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ARTICLE



The influence of ‘space’ on migrant fisher livelihoods

Innocent N Wanyonyi^{id a,b,c}, Andrew Wamukota^d, Victor Mwakha Alati^{e,f}
and Kennedy Osuka^{g,h}

^aSchool of Natural Sciences, Linnaeus University, Kalmar, Sweden; ^bWestern Indian Ocean Marine Science Association (WIOMSA), Zanzibar, Tanzania; ^cCoastal and Marine Resource Development (COMRED), Mombasa, Kenya; ^dSchool of Environmental and Earth Sciences, Pwani University, Kilifi, Kenya; ^eKenya Marine and Fisheries Research Institute, Mombasa, Kenya; ^fDepartment of Life Sciences, University of Roehampton, London, United Kingdom; ^gCoastal Oceans Research and Development – Indian Ocean (CORDIO) East Africa, Mombasa, Kenya; ^hDepartment of Environment and Geography, University of York, York, United Kingdom

ABSTRACT

Understanding the migration of fishers through the spatial window clarifies the critical role the phenomenon plays in artisanal fishers’ livelihoods. Migrant fishers’ ‘space’ refers to the complete spectrum of spatial characteristics at the destination, which include fishing ground, landing site, market, social relations and integration into society. A multiple methods approach was employed to evaluate migrant fishers’ ‘space’ at four destinations in coastal Kenya from October 2010 to March 2011. Results point out to the importance of spatial characteristics at the destination landing sites in influencing fishers’ migrations. The social relations of migrant fishers with local communities play a critical role in the integration of migrant fishers by enabling them to maintain a ‘place’ in the fishing practice. The maintenance of ‘place’ provides migrant fishers with access to the resources thereby contributing to migrant fishers’ life sustenance. Therefore, understanding fishers’ ‘space’ allows for a better understanding of the critical roles of fisher migration in sustaining coastal livelihoods.

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KEYWORDS

Market; migration destination; social relations; ‘space’; sustainable livelihoods

1. Introduction

Coral reef fisheries support millions of livelihoods around the world (Donner & Potere, 2007). The coastal and marine fisheries of East Africa (Kenya, Tanzania and Mozambique) are predominantly small-scale (artisanal), characterised by multiple gear use, targeting multiple species and contributing over 80% of the total marine production to support thousands of livelihoods in the Western Indian Ocean region (Fondo, 2004; Jiddawi & Ohman, 2002; Mangi et al., 2007; Obura & Wanyonyi, 2001; Paula et al., 2015).

Fishers in East Africa have migrated over the years (Glaesel, 2000; Jiddawi & Ohman, 2002; Wanyonyi et al., 2016b) in search of more productive fishing grounds, yet the phenomenon remains least understood in terms of the social and economic pathways through which fisher migration influences livelihoods. Recent literature indicates that fisher migration enhances migrant fisher’s livelihoods by expanding access to fisheries resources (Wanyonyi et al., 2016a). Migrant fishers rely on available livelihood assets to

CONTACT Innocent N Wanyonyi  innocent_ke@yahoo.com

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enable them act within, challenge or change rules governing access and use of resources at migration destinations (Allison & Ellis, 2001). This paper empirically evaluates migrant fishers’ ‘space’ in terms of 1) the influence of socio-economic factors and markets at destination and 2) the role of migrant fishers in local fisheries in terms of organisation of fish trade, the number of traders, type and quantities of fish, and other fish marketing system dynamics.

1.1. Conceptualising migrant fishers’ ‘space’

The paper applies the sustainable livelihoods framework (Figure 1), which is centred on individual assets, activities made accessible by such assets, and the mediating processes (the institutions, regulations and organisations altogether referred to as Policies Institutions and Processes or PIPs) that govern access to assets and activities (Allison & Ellis, 2001). Assets include natural, physical, human, financial and social capital (De Haan, 2008). Natural resource-based livelihoods reflect the seasonal and cyclical trends of resources and the associated complexity of users’ adaptive strategies that enable them to accumulate assets (Allison & Ellis, 2001).

Adaptive strategies among fishers include diversifying the portfolio of their activities and migrating. Access to livelihood assets is a key factor in fishers’ decisions to migrate (Wanyonyi et al., 2016a). Migration is in turn influenced by social, economic and spatial

