradation, for instance, the decline of fish stocks in the Bay of Bengal (BOBLME, 2012) and off the East African coast (Daw, Cinner, McClanahan, & Maina, 2012). The transition towards large-scale fisheries come with substantial disadvantages for SSF leading to a second, contrasting narrative where fishers are portrayed as a *vulnerable sector*. This paper agrees with the critique made by Béné (2003) and Johnson (2006) that SSF has mistakenly been understood as 'a livelihood of last resort' or 'the livelihood of the poorest of the poor' (Béné, 2003; Cinner, Daw, & McClanahan, 2009). According to Béné (2003) we need to understand the underlying paradigms that connect poverty to SSF.

In line with Béné's critique (2003, pp. 967–968), poverty should not be explained solely as a direct relationship between low income and resource over-exploitation. Instead, becoming poor depends on multiple factors such as social exclusion, lack of formal education, entitlement failures, a lack of infrastructure and market access. Therefore, small-scale fishers should not be perceived as permanent 'losers' in times of socio-economic change, but rather as active agents intent on, and able to, chart their own pathways, for example, via livelihood diversification (Daw et al., 2012; Smith, Khoa, & Lorenzen, 2005), out poverty. However, they often lack the ability to influence decision-making in relation to resources, which results in their marginalisation (Béné & Friend, 2011, pp. 137–138). According to the vulnerability narrative small-scale fishers, therefore, suffer from an unequal distribution of power as well as a centralised fisheries management with limited room for participation and local customary regulatory guidelines (FAO, 2015).

In order to solve the problem of resource overexploitation and inequality, SSF framed in the second narrative as a livelihood activity that should be promoted to enhance ecological sustainability and social justice (Johnson, 2006, p. 751). As a consequence, the SSF literature has given higher importance to the right to fish as a human right and as a crucial part of gender equality (Allison et al., 2012; FAO, 2015;

Sharma, 2011) than to increase productivity. This is because the occupation is considered part of development policies for food security and poverty alleviation (Bavinck & Johnson, 2008; FAO, 2015). This point can be observed by the use of a passivising language, e.g. ‘marginalised’ or ‘vulnerable’, in the SSF voluntary guidelines (FAO, 2015). International guidelines and policies aim to ‘secure’ and ‘protect’ (FAO, 2015) SSF as a livelihood rather than trying to open up for other livelihood opportunities relevant to local job markets.

Although seemingly broad, the two narratives present specific views of fisher livelihoods, framing these as rural activities where small-scale fishing communities have limited or disadvantaged access to markets, and may ‘have poor access to health, education and other social services’ (FAO, 2015, p. xi). The second vulnerability narrative, in particular, has exaggerated rural conditions, where alternative livelihoods can be more difficult to imagine. Therefore, fisheries’ livelihood strategy frameworks do not sufficiently reflect the complexity of urban conditions in the Global South with their ongoing socio-economic transformations.

2.2. Characteristics of urban contexts for small-scale fisheries’ livelihood strategies

In order to develop a more systematic analysis of urban fisheries’ livelihood strategies, I draw on two livelihood strategies, diversification as risk management and diversification for accumulation, from the wider SSF literature. I then elaborate on how the urban context, or lack thereof, shapes the two livelihood strategies.

The first strategy is influenced by the vulnerability narrative in SSF. The original interpretation of livelihoods diversification² derives from Ellis’ (1998, p. 4) work on ‘the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle to survival and in order to improve their standards of living’. Ellis continues this discussion in relation to fisheries in Allison and Ellis (2001), where livelihood diversification is associated with the idea of risk management/reduction in order to survive in rural conditions. They argue that ‘diversification reduces the risk of livelihood failure by spreading it across more than one income source’ (Allison & Ellis, 2001, p. 383). In other words, diversification offers fishers buffer mechanisms to mitigate their risk. For rural households, risk management means the ability to earn income from alternative activities during times of hardship, e.g. drought or disaster. Diversification as a risk management strategy is also used to refer to the often observed preference of selecting low income livelihood activities characterised by high livelihood security over high income, but risky, livelihood activities (Ellis, 1998, pp. 12–14).

