Gendered considerations

of Lake Victoria's fisheries' livelihoods and the role of fish in food security

in Sindo, Kenya

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Study Location

SINDO: Kenyan shores of Lake Victoria

1.

A historically **impoverished** region with high rate of **malnutrition** and **disease.**

2.

A historically rich ecosystem has been replaced with three main fisheries:

Nile perch (*Lates niloticus*),
tilapias (*multiple spp.*),
and the silver cyprinid
'omena' (*Rastrineobola argentea*).

3.

Fishing communities faced with the **fisheries economic collapse** and **exponential growth of aquaculture** (2005 – present).

The Research: Aims & Methodology

Research Questions

What is the role of fish in food security of fishing communities in Homa Bay, Kenya, considering emergent aquaculture? (Direct vs indirect)
In what ways is it gendered?

Mixed Methodology

- Key informant interviews & focus groups
- Nutritional assessment of diets
- Quantitative analysis of household livelihood surveys
- Qualitative analysis of interviews & focus groups

Study Area

- Highly commoditized food system
- Villages around Victory Farms

Amplifying local voices

- 112 diets analyzed
- 313 household surveyed
- 29 discussions with over 150 local people
- Data collected between 2021-2022

Key finding regarding **diets**:
Women and men generally eat the same… but women need more.

The nutritional contribution of dinner to recommended nutrient intakes was measured between household members using F-tests, then modelled linearly to account for other socio-economic indicators.

The recommended intake of iron was significantly different between genders: women were not getting enough iron.

Variable	Coefficient	P-value	Eta-squared (η2)
Iron			
Family member			0.38
Female adult	0		
Male adult	80.970	**6.09e-09 *** **	
Female child	1.747	0.9074	
Male child	34.247	**0.0478 ***	

- No significant differences between men & women's absolute nutritional intake.
- But women have higher iron requirements than men.
- Males (men and boys) reached a higher percentage of their RNI for iron than females (women and girls) due to differences in RNI requirements (although total iron intake was the same).

Key finding regarding **livelihoods**: access to value from fisheries was gendered & exclusive

Highly gendered value-chain

The two main positions available to women were generally high risk and low reward.

1. Omena processing is a low-value trade with tight margins; yet dried omena has disproportionate importance for local micronutrient provisioning and food security.

2. Nile perch & tilapia trading: women lacked access to Nile perch & tilapia processing roles and were limited to trading, another high risk and low reward node.

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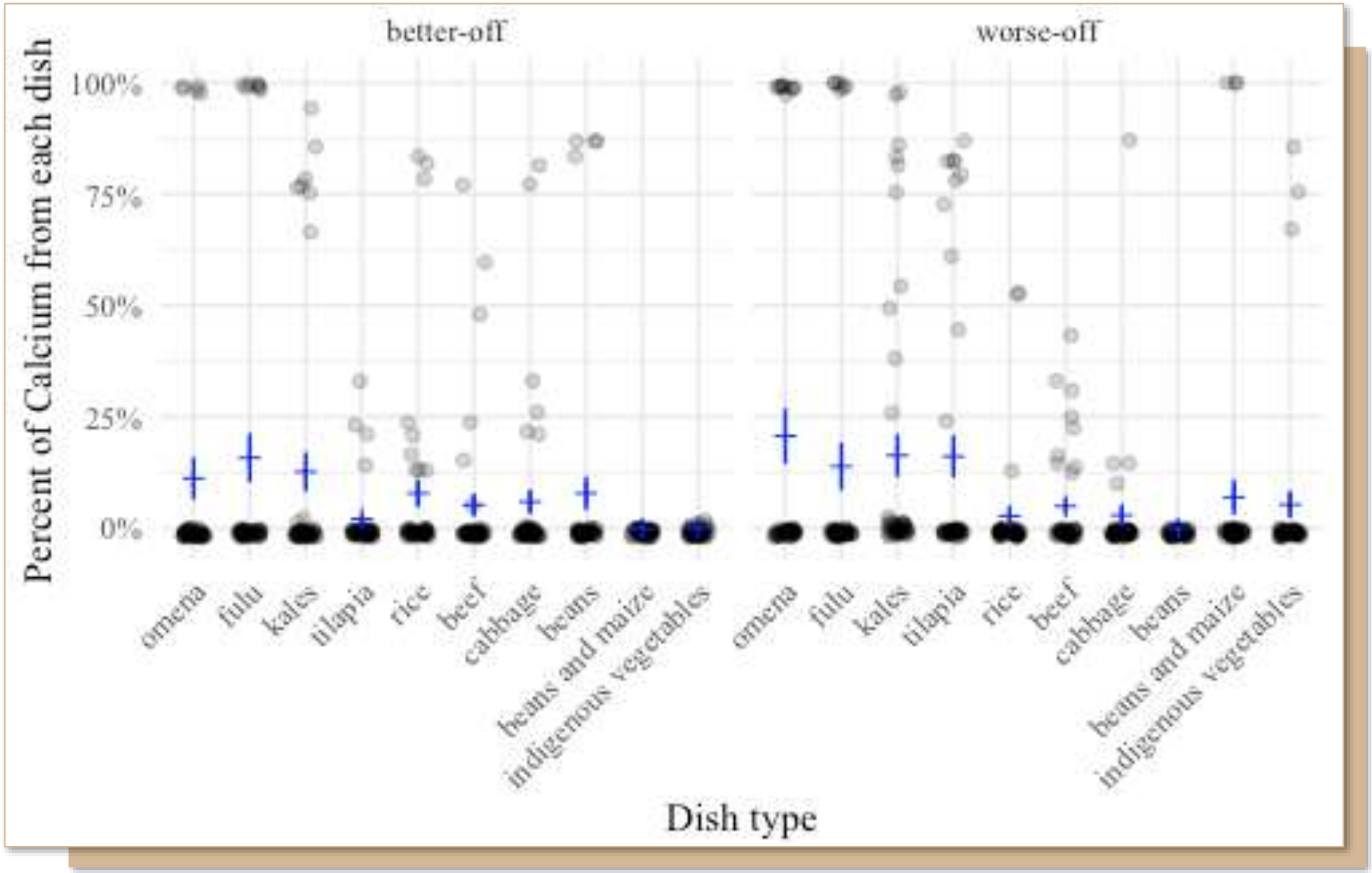