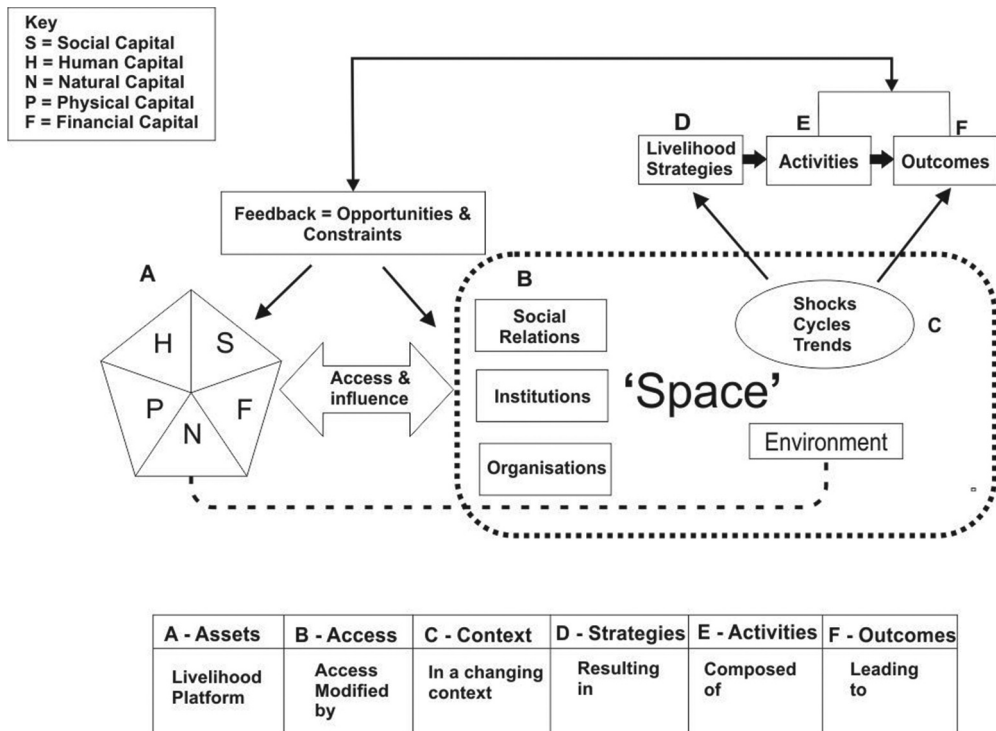


Figure 1. Sustainable livelihoods framework.

dynamics, which we refer to as ‘space’ (King, 2011). These are the PIPs at destination that influence access to the fishing grounds, fisheries resources and fish markets among other critical factors to fisher migration. We postulate that migrant fishers’ activities take place within a spectrum linked to a particular location and its boundaries with the associated socio-cultural, economic and environmental characteristics. Therefore, fishers expand ‘space’ beyond the boundaries of their community of origin by migrating. We link migrant fishers’ activities to their outcomes within this expanded ‘space’ they operate in.

2. Methodology

2.1. Study location and context

Fishing on the Kenyan coast is organised by fish landing sites where local communities control the use adjacent fishing grounds. Migrant fishers, following understanding with local fishers, also use some of these landing sites regularly for 1–7 months, between November and April during the North-East Monsoon season (NEM) (Fulanda et al., 2009; Wanyonyi et al., 2016b). The four landing sites under study – Kipini, Gazi, Shimoni and Vanga-Jimbo, as shown in Figure 2 – are important migrant fishers’ destinations in Kenya (Wanyonyi et al., 2016b). They are mainly rural, each with a fish landing and trading centre. Kipini and Vanga-Jimbo are the most remote whereas Gazi is the most accessible. Gazi, Shimoni and Vanga-Jimbo share fishing areas from Gazi to the Kisite-Mpunguti Marine Park and Reserve and the Boza-Mahandakini Collaborative Management Area (CMA), all within the Pemba channel. The Kipini fishing area extends from Ras Tenewi to Funguni.

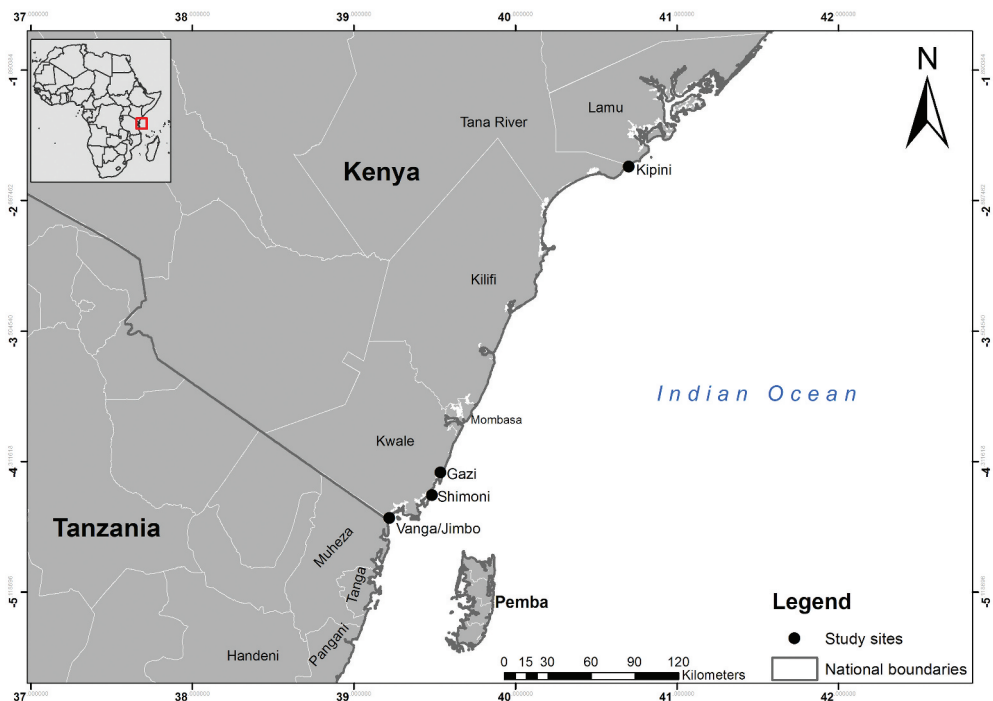


Figure 2. Location of the four landing sites along the Kenyan Coast.