For the second livelihood strategy, I draw on Smith et al.’s (2005) idea of diversification for accumulation, i.e. a strategy where fishing remains an important strategy but where fishers have accumulated other assets allowing them to exploit new and more remunerative activities. The accumulation activities also include the intensification of fishing gear, vessel sizes and engines in order to achieve a higher return (Smith et al., 2005, pp. 370–374). The diversification as accumulation strategy is observable in many SSF case studies, mostly in rural areas around the world. According to Béné et al.’s (2009) work in rural Congo, fishers who engage in multiple activities, e.g. farming and fishing, have higher cash-income compared to fishers who derive their income only from fishing (specialists), and fishers who engage with other subsistence activities (generalists). Béné and his colleagues argue that fish should not be considered only as a source of cash income, but also as food security for rural households. However, households with fishing activity have an additional source of daily income which make them less ‘worse-off’ than households that engage only in farming activities (Béné et al., 2009, p. 116). Olale and Henson (2013) show similar results in western Kenya where fishers with one livelihood earn less income in comparison to diversified fishers. The finding also suggests that diversified fishers are better educated and thus able to access credit, and better able to connect to various fishing-related associations, compared to specialised fishers (Olale & Henson, 2013, p. 94). This helps them to earn more than the fishers who do not diversify.

The accumulation strategy is also present in the work of Daw et al. (2012) in West Africa. Their findings show that given good fishing infrastructure and more diversified economies, fishers are more likely to invest in fishing activities than move out of the sector. Their results show that wealthier

fishers are not likely to exit the profession because they have chosen fisheries in comparison to other available occupations. Poorer fishers, on the other hand, are willing to leave fishing if there are alternative livelihoods available. In rural Philippines, Fabinyi (2010) shows how fishers attempt to intensify their use of fishing gear and vessels, and invest in live reef fish trading, rather than diversify into tourism because tourism prevents fishers from accessing coastal land and fishing spaces. Fishers therefore often see tourism operations as benefitting mostly a small group of elites.

Even though the case studies on diversification as accumulation strategy draw from rural cases, a few implications can be discussed in relation to urban conditions where the infrastructure tends to be better and have a larger scale than in rural areas (Rakodi, 2002a). For Daw et al. (2012) better fishing infrastructure keeps fishers in fishing because they get better return after intensifying their operations. The motivation to intensify within fisheries for urban fishers is therefore based on improved ports and docking facilities, fish processing factories, well-equipped markets, etc., rather than only relating to better fishing vessels and gear. For Fabinyi (2010), restricted access to land hints to a similar burden among urban fishers since it impels urban fishers to change to other livelihoods rather than to diversify to agriculture or depend on farm subsistence like in rural contexts (Hendriks, 2011, pp. 113–114).

In comparison, the diversification as risk management strategy represents a situation where fishers are forced to take on alternative livelihoods to survive under difficult conditions. Therefore, the risk management strategy refers to the lack of choice in diversification. The diversification for accumulation strategy, on the other hand, points toward the possibilities of inclusive urban conditions where fishers often have the opportunity to invest in alternative livelihoods, and even combine new and old livelihood activities. They may also invest outside of fisheries for potentially higher return (Smith et al., 2005, pp. 372–374). The accumulation strategy is often adopted by fishers when they have a better ability to access credit, markets, infrastructure, education, and alternative livelihoods, which is more often the case for urban settings.

It is important to note that there is a lack of specific literature on the opportunity for women and youth to find jobs within and outside of the fisheries sector in urban areas, except a few studies on fish trading, which expand on urban connections and fisherwomen (Béné & Friend, 2011; Hapke & Ayyankaril, 2004; Overå, 2006; Thara, 2016). So far, non-fisheries livelihood studies have elaborated on how urbanisation may increase the availability of alternative sources of income for women and youth (Beall, 2002), as well as the pressures which condition them to work in order to contribute to household income (Foeken & Owuor, 2008). In addition to the main argument, I will attempt to enrich the analysis on women and youth livelihood strategies in this paper. Further studies are, however, needed.

3. Context and methods

3.1. Site

Tota-Bengre is home to approximately 6,000 residents spread across 982 households, with a Hindu majority³ as well as Christian and Muslim minorities. Tota-Bengre is located on a sand-spit on the opposite side of the Gurupura river from the harbour (see also Kadfak & Knutsson, 2017), a 10-min communal ferry allows for straightforward crossing. Within walking distance from the harbour are a number of government offices including the District Office, a centre for district administration, the Port Authority, the District Department of Fisheries (DoF) and national and commercial banks. Accessible within just a few minutes by car or autorickshaw from the harbour is the Mangaluru main fish and fresh-food markets, public transportation hubs for buses and trains, numerous shopping streets, schools and colleges. Mangaluru city centre is also well connected by road to the New Mangaluru Port (NMP), 10 km to the north and to the Mangaluru Special Economic Zone 17 km to the northeast. With increased population, peri-urban Tota-Bengre became a formal urban governance constituency when it was included in the Mangaluru City Corporation in 1995.