A significant source of nutrients (e.g., calcium), particularly for worse-off households.

Compared to larger fish (tilapia and Nile perch), smaller fish (omena & fulu) were rich in calcium, iron, iodine, Vitamin A, and Vitamin B12.

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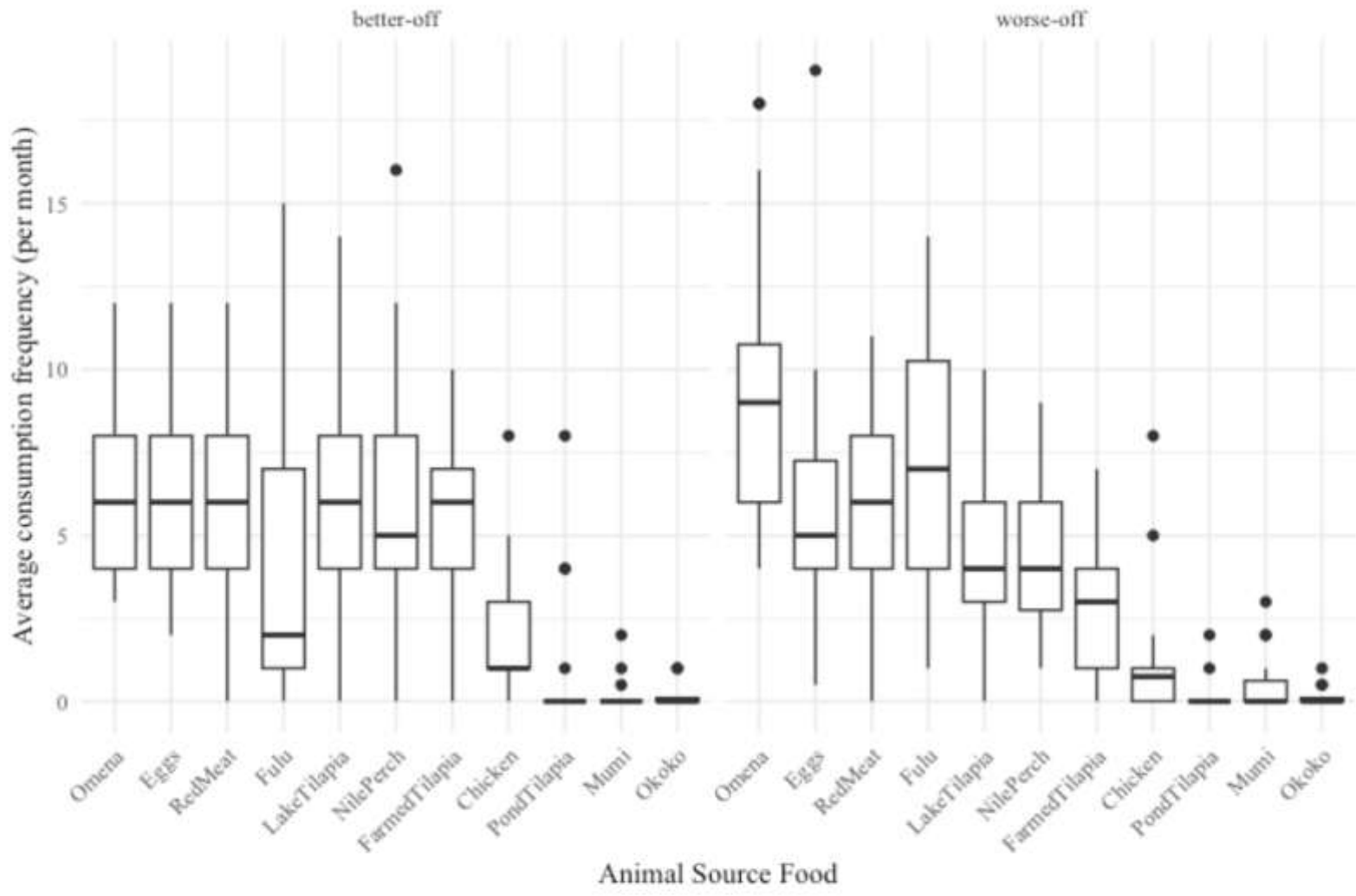