Traditional Tanzanian sailing boats in operation in Kenyan waters

2.2. Data collection

The study used a mixed methods approach combining quantitative and qualitative methods to gather data between October 2010 and March 2011. Preliminary data was collected through key informant interviews with local leaders, Beach Management Unit (BMU) leaders and fisheries officers to gather general information on local fishery characteristics at the landing sites. These included the number of fishers, number and types of vessels, main gear used and migrant fisher concentrations. Fisher logs were used to record gear used, catch, species and effort. At each location, fish trader logs were used to record main species bought and their destination markets.

2.3. Socio-cultural aspects of migrant fishers' 'space'

Key informant interviews (KIs) were held with migrant fishers, local fishers, as well as local elders, village leaders and local government officials (e.g. fisheries officers). The key informants were selected based on their experience in respective fishing operations and referrals during fieldwork. Interviews were held at the four landing sites (Vanga-Jimbo, Gazi, Shimoni and Kipini) which are among the important migrant fisher destinations in Kenya (Wanyonyi et al., 2016a). KIs were used to identify social relationships between migrant fishers and other stakeholders in the local fishery.

2.4. Economic aspects of migrant fishers' 'space'

The role of migrant fishers in the local economy was analysed based on the organisation of fish trade, the number of traders, type and quantities of fish, the market value of different taxa and markets, and the level of commercialization. The distribution of economic benefits, prices and market extent for different taxa were determined. Prices by taxa at different destination sites were descriptively analysed and displayed as boxplots.

2.5. Data analysis

Key informant interviews data were content analysed to identify social relationships between migrant fishers and other stakeholders in the local fishery. Since the data were not normally distributed even after log-transformations, Kruskal-Wallis one-way ANOVA on ranks was used to test whether there were differences in price of fish sold between landing sites, fish species groups and distance to market. Mann-Whitney U sum tests were used to test whether there were differences between the price of fish sold, market categories and respondent gender. To isolate the groups that differed from others, the Dunn's method for pairwise multiple comparisons was applied. Prior to this, fish species were categorized into five groups; from those commanding the lowest price and demand to those commanding the highest viz: 1) sharks, rays and eels; 2) molluscs (octopus, squids); 3) pelagic species (barracuda, cobia, halfbeaks, jacks and trevally, needlefish, small pelagics and tuna/mackerel); 4)



Tanzanian canoes in fishing operation with ring nets

demersal fish (box fish, emperors, goatfish, groupers, gurnards, parrot fish, rabbit fish, snappers, sweetlips/grunts and unicorn fish); and 5) crustaceans (crabs, lobsters and prawns). Markets were categorised as: 1) rural and 2) urban based on population size and distance to major cities or towns. The level of control of local fisheries was inferred from the estimated catch rates, fish supply and market value.

3. Results

3.1. Spatial characteristics of migrant fishers' 'space'

Table 1 shows predominant fishing gear by migrant fisher, fishing duration and sizes of fishing areas at the four landing sites. Migrant fishers used different gear types with hook and line predominantly used in Kipini and Shimoni; ring nets in Gazi and Vanga-Jimbo and shark nets in Gazi, Shimoni and Vanga-Jimbo. Crew size varied at each site with a range across all sites of 2–30 crew members. The highest maximum number of fishers was found at Gazi (30 fishers) and the lowest maximum at Shimoni (5 fishers).

The lowest and highest fishing duration was found in Shimoni (1.0–19.8 hrs) and Gazi (1.0–16 hrs). Migrant fishers at Kipini utilised the largest overall resource area of 582.6 km². Migrant fishers at Vanga-Jimbo utilised an area less than half the size of those at Kipini (280.3 km²). Migrant fishers in Kipini travelled the longest distance to fish, up to 40 km, which was about twice that by migrant fishers in Gazi (25 km), Shimoni (22 km) and in Vanga-Jimbo (21 km). The fishing grounds at Shimoni have the greatest maximum depth at 510 m, compared to 400 m at Gazi, 260 m at Vanga-Jimbo and 180 m at Kipini.

Table 2 shows the total number of fishers and the proportion of migrant and resident fishers at each site. At all sites, except for Gazi, there was a higher proportion of resident fishers. At Vanga-Jimbo there is almost a 50/50 split, with 48.4% migrants and 51.6% resident fishers. Shimoni and Kipini maintained a proportion of resident fishers of 64% and 60%, respectively. The largest proportion of migrant fishers was however found in Gazi (57.9%) followed by Vanga-Jimbo (48.4%). The proportion of migrant fishers in Shimoni and Kipini were 35.9% and 40.0%, respectively.