Unlike artisanal fishing communities in many rural areas in India, Tota-Bengre caught up with urban fisheries' development early on. Before 1974 Tota-Bengre's physical transformation largely

involved fisheries activities, such as a fish-processing factory and a one-day trawler-making yard. From 1967 to 1984, the Department of Fisheries and the Co-Operative Fish Marketing Federation introduced one-day trawlers as the first mechanised boats in Mangaluru. Two hundred and fifty of these one-day wooden trawlers were loaned to trained fishers who were obliged to pay back the cost of the boats (interview 25-04-2014). In 2015 Tota-Bengre fishers owned 10 purse seiners, 88 multi-day trawlers, 68 one-day trawlers, 34 gillnet boats and 6 *rani-bale* groups⁴ (information from a temple booklet). At this time there were approximately 700 small-scale motorised and non-motorised boats, or *doni* in Tota-Bengre (interview 2-04-2014).

Mangaluru has been the main hub of fisheries development in Karnataka. Responding to the national ambition of the Blue Revolution, Mangaluru fisheries' development has followed the neighbouring state, Kerala, where mechanised boats of the Indo-Norwegian project were first developed in the 1950s. The Kerala project started by introducing motors and advanced fishing gear to artisanal fishing people, turning the non-motorised boats to gillnet, Norwegian-style trawlers and purse seiners (Bhatta & Shetty, 2006; Sinha, 2012). Mangaluru fisheries development is observed through the expansion of fishing harbour facilities to the south and on Tota-Bengre waterfront as well as in volume of catches. This harbour expansion has claimed about half of the waterfront which used to be a common space for numerous small-scale livelihood activities, such as fish drying, net mending, small-scale boat mooring and for social gatherings (Kadfak & Knutsson, 2017). Presently, however, the area is hosting more than 1000 trawlers and purse seiners that were previously at the main harbour.

Mangaluru city is a growing middle-sized city in India. The city is known for its high standard of education and healthcare and has an increasing number of universities, hospitals, apartment complexes and big shopping malls, with much of the wealth built on remittances from workers in the Middle East (Cook, 2015). Migrant workers from rural Karnataka but also other states increasingly see Mangaluru as a city with significant job opportunities (Swathi Lekshmi & Johnson, 2013). The city's coastal stretch has become much sought after for development, particularly after the inauguration of the New Mangaluru Port in 1975. The Port has attracted industrial facilities to the area and later registered as a Special Economic Zone in 2005. From 2004–2013, the services sector grew strongly to almost double in size⁵ followed by a 288 per cent increase in the city footprint within the same period (Bhatta, 2017).

3.2. Methods

Based on three visits during which I stayed for a total of 8 months between 2013 and 2015 in Tota-Bengre, I explore stories of how individuals and families identify and form livelihood strategies in relation to the city expansion into this peri-urban area. The mixed methods research design consisting of qualitative and quantitative data collection included ethnography, semi-structured interviews, as well as household and waterfront surveys. Throughout the fieldwork, I was accompanied by three research assistants (not all at the same time) to translate Kannada/Tulu, the local languages of Karnataka and Mangaluru, to English and vice versa, and to assist with surveys and data collection. Ethnography through participatory observation helped me understand how different social groups of fishermen, fisherwomen and youth conducted their everyday livelihoods. Semi-structured interviews were conducted after the local residents became familiar with my presence as a researcher, to ensure a flow in the dialogue regarding their choice of livelihoods as well as their future plans. Sequential visits to the field helped me to follow the same groups of people and to observe different trajectories over time within the same professions.

For the household survey, 155 out of 982 households (approximately 16% of all households) were randomly sampled based on a map of Tota-Bengre.⁶ This is because the household survey gives information about the average number of household members, membership in fisheries related associations, type of ownership of fishing vessels and livelihoods. The waterfront survey was conducted over 2 weeks, with 388 purposively selected responses from waterfront users. Household and waterfront surveys were conducted towards the end of the final fieldwork visit (January to March 2015) to confirm and gain access to quantitative information at community level. The waterfront survey showed time spent at the waterfront and the usage of waterfront space

by different livelihoods. The waterfront survey was conducted to get a snapshot of Tota-Bengre waterfront where most fisheries' activities take place.