Figure 37: Monthly frequency for all commonly consumed ASF by wealth group. Significant differences between wealth were apparent for omena, fulu, mumi (catfish), and farmed tilapia.

- More frequent omena consumption.
- Farmed tilapia too expensive for the poor.
- Tilapia as an aspirational food item with associated status.

The omena drying business

an accessible, income-generating activity for women.

- But omena was not valuable enough to trade for equally (financially nor nutritiously) valuable food.
- Cash income from omena sales was used to purchase maize and pay for other household expenses.
- The omena-drying business also directly supported household food security because, unlike other fish species, some omena was retained for household consumption.

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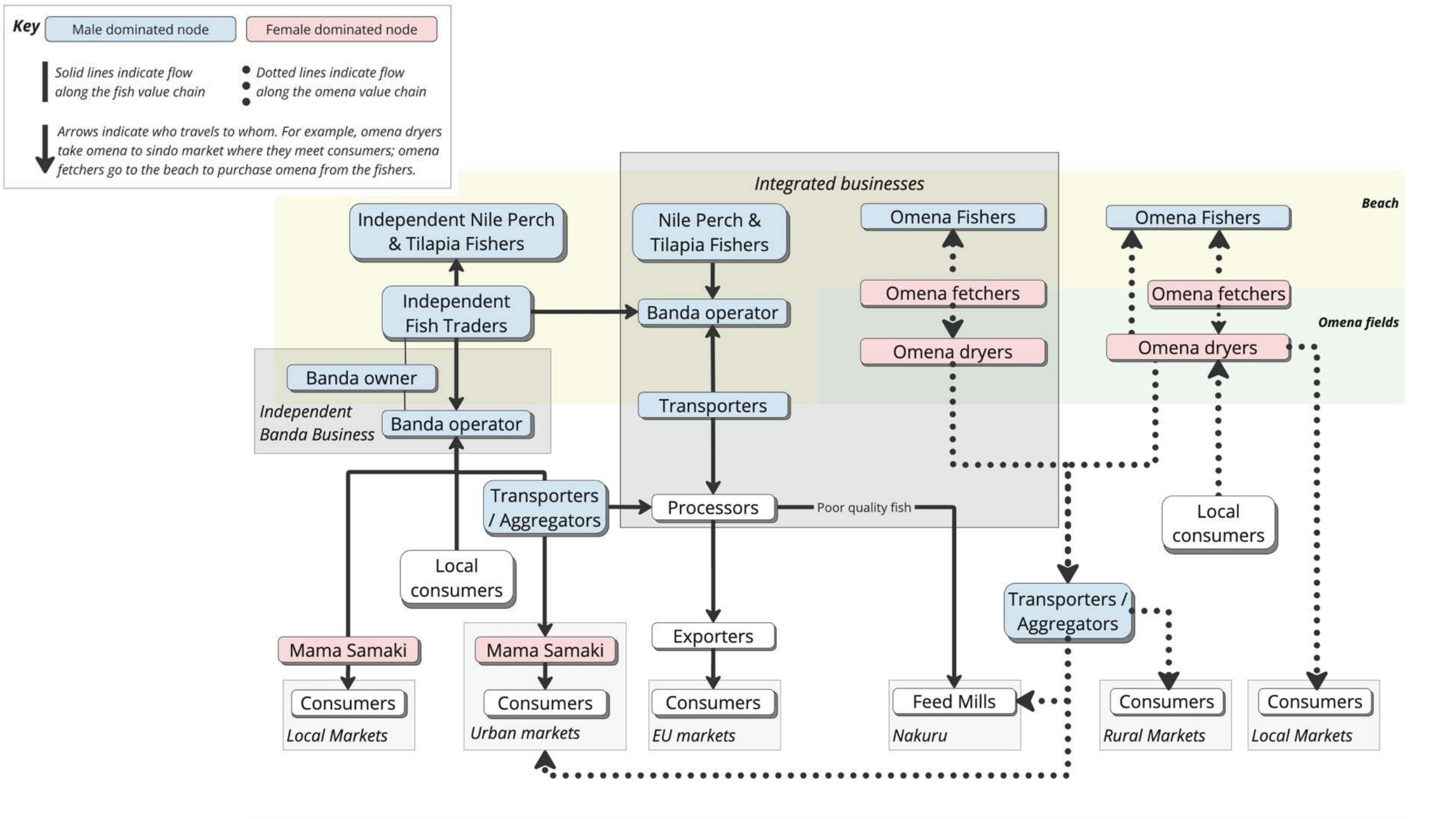