Table 1. General information about migrant fisheries and fishing areas in our study sites.

Landing site	Kipini	Gazi	Shimoni	Vanga-Jimbo
Gear	Hook and line, hook and stick, long line	Cast net, drift net, ring net, shark net	Gill net, hook and line, shark net	Basket trap, long line, ring net, shark net
Crew size	5–20	2–30	2–5	3–28
Fishing duration (hrs.)	6–14	1–16	1–19.8	3–9.5
Fishing area (km ²)	582.6	303.7	333.4	280.3
Maximum depth (m)	180	400	510	260
Maximum distance (Km)	40	25	22	21

Table 2. Proportion of migrant and resident fishers per landing site.

Study site	Total fishers (no.)	Migrant fishers (%)	Resident fishers (%)
Vanga-Jimbo	578	48.4	51.6
Shimoni	156	35.9	64.1
Gazi	190	57.9	42.1
Kipini	500	40.0	60.0

Table 3. (a) Types and number of vessels used by migrant fishers at four landing sites, (b) average capacity of vessels used by migrant fishers at all sites.

Vessel	3(a) Landing Site				3(b) No. of fishers		
	Kipini	Gazi	Shimoni	Vanga-Jimbo	Small	Medium	Large
Dugout Canoe	6	10	65	9	2	3.3	18
Outrigger Canoe	9	1	8	4		3.8	
Wooden Plank Boat	4	7	2	7	5.8	17	37.5
Fibre Boat (Sport Fishing)		1					

Table 3 shows the types and numbers of vessels commonly used by migrant fishers at each landing site, as well as the relative capacity of the vessels. Vessels used by migrant fishers at every site (in order of popularity) were dugout canoes, outrigger canoes and wooden plank boats. Shimoni had the highest number of dugout canoes (65). Kipini had the highest number of outrigger canoes (9). Vanga-Jimbo and Gazi had the highest number of wooden plank boats (7) (**Table 3**).

The dugout canoes had the smallest capacity of only two fishers per canoe in the smallest vessels, but up to 18 in the larger ones (**Table 3**). Outrigger canoes had a medium capacity of 3–4 fishers per canoe. The large wooden plank boats could hold 30–40 fishers at a time. However, the capacity of the vessels varied with gear type. When shark nets were used in the wooden plank canoes it could only hold 4–6 fishers (**Table 3**). Ring nets and shark nets were commonly used together with large wooden plank boats and outrigger canoes with hook and line.

Figure 3 shows the commonly caught families at each landing site and the vessel and gear type used. Migrant fishers mostly targeted pelagic fish (**Figure 3**). The main catch at Vanga-Jimbo was Clupeidae (sardine) with a frequency of 21 occurrences, closely followed by Lethrinidae (emperors (20)) and Dasyatidae (rays (10)) (**Figure 3(a)**). At Shimoni, the main catch was Lethrinidae (22), followed by Xiphidae (swordfish (10)) (**Figure 3(b)**). The main catches in Gazi were of Belonidae (needlefish (10)), Scombridae (tunas and mackerels (10)), Sphyrænidae (barracuda (10)) and Xiphidae (9) (**Figure 3(c)**). The main catch was Octopodidae (octopus (24)) at Kipini landing site (**Figure 3(d)**).

Ring nets commonly caught Clupeidae (21) in Vanga-Jimbo and Sphyrænidae in Gazi (8). Dugout canoes using shark nets targeted Dasyatidae (9) in Vanga-Jimbo, Xiphidae (6) and Carcharhinidae (sharks (4)) in Gazi (**Figure 3(a, c)**). Wooden plank boats using shark nets targeted Scombridae (3) and Istiophoridae (billfishes and sailfishes, (3)) in Gazi and Xiphidae (9) in Shimoni (**Figure 3(b, c)**). Long lines mainly targeted Dasyatidae (8) in Kipini, and Ophidiidae (cusk eels (2)) in Vanga-Jimbo (**Figure 3(a, d)**). Hook and lines in Shimoni (22) and Kipini (7), and basket traps (20) in Vanga-Jimbo targeted Lethrinidae (**Figure 3(a, b, d)**). Hook and stick in Kipini targeted Octopodidae (24) (**Figure 3(d)**). Gill net in Shimoni targeted Pomacentridae (**Figure 3(b)**) while cast nets (7) and drift nets (8) in Gazi targeted Scombridae and Belonidae, respectively (**Figure 3(c)**).