Ethnography offers in-depth knowledge on how individual fishers and youth address and understand changed livelihood strategies. The personal stories which emerged from the ethnographic methods were complemented with results from the waterfront and household surveys since the aggregate survey data provided overall trends for the village as a whole. The survey results therefore contributed to the analysis by linking individual reasons for livelihoods strategies to an overall picture, which I attempted to confirm at village level. It is important to note that the survey results do not explicitly relate gender to occupation but allow for general assumptions to be made. Fish sellers, carriers and cutters are usually women.

4. Livelihood strategies for an urban fishing community: examples from Tota-Bengre

In this section, I organise the analysis into two parts: 1) strategies among active fishermen and 2) strategies among women and youth. My intention in analysing these two groups separately is to show how each group responds to challenges and takes up opportunities from urbanisation differently. Apart from direct fishing activities, urban conditions also increase fisheries-related jobs and alternative urban jobs for the benefit of especially women and youth. By looking closely at how fishers and youth strategise around livelihoods in urban conditions, this section shows how opportunities are actively seized upon in the urban economy. This study uses community as a unit of analysis, which is different from the common household focus of livelihood studies (Rakodi, 2002b, pp. 6–8). As such, it allows me to include women and youth groups otherwise neglected in fisheries studies.

4.1. Fishermen and their livelihoods strategies

Most Tota-Bengre fishermen employ the diversification as accumulation strategy, with relatively fewer cases of diversification as risk management. Generally, due to the proximity to the city, Tota-Bengre fishermen have been benefiting from the diversification as accumulation strategy by intensifying fishing vessels and gears and exploring multiple activities, largely within fisheries. These findings however come as a contrast to the discussion in the second narrative which portrayed small-scale fishers as vulnerable. In the Tota-Bengre example, fishermen are not losing out but instead continue fishing with high returns. I will discuss below how the urban context has influenced the way fishermen plan their livelihoods.

One-day trawlers, multiday trawlers and purse seiners are the main fishing crafts and gear combinations that Tota-Bengre fishermen use as part of their accumulation strategy. As mentioned in the context section, Tota-Bengre fishermen have benefitted from being at a central location in the first mechanisation wave. The fishermen have been learning about the new techniques and joining the introductory programme of modernising fisheries earlier than other fishing communities outside of Mangaluru.

One-day trawlers employ the largest number of fishermen in Tota-Bengre (24.52% according to the household survey). The one-day trawler is considered a medium fishing operation with a crew of 4–5 fishermen. This type of fishing is affordable for small-scale fishermen through the formation of partnerships with people in Tota-Bengre. Tota-Bengre fishermen benefit from the easy access to markets to sell their catches on a daily basis. From observations, the neighbouring rural areas have fewer one-day trawlers due to greater distance from the fishing harbour in comparison to Tota-Bengre. Among the 68 one-day trawl owners in Tota-Bengre, I came across Sukrit,⁷ a man in his early 30s who decided not to continue with college after high school. Born into a fishing family, he learnt how to fish from his father. He has been saving up by working in his father's *doni* for a few years before investing in a one-day trawler together with four friends. Sukrit has successfully intensified by owning a share in a one-day trawler. It gives him a higher income in comparison to fishing with *doni*.

Among the 88 multiday trawlers and 10 purse seiners, there were two types of ownership: total ownership or shared ownership. Total ownership is among the well-off fishermen in the community. Shifting from small-scale to medium and large-scale modernised fishing techniques, Tota-Bengre fishermen have been benefiting from the possibilities of inclusive urban conditions in the past decades. The effects of urbanisation have influenced the way in which Tota-Bengre fishermen employ an accumulation strategy in their approach to livelihood diversification. Due to industrialisation and the high value fishing industry, the city draws large numbers of migrant workers from outside of the state. This gives Tota-Bengre fishermen the possibility to hire workers for their fishing boats. Moreover, Mangaluru harbour has crucial infrastructure not available elsewhere, e.g. fish processing factories, auction halls, and icing factories for export. Due to the close proximity Tota-Bengre fishermen have been able to benefit from that infrastructure. Unlike conducting fishing activities in rural areas, one-day trawlers, purse seiners and multiday trawler owners can easily get credit from banks and other financial institutions in or close to the harbour, e.g. the Fishermen Co-Operation Society, the Trawl Association and the Purse Seiner Association. Fisheries facilities have even spilled over to Tota-Bengre village with four private trawler-making yards, five trawler-repair yards and a few temporary net-mending services.