Key
Male dominated node
Female dominated node
Solid lines indicate flow along the fish value chain
Dotted lines indicate flow along the omena value chain
Arrows indicate who travels to whom. For example, omena dryers take omena to sindo market where they meet consumers; omena fetchers go to the beach to purchase omena from the fishers.
Integrated businesses
Beach
Omena fields
Independent Nile Perch & Tilapia Fishers
Nile Perch & Tilapia Fishers
Omena Fishers
Omena Fishers
Independent Fish Traders
Banda operator
Omena fetchers
Omena fetchers
Omena dryers
Omena dryers
Banda owner
Independent Banda Business
Banda operator
Transporters
Transporters / Aggregators
Processors
Poor quality fish
Local consumers
Local consumers
Transporters / Aggregators
Mama Samaki
Mama Samaki
Exporters
Consumers
Consumers
Consumers
Feed Mills
Consumers
Consumers
Local Markets
Urban markets
EU markets
Nakuru
Rural Markets
Local Markets

Key finding: Gendered land ownership rights had consequences for women's food security.

	Asset	Percent of women with ownership or joint ownership of asset
Ownership of Asset	Agricultural land	22.8% (n=38 of 167)
	Large livestock	16.8% (n=28 of 167)
	Small livestock	30.5% (n=51 of 167)
	Poultry (chicken, turkey, duck)	44.3% (n=74 of 167)
	Fish pond or fishing equipment	3.59% (n=6 of 167)
	Farm equipment (non-mechanized)	5.39% (n=9 of 167)
	Farm equipment (mechanized)	2.99% (n=5 of 167)
	Non-farm business equipment	3.59% (n=6 of 167)
	The house (or other structures)	53.3% (n=89 of 167)
	Large consumer durables	49.1% (n=82 of 167)
	Small consumer durables	85.0% (n=142 of 167)
	Cell phone	82.0% (n=137 of 167)
	Non-agricultural land	11.4% (n=19 of 167)
	Means of transportation	7.78% (n=13 of 167)
	Activity	**Percent of women with input into how the income from each activity is used**
Access to and decision on credit	Credit from an NGO	1.80% (n=3 of 167)
	Credit from a formal lender	19.8% (n=33 of 167)
	Credit from an informal lender	18.6% (n=31 of 167)
	Credit from friends/family	47.3% (n=79 of 167)
	Credit from an MFI	8.98% (n=15 of 167)
	Credit from an informal group	42.5% (n=71 of 167)

Women lacked access to land for omena drying & other activities.

Women are not landowners under the traditional governance system, which is a major barrier to their livelihoods.