3.2. Socio-economic and cultural aspects of migrant fishers' 'space'

A major challenge facing fishers was the lack of basic infrastructure at landing sites. These included inadequate fish storage facilities and piped water in Gazi, and lack of ready market and cold storage facilities at Kipini. Through their special relations with fishers in terms of reciprocal agreements and credit arrangements (Crona et al., 2010), traders play a key role in

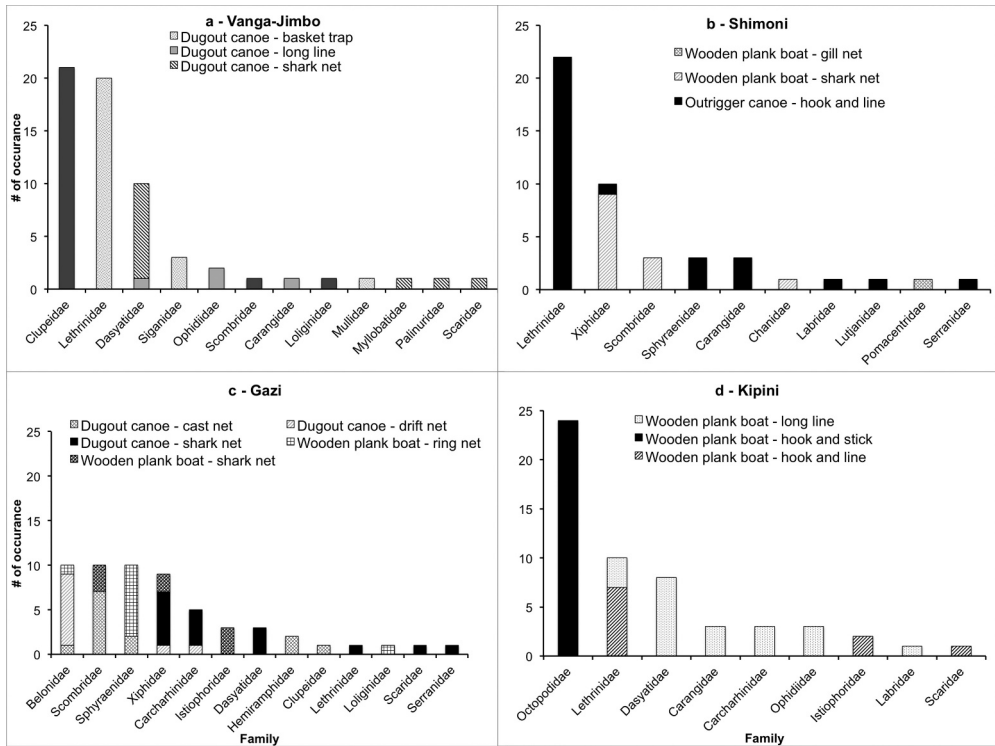


Figure 3. Commonly caught fish families at each landing site, as well as vessel and gear type used.

the operations of fishers in terms of facilitating them to overcome most of the challenges. Migrant fisher-trader agreements specified designated traders who traded with them, and the mechanism of sharing the profits of migration. Traders determined the choice of market for fish for migrant fishers from Pemba as they were mostly invited to the destinations by traders. Traders financed the main costs of fishing, such as equipment. They also paid for other costs including medical expenses, licenses, immigration clearance and housing, but these were refunded after sharing of the profits.

Traders provided valuable additional services including gutting, freezing and transport of fish to markets. Traders from Kilifi salted, dried and transported tripletail and shark to rural markets. Traders from Pemba and tourism investors who were also traders of fish provided freezers or cold storage rooms at landing sites, as well as cool boxes and ice for vessels used by migrant fishers from Pemba. Traders associated the presence of migrant fishers with increased availability of fish.

3.3. Economic characteristics of migrant fishers' 'space'

Catches from Kipini and Vanga-Jimbo were destined to the highest number of markets while that from Gazi was sold entirely at the local market (Figure 4). Except for Gazi, all landing sites had access to urban and rural markets.

Figure 5 shows the price of fish groups at different destinations. High-value crustaceans were mainly sold at Malindi, Mombasa and Ukunda while highly valued finfish were