The proximity to Mangaluru fish market enables new business opportunities for Tota-Bengre fishermen. The fishermen are able to strike deals with potential partners in and outside of Mangaluru during their time spent at the harbour where personal connections are vital. One of many examples is a family of three brothers where the oldest and the middle brother own several *donis* and gillnet boats, while the youngest brother owns a share in a multiday trawler. The oldest brother started to partner with Kerala gillnet fishermen by registering Kerala boats in Karnataka waters under his name. With this partnership, the Kerala fishermen were able to fish in Karnataka and sell fish at the harbour for a better profit. The profit was divided according to an agreement (interview 25-04-2014). Using a similar strategy, a few families rent out their *donis* and fishing gear to fishermen from outside of Tota-Bengre to fish from the waterfront. Slightly bigger than *donis*, gillnet operations require a few more fishermen on board. Local fishermen find workers among migrants who live temporarily within this peri-urban area. This generates additional opportunities for local residents who can accept tenants who rent a house or sometimes just a room (about 14% are migrants in Tota-Bengre according to the household survey).

The accumulation strategy enables fishermen to keep small *donis* and *rani-bale* boats for use during the monsoon season when other boats are not allowed.⁸ With limited competition, fish catches receive better prices during this limited period. This coincides with my observation that large numbers of *doni* and *rani-bale* boats were moored and left unused during the dry season. Fishing with *doni* has in this manner becomes a secondary fishing activity. It gives a higher income during the seasonal fishing ban but fails to be competitive during the rest of the year when *doni* fishing usually loses out to large-scale fishing. This accumulation strategy therefore shows how fishermen participate in several fishing-related livelihood activities throughout the year.

The diversification as accumulation strategy in Tota-Bengre additionally illustrates the possibility of inclusive urban conditions where fishers can make use of old and new livelihood strategies. For many, working in SSF is a preferred lifestyle. For example, I came across two *doni* partners in my first fieldwork in 2013 who subsequently invested in gillnet and multiday trawlers during the 2 years of my fieldwork. Despite being successful in other types of fishing, these two fishermen continued their partnership and operated the *doni* on a daily basis. One of them mentioned that 'SSF is my lifestyle, I like going out fishing with my mates' (interview 20-04-2014). They continued to explain that they loved to leave home early in the morning, to put fishing nets in the rivers or nearshore and pick them up about dawn, before selling the catch at the SSF auction. Having their own schedule and choice of fishing techniques gave them freedom in comparison to other livelihood activities.

However, there are some examples of Tota-Bengre fishermen that employed diversification as a risk management during times of hardship. These fishermen are forced to diversify from small-scale fisheries to other type of fishing, or to leave fishing completely. One example is uncle Vithun, a man

in his mid-50s, who has operated a small *doni* with a friend for over 30 years but was forced to work on a friend's one-day trawler after a few months of bad catches. The decline of fish pressured Vithun to leave his own boat, and become fishworker on someone else's boat to survive the season (interview 10-03-2014). Another example is Chandra, who was forced to sell his *doni* many years ago due to a lack of income to feed his growing family. He saw growing demand for large-scale boat repairs and decided to start a small business building temporary roofs for boat repair yards (interview 9-03-2015). Other alternative occupations for those who have left fishing completely were, for example, small shop owners, mechanics, construction workers, daily-wage workers, and autorickshaw drivers. This group consists of approximately 33 per cent of all households in Tota-Bengre according to the household survey.

Urban conditions provide Tota-Bengre fishermen with choices to diversify their fishing practices ranging from small-scale fishing to multiday trawling, and they can carry out fishing full-time or part-time. The wide range of diversification strategies illustrates that there is no real winner or loser during urban transformations. In fact, a majority of Tota-Bengre fishermen have benefitted from urbanising fisheries. Easy access to market and harbour facilities is the key condition for urban fishermen to continue their fishing livelihoods, and this is in contrast to rural fishing practices. Moreover, being fishermen in urban areas provides easy access to fisheries-related associations. According to the household survey, 194 fishers in the 155 sampled households are members of 12 associations for large- and small-scale fisheries. By being a member of an association, fishers can benefit from low interest loans and various welfare programmes. For instance, members of the Fisheries Federation can access the SSF auction market where the price (per kilogram of the same species) is higher compared to the large-scale fisheries auction. SSF fishermen also have the option to sell directly to restaurant owners or middlemen, again at a higher price.

To sum up, the majority of livelihood strategies of Tota-Bengre fishermen are formed through diversification as accumulation, where the fishermen benefit from the availability of choice and opportunity. However, the evidence also includes cases where Tota-Bengre fishermen have taken up diversification as risk management during difficult times. Risk reduction employed by these small groups of fishermen continues to benefit from urban conditions, such as moving into activities connected to large-scale fisheries or other services. This illustrates the wider availability of livelihoods, in comparison to many rural examples (see Olale & Henson, 2013).