Poor access to credit – opportunity in table banking

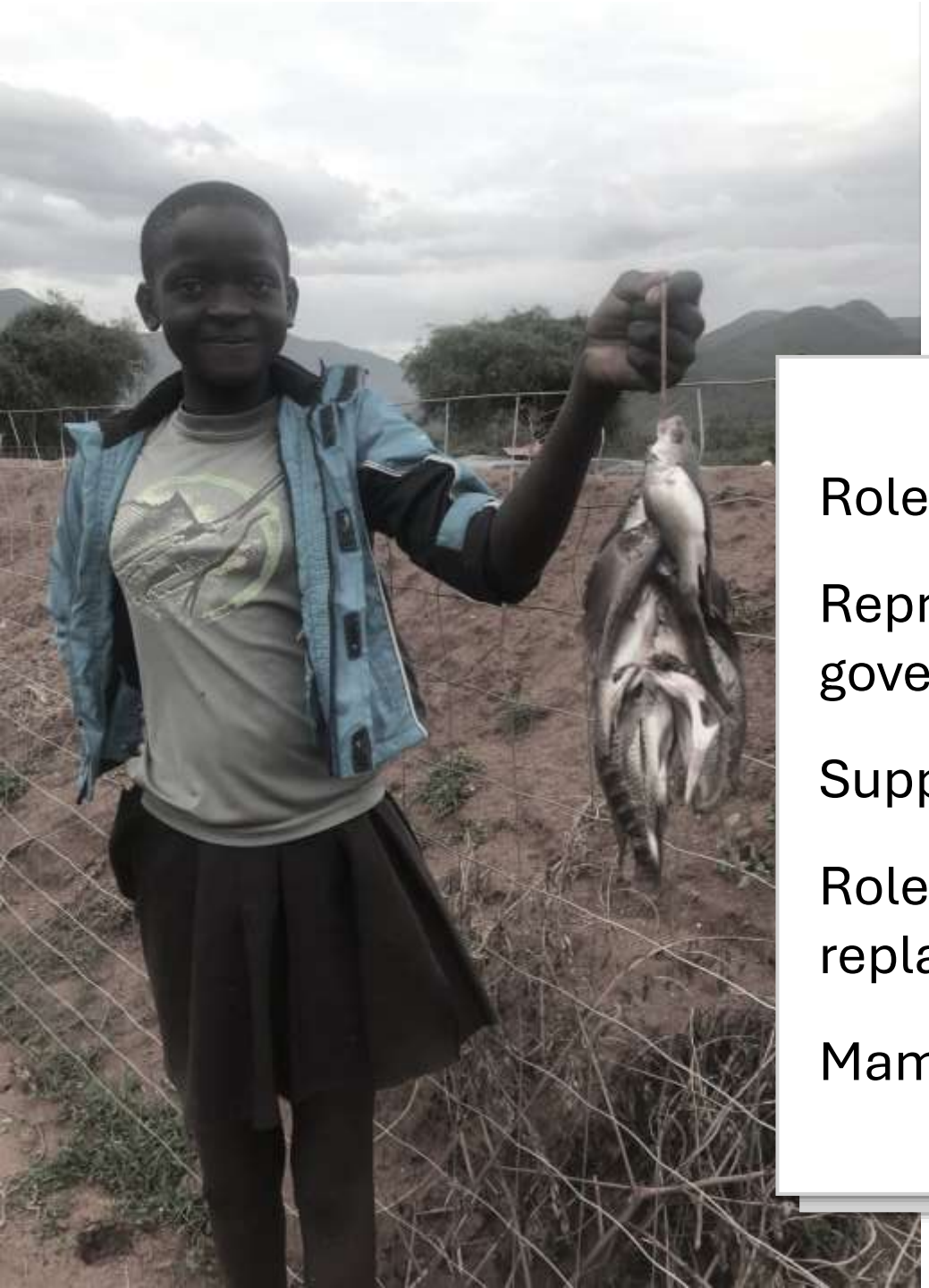
Key finding: Gendered land ownership rights had consequences for women's food security.

- Improvements in women's education (2010 Constitution) but continued limited access to resources.
- Omena dryers – already a vulnerable group - have additional costs due to landlessness (land rental or use of poor-quality land)
- Omena dryers are not represented in governance (see also Dr. Etienne).
- Women's food security may be contingent on their relationships with men.
  - Correlation between land ownership (almost exclusively male-owned) and food security indicators (FIAS, HDDS).
  - Sex-for-fish relationships were prominent. Are women staying in nonconsensual relationships for food security?
- Because women direct more resources to household use, their lack of autonomy over resources may have consequences for food security.

See also Pfeiffer et al., 2001; Merten & Haller, 2008; Béne ét al., 2009; Moreau & Garaway, 2018; Ansah et al., 2020

In Summary

“Women’s absence from many nodes of the fish value-chain (e.g., boat ownership, fish aggregation, local governance) and their lack of decision-making input into household decisions regarding expenditures may be the reason that economic benefits from fisheries fail to translate into improved food security and wellbeing.”



The Future?
& next steps…

Role of governance & development?

Representation of omena dryers in fisheries governance?

Support for omena dryers: role for table banking?

Role of aquaculture? Perhaps in job creation, replacing Nile perch processing plants?

Mama Samaki?

Thank you

Please use the QR code to see the community-led *Voices From Sindo* poetry/photography book (freely available online)

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