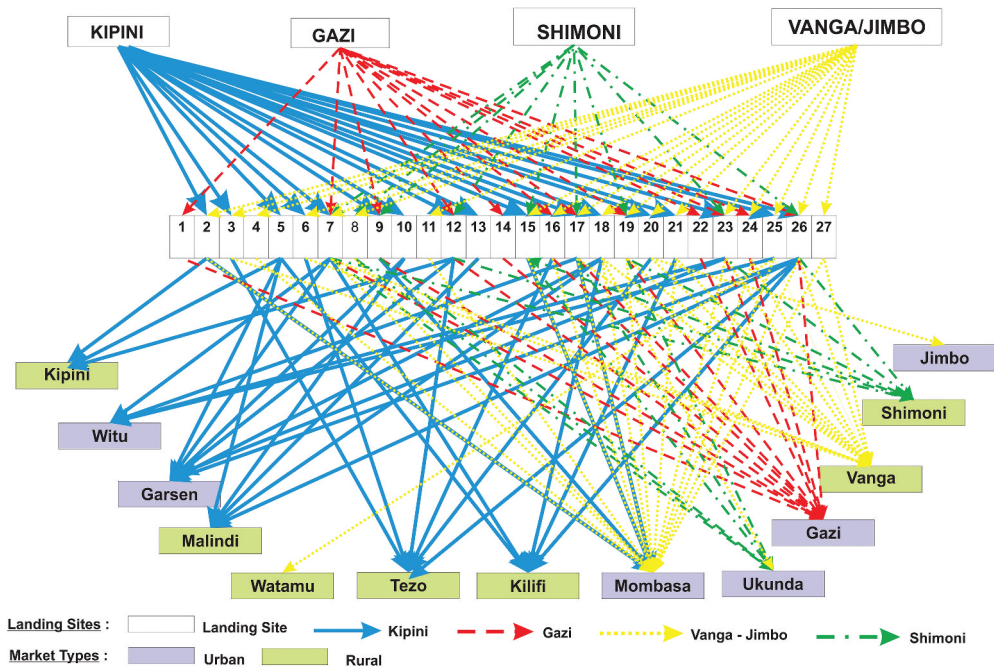


Figure 4. Market locations for fish caught at each of the four landing sites.

sold at Malindi, Shimoni and Ukunda. The price of medium pelagics and molluscs sold to different markets was relatively the same while other fish groups sold to Kipini market were of the highest value. In the category of sharks, rays and eels, those sold to markets in Gazi and Tezo were highly valued while small pelagics sold in Gazi were the most valued.

The Kruskal-Wallis one-way ANOVA on ranks showed a significant variation of price of fish between landing sites, fish groups, and distance to markets ($p < 0.05$) (Figure 5). Pairwise comparisons showed that prices of fish from Vanga-Jimbo and Kipini landing sites to markets in Watamu and Tezo, respectively, differed from others. The difference in fish price was significant (Mann-Whitney $H = 4870$, $p = 0.017$) between market categories (urban KES 100 (70–100) and rural KES 100 (80–120)), but not significant between respondent genders. Spearman's Rank correlation showed fish weight and distance to market were negatively (but not significantly) ($p > 0.050$) related to the price of fish.

Traders in Shimoni sold fish locally and to larger-scale dealers in Mombasa twice weekly. Kingfish was mainly sold to hotels and tourist establishments in Ukunda and Mombasa. Ozi was the nearest landing site to Kipini but it was a temporary settlement of fishers that did not offer a ready market. Migrant fishers from Kilifi mainly sold triple tail (*pawizi*) and shark to small traders for rural markets at Matsangoni, Gongoni and Tezo. Migrant fishers from Pemba mainly sold high-value fish and catch such as lobster and crabs to major dealers and traders. The traders of Pemba origin transported the fish to an export company in Mombasa every 2–3 days, another trader was a tourism investor and targeted tourist establishments in Kipini and Malindi.