4.2. Livelihood strategies among women and youth

In contrast to rural fishing communities where fisherwomen and youth livelihoods are generally observed as less significant income contributors to the household in comparison to men (Smith et al., 2005), urban conditions provide a wide variety of job opportunities within and outside fisheries for both women and youth. In Mangaluru these job opportunities are available in an area where a large part of the population has at least a good, basic education to further widen the scope of employment. The empirical data shows that both fisherwomen and youth adopt both accumulation and risk management strategies as livelihood strategies.

More than 50 per cent of women have fishing-related livelihoods according to the household survey. The dried-fish business, fish-carrying, fish-selling and fish-cutting are common livelihoods through which older women eke out livelihood opportunities. Dried-fish activities used to take place on the Tota-Bengre waterfront but have been declining due to difficulties in accessing fish, increased fish prices and reduced space as the fishing harbour was expanded. The waterfront used to host 65–70 dried-fish huts 15 years ago (interview 14-03-2014), but by early 2014, less than 35 huts remained (observation). These pressures have led women previously engaged in drying fish to diversify to other livelihoods. However, with an average age of 54 (sample of 21 women involved in drying fish in the waterfront survey), many older women decided to stop working completely due to old age. A few younger women have been forced to find work in the harbour.

The Mangaluru harbour and city centre offer heterogeneous livelihood choices that fit different capacities and preferences for fisherwomen. Similar to the study by Weeratunge, Snyder, and Sze

(2010) and Hapke and Ayyankaril (2004), many of fisherwomen from Tota-Bengre are engaged in market activities. Many of the fish carriers, sellers and cutters working at the harbour that I met were widows, middle-aged or elderly women with less education and from poorer households. For example, aunty Lakshmi is a widow in her late 40s. She has recently switched after working in a fish-processing factory and carrying fish for the past 28 years. She told me that fish carriers needed to be present at the harbour when trawlers and purse seiners arrive early in the morning. The female fish carriers often form informal groups of about 10. A group leader maintains contact with multiday trawlers/purse seiner captains to negotiate the work each day. One group of fish carriers unloads fish from the vessels to three-wheelers and load ice back into the boat. The fish carriers earned between 150 and 1500 INR daily (interview 9-12-2014). Fish sellers buy fish directly from the harbour and sell at fish markets throughout Mangaluru city. Fish cutters, however, sit in the provided space at the end of the harbour to cut fish for customers including households and restaurants.

Younger women with better education prefer to leave fisheries-related livelihoods by looking for jobs in the city, such as clerks in government offices, salespersons or beauticians in shops, or employees in private companies. Seeing the increasing job opportunities in the city, young educated women take on an accumulation strategy for their livelihoods. A city job means a new household dynamic for younger couples, as wives can earn income independently from their husbands. For instance, Deepika is 26 years old and married to a one-day trawler fisherman. She has a young daughter. Deepika is home during the day and works as a salesperson at the biggest shopping mall in Mangaluru close to the harbour 6 to 10 pm. Her husband was not keen on letting her work due to safety concerns when walking to the ferry at night. However, she told me that she would rather risk working at night than being bored at home looking after their daughter (interview 16-12-2014).

An urban job is attractive for younger people since it is seen as stable and less physically demanding, in contrast to fisheries livelihoods seen as demanding and situated in a relatively dirty environment. Urban dream jobs among educated youth include working in private or government offices, IT companies or office jobs for industrial companies. Therefore, education has been the key for upward mobility, both by fisher parents and the youth themselves. They have seen many examples of people who are doing well in universities and getting jobs in big cities like Mumbai and Bengaluru, or even moving abroad to the Middle East. Higher education is attainable, both in terms of cost and logistics for many youth, primarily due to the existence of a wide range of city colleges and universities in Mangaluru. Some well-off fishing families even bought a second home in Mangaluru city just for their kids to be closer to good schools.

The admiration for urban lifestyles has kept a large group of educated youth waiting for the right opportunity to secure a dream job in the city. This is similar to the 'timepass' (Jeffrey, 2010, pp. 465–466) where youth (men in this case) would hang out during extended unemployment periods after college waiting for the right opportunity. Doing timepass in groups helps young men overcome the anxiety from rapid change after graduation from college. The uncertainty that comes with unemployment excludes them from entering a secured stage of adulthood. Male and female youth in Tota-Bengre are similarly doing timepass, but relying on slightly different strategies. Males get into fisheries, which are observable in public places, while females stay at home or possibly work part-time as tutors.