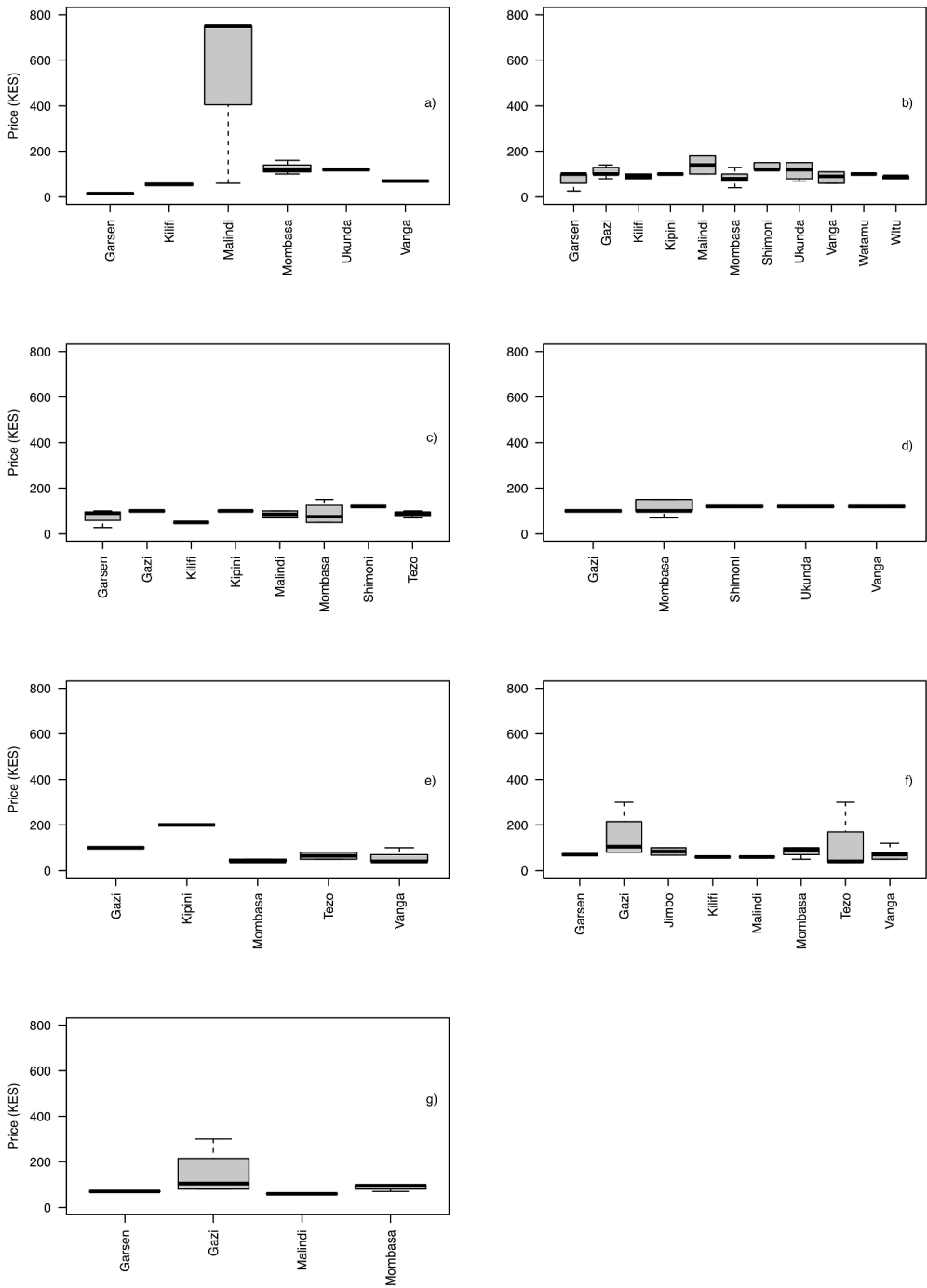


Figure 5. Price of (a) crustaceans, (b) finfish, (c) medium pelagics, (d) molluscs, (e) other fish, (f) sharks, rays and eels, (g) small pelagics sold to different market destinations.



Tanzanian fishermen carrying on nets and hauling net

All catch landed at Vanga-Jimbo (commonly triple tail, octopus, squid and lobster) were weighed at the fish market, bought by the BMU then sold to fish dealers or by the auction market. At Gazi, fish traders bought directly from fishers. Two categories of fish traders were identified in Kipini, those who bought fish from local fishers only (commonly triple tails) and strictly from migrant fishers. Traders in Shimoni fell into four categories: i) small-scale traders who bought fish from fishers and sold locally, and usually used bicycles, ii) larger scale traders, also called fish dealers, who bought fish directly from the fishers and smaller scale traders. They usually owned freezers or cold storage facilities in the village, iii) middlemen, also called brokers, operated between fishers and fish dealers, or small-scale traders and fish dealers, iv) women fishmongers, commonly known as '*Mama Karanga*' or fried fish sellers bought fish from dealers. They were not allowed to buy fish directly from the fishers.

4. Discussion

In Kenya, fisheries management has for over the years been devolved to the Beach Management Units (BMUs). BMUs are the local unit of fisheries control at the landing site (McClanahan et al., 1997; Obura, 2001). In order to operate in their area of management, migrant fishers normally have to seek local BMU's permission to fish and land in the area (Evans et al., 2011). Fisheries authorities have previously rejected migrant fishers at

their areas including in Malindi, Mwaepi, Mvuleni and Msambweni for various reasons. Some of the reasons are related to migrant fishers' use of beach seine, ringnet and spear guns, which are considered environmentally destructive gear and which lead to conflict with the local community over declining stocks (Glaesel, 2000; Fulanda et al., 2009; Wanyonyi et al., 2016a).

Migrant fishers' access to landing sites is facilitated through invitation by traders, relatives and local community or by return migration to places they had visited before. Apart from traders, social networks make important entry points to the destination landing site (Wanyonyi et al., 2016a). Traders play an important role in migration by providing gear and vessel provision, finances shelter to migrant fishers. Therefore, fishers are likely to migrate to destinations where they are likely to get such support apart from access to more, high-value catch, access to market and higher returns (Fulanda et al., 2009).

The presence of large numbers and proportion of migrant fishers at some sites compared to others is attributed to the suitability, acceptability by local fishers, invitation by traders, ease of access to fishing grounds and markets as witnessed in areas like Kipini, Vanga-Jimbo and Gazi. Most of the fishing grounds along the south coast from Likoni to Vanga are easily accessible from Gazi bay. BMUs received and approved the migrant fishers after confirming their gear type, crew size and determining the landing fees to be paid (which translates to income for the BMU). BMUs allowed migrant fishers who fulfilled certain requirements, including presenting introductory letters from their home authorities and valid travel documents, if foreign fishers.

The composition of catch largely depends on the gear used and fishing location (Bastardie et al., 2010; Samoily et al., 2011). This explains the landing of various types of fish including Octopidae in Kipini, Belonidae, Scombridae and Sphyraenidae in Gazi, Xiphidae in Shimoni and Clupeidae in Vanga-Jimbo. Along the south coast, the migrant fishers mainly landed pelagic species in contrast to what is landed by the majority of gears in Kenya's artisanal fisheries; *Siganus sutor* (African whitespotted rabbitfish) and *Leptoscarus vaigiensis* (seagrass parrotfish) (Samoily et al., 2017). Landing site is relevant to the migrant fishery as it significantly influences the price of fish. Landing sites with cold storage facilities and related infrastructure offer higher fish prices. Lack of cold storage facilities and the time it takes to reach markets are major constraints in artisanal fisheries (Wamukota, 2009). Our findings show that distance to market, fish group and the market categories (urban or rural) significantly influenced price of fish, contrary to observations elsewhere (Brummett, 2000). This is because migrant fishers at distant and remote areas rely on their extensive market networks to supply various urban and rural areas as was the case in Kipini and Vanga-Jimbo, unlike Gazi with a single market.

Generally, fish marketing is done at landing sites and other markets (Wamukota, 2009), both having different characteristics. The influence of landing sites on the access by migrant fishers is affirmed by the fact that each landing site had a unique marketing system. The trading arrangements between migrant fishers and particular traders guaranteed a market for the fishers' landings and other future engagements (Wanyonyi et al., 2016a). The fact that fish traders guarantee to buy all catch encourages fisher migrants to destinations determined by the traders. The nature of the free market is attractive to migrant fishers although individual landing sites regulated fish trading. In Kipini and Vanga-Jimbo, fishers traded directly with their dealers at agreed prices. At Gazi and Shimoni, all fish landed were first weighed by the BMU at



Tanzanian traditional boats targetting swordfish

the landing site before onward sale. Traders in Gazi, including fried fish vendors traded directly with migrant fishers but at Shimoni fried fish vendors were not allowed to trade directly with fishers. Fish vendors at all landing sites would have flourishing business during the presence of migrant fishers and a lack of fish in their absence.

The power of social network is affirmed in fishermen migration. Migrant fishers did not rely only on their own knowledge about or direct access to the markets; instead, they depended on their traders to sell their catch. The migrant fishers' concern was to land high-value catches, while it was the traders' duty to identify the markets. Also, traders provided valuable additional post-harvest services that enabled catches to reach target markets in good condition. Because of the complex migrant fisher-trader arrangements, distance to the target market does not limit migrant fishers' access to landing sites. This is not the case for local artisanal fishers who lack similar arrangements, and are mostly limited to their own local markets (Wamukota, 2009). These fishers sell fresh fish immediately at prevailing, often lower prices for lack of capacity to invest in cold storage and transport. The services provided to migrant fishers by traders require skilled planning and financial investments in fisheries. Their complex market organisation and the fact that they mainly supply high-value catch for fish processing businesses, export companies, and tourist and urban markets, are more akin to semi-commercial tendencies than the artisanal fisheries as practiced by local fishers.

5. Conclusion

Building on the sustainable livelihood framework, this research highlights spatial aspects of migrant fishers related to livelihood implications. Migrant fishers' livelihood is a function of the spatial characteristics at the destination, which are the landing site, market, social relations and integration into society. The existing policies, institutions and processes at destination determine access to these spaces, i.e. landing site, market availability, prices and good returns, thereby influencing sustainability of fisher livelihoods. Existing market systems influence migrant fishers' access at destination. Price of fish at destinations is determined by fishers; however, traders take full responsibility of finding markets for migrant fishers and transporting the catch to the predestined market. Due to the social relations that migrant fishers' possess and the complex marketing arrangements with traders, migrant fishers exhibit more commercial-like tendencies compared to other artisanal fishers who tend more towards subsistence fishing. Migrant fishers' relevance in society is by virtue of their role in fish supply chain. Their ability to sustain reliable supply of fish and pay fees to local authorities also improves the local economy. These perceived benefits have created a niche for migrant fishers in the local society and promoted their acceptance. Understanding fisher migration through the spatial lense puts into perspective the critical role that this phenomenon plays in sustaining artisanal fisher livelihoods.

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Disclosure statement

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Notes on contributors

Innocent N Wanyonyi is an environmental scientist specializing in Tropical Artisanal Fisheries Management and Coastal Management with recent research focusing on the dynamics of fisher migration. He has experience in the Social, Economic & Environmental and Fisheries research and Resource Management issues in the Western Indian Ocean. He now leads the applied research project on city-coastal environment conurbations at COMRED, Kenya.

Andrew Wamukota is an expert on small-scale fisheries. He has studied small-scale co-management, fisheries value chains, closures, markets and trade across the Swahili coastline. His studies have highlighted the income inequalities and the huge diversity of actors in these fisheries. Andrew is a researcher and lecturer at the Department of Environmental Studies, Pwani University, Kenya

Victor Mwakha Alati is a research scientist at the Kenya Marine and Fisheries Research Institute under the oceanography and hydrography department. He is also a PhD researcher studying social anthropology at the Department of Life Sciences, University of Roehampton. He is interested in utilising ethnographic methods in investigating how fishing communities understand or use their maritime heritage practices.

Kennedy Osuka is a research scientist at CORDIO East Africa working under Fish and Fisheries Programme. He is also a PhD researcher at Department of Environment and Geography, University of York. He has great interest in artisanal fisheries research, coral reef resilience, management and conservation. Kennedy is keen to make contributions to policies on small-scale fishery of Kenyan coast.

ORCID

Innocent N Wanyonyi  <http://orcid.org/0000-0003-0317-5271>

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