For example, one of my local assistants has been waiting for the right job for more than 3 years after her college graduation. For her, waiting for the right job was essential. She preferred to wait, by living minimally with her extended family rather than settling for any service job. An interesting remark is that educated female youth has never joined any fisheries-related livelihoods, but rather wait for permanent jobs in the city even though these might not be forthcoming. Once I interviewed a father who owned a multiday trawler and had a daughter who took a break to visit home from job-hunting in Bengaluru after her college graduation. The father mentioned that 'my daughter needs to study hard, because there are no other options for females here in this fishing community. But boys can just go into fishing' (Interview 20-04-2014).

Most unemployed male youth hangs out at their ‘friend-group huts’.⁹ While hanging out at these fishing huts, they are slowly integrating into fisheries by informally joining fishing trips on their relatives’ boats or helping out with net mending along with more senior fishermen. Often, when I hung out in the friend-group huts during afternoons, I had long dialogues with recently graduated men, who informed me that they just came back from posting job applications and leaving resumes with various companies. Young men adopt risk management as diversification strategy by entering into a range of fisheries livelihoods while waiting for urban jobs. For instance, they have been working as accountants for trawlers, one-day trawler owners or workers, contractors, buyers (for trawler-building yard), or even as boat-taxi drivers. Some educated youth finally get their dream job in line with aspirations and their educational degrees. But for many, the uncertainty of getting office jobs is growing bigger over time. Many young men have come to accept that fishing is their main livelihood and source of income when they reach a certain age or start a family. For female youth, the waiting time may end when they get married and become housewives at which point they never have an independent job.

To conclude, fisherwomen and youth adopt both risk management and accumulation diversification strategies in Tota-Bengre. The older and less-educated fisherwomen have been forced to manage the risk of losing beach space for drying fish by becoming daily wage workers at the harbour, or have stopped their fish-drying jobs completely. Similarly, while waiting for better job opportunities, many young men end up taking low risks, but also accept low-income work in fisheries, rather than waiting for higher pay with higher risk in the urban, corporate sector. Having fisheries-related livelihoods to fall back on is a critical reason why youth in Tota-Bengre are able to ‘timepass’ and wait for other livelihoods. At the same time, for a growing number of educated female and male youth, there are more opportunities for them to get jobs in the service sector in Mangaluru city. Youth benefit from being close to the city and trying out different career paths. Access to the market facilities at Mangaluru harbour enables fisherwomen to use the accumulation strategy to move between being fish sellers, fish carriers and fish cutters.

5. Discussion and conclusion

This paper has been motivated by the absence of urban fisheries examples in the relevant academic literature and an absence of the often different conditions between rural and urban SSF livelihoods. It is important to note that the analysis in this paper is based on only one case study. However, being a peri-urban area next to the rapidly urbanising city of Mangaluru, Tota-Bengre village is likely to share many similar processes of livelihood strategies with other growing, urbanising fishing communities around the world. In this sense, Tota-Bengre is not an unconventional case for urban fisheries in the Global South.

The Tota-Bengre example raises questions around how SSF is viewed as a vulnerable sector with limited access to capital, markets and services in support of livelihoods. With their density of economic activities, urban conditions offer more diversified job opportunities and business contracts in comparison to those in rural areas. Urban fishers have comparative advantages when being at the centre of economic development with better access to centralised fisheries’ facilities. For urban fishers, an accumulation strategy means the ability to access support and protection from fisheries associations, as well as the ability to branch out their livelihood activities within and outside fisheries. Therefore, livelihood strategies for urban fisheries, as seen in Tota-Bengre, paint an indistinct picture of winners and losers in contrast to conventional narratives. This is because Tota-Bengre fishers are understood as ‘active agents’ who adapt to urban conditions highlighting key differences to the common perception of SSF as a marginalised group in society. Furthermore, being a loser or a winner in Tota-Bengre is not a static condition, as some fishermen may lose out in SSF, but later gain from alternative livelihoods. Learning from Tota-Bengre, SSF narratives need to reflect on the complexity of urban conditions and livelihood strategies as urban fishers are part of, and even engage with, rapid socio-economic change.

The empirical data show that the youth and adult fishers in Tota-Bengre have employed diversification via both accumulation and risk management strategies. Urban livelihood strategies project multiple layers of complexity. Therefore, the economic expansion of Mangaluru city has shaped fisher experiences and also provided assets and resources for the fishermen to accumulate for diverse activities. Fishermen in Tota-Bengre are thus doing rather well, in comparison to neighbouring communities in terms of intensifying their fishing vessels and gear. According to the findings, fishermen use more than one strategy at a time, depending on opportunities at hand in swiftly changing circumstances. Some fishermen continue to take on small-scale fishing, as a preferred lifestyle, with high return seasonally.

Reasons for those who adopt risk management as a livelihood strategy include land and economic pressures as well as the decline of the natural resource. All these factors prevent them from earning enough for their families. Consequently, this group is forced to leave their current livelihood and move into other activities which may be temporary or permanent. For instance, the older fisherwomen have attempted to mitigate risk by becoming daily wage workers at the harbour, while some of the male youth have taken on small-scale fishing as risk mitigation when city jobs have not worked out. Some of the non-profitable small-scale fishermen also move to large-scale fishing, as wage workers, or move out of fisheries completely. Risk management as a strategy in Tota-Bengre, however, differs from rural examples (Allison & Ellis, 2001) since urban conditions provide this group varied livelihood options, both permanent and seasonal ones, which are often lacking in rural area.

Tota-Bengre parents often do not want to see their children continue within fisheries due to the poor physical working conditions and uncertainty of catches. Therefore, most of the parents I interviewed indicated a willingness to invest in the education of their children. Many youth have successfully left fisheries completely by using college/university degrees to get jobs in the city. However, fisheries remain an accessible livelihood also for some of the youth. This is because fisheries become, for many, a fallback option while waiting for the right job or a suitable occupation for those who fails to get the required degree. This finding is not an uncommon conclusion within SSF research in both rural and urban areas (see also Trimble & Johnson, 2013). However, from the discussions with Tota-Bengre parents, the proximity to the city allows Tota-Bengre children to access higher education opportunities, permitting them to aspire for city jobs.

The Tota-Bengre case helps shine a light on policy discussions in urban fisheries. Policy recommendations in rural SSF tend to concern poverty alleviation, food security and improvements to the right to fish, and advocate for improved gender equality. In order to improve the situation for urban fisheries, policymakers require an understanding of urban land politics and the importance of city infrastructure. Securing land for habitation is another crucial element in livelihood strategies connected to the city (Kadfak & Oskarsson, 2017). Furthermore, urban fisheries development requires better access to markets, harbour facilities, sources of credit and fisheries associations, all components to enhance urban fishers' accumulation strategy.

From this study, I conclude that SSF literature can potentially benefit from the emerging analysis of livelihood strategies from the urban livelihoods literature. Aligned with Beall (2002)'s analysis, Tota-Bengre fishers engage in a multitude of entrepreneurial activities by hiring fishworkers for their small boats. Moreover, the urban livelihoods literature suggests that urban dwellers are often involved in informal economic activities such as casual wage labour. This argument has been exemplified by the increasing number of wage labourer among Tota-Bengre fisherwomen and fishermen in the harbour area. Furthermore, education has become the main mechanism that influences and secures livelihoods in the urban labour market (Rakodi, 2002b), which is discussed in Tota-Bengre case. The availability of service or industrial modes of production in Mangaluru and around the harbour provides better job opportunities that fit different skills and the educational backgrounds of Tota-Bengre's residents.

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Notes

1. I use the term fisher(s) to describe both men and women who work in fisheries on the boats but also in usually land-based processing and sales activities. Consequently, fisherman refers to male-fishers to indicate gender.
2. I agree with the definition of 'diversification' provided by Allison and Ellis (2001) and Ellis (1998), which refers to diversification within and outside of fishing activities, but not to leave fishing completely. Béné (2003, p. 957) uses 'alternative' income/employment for livelihood opportunities outside of fisheries.
3. It is important to note that the caste dimension is evidence in relation to fisheries livelihoods. Some people from certain castes (through caste networks) whether men, women or youth, find it easier to support themselves as fishers than people of other castes (see also Budhya & Benjamin, 2000).
4. Rani-bale or queen-net is a special large-scale fishing net that operates similar to purse seiner except the procedures are done manually. The rani-bale boats are stored in permanent shelters across the waterfront during the dry season and only launched during monsoon period.
5. Directorate of Economics and Statistics, Government of Karnataka, retrieved from <http://des.kar.nic.in/docs/sip/SDP%202017%20reconcile.pdf>, access date 8-03-2017.
6. The Tota-Bengre map was created by a combined transect walk and open source satellite imagery.
7. Names of local residents are changed for anonymity.
8. In Karnataka, large-scale fishing boats are banned from June to August to protect the spawning season for marine species.
9. Friend-group huts are the places where fishermen mend fishing-nets, discuss politics and livelihood strategies, and also for relaxation.

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