Nigerian fish food systems futures

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Introduction

- Fish is integral to global food systems and of particular importance as a highly nutritious food in combatting malnutrition in Africa [1].
- Nigerians rely heavily on fish for food, accounting for 43% of their dietary animal protein [2].
- Nourishing 400 million Nigerian by 2050 is a major human development challenge [3].
- Despite being the largest fish producer in sub-Saharan Africa, production has struggled to meet demand.
- Understanding the dynamics of fish supply, demand, and their implications on food and nutrition security is critical to support national policymaking and inform interventions for closing the supply-demand gap.

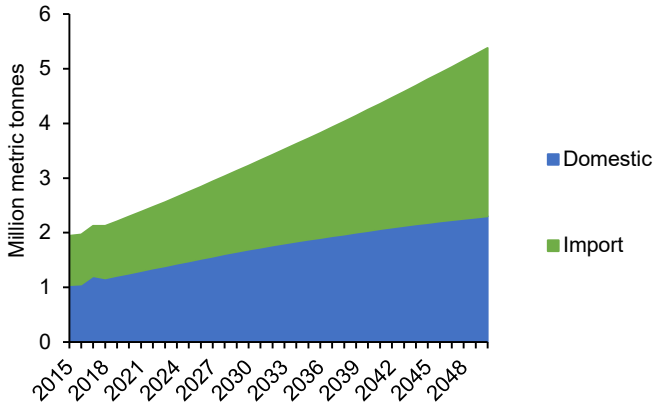
Methods

- Following earlier fish sector modeling framework [4], a multi-market partial equilibrium model was built.
- The model projected fish supply and demand in Nigeria from 2015 to 2050.
- A production function was specified for different fish groups to derive fish producers responded to changes via optimization-input quantities.
- A Marshallian demand function was specified for each fish groups to allow consumer's utility maximization.
- The model projected nutrient intake from fish consumption (computed from edible parts) via domestic sources and imported fish.

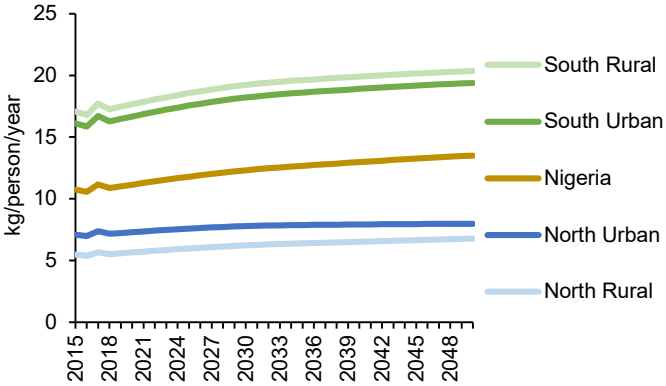
Results

- Fuelled by economic, population, and urbanization growth, Nigeria's fish consumption will double from 2.3 million tonnes in 2020 to 5.4 million tonnes in 2050, with annual per capita fish consumption increasing from 11.1 kg to 13.5 kg.
- Nigeria's annual per capita fish consumption in the southern region (16.9 kg) was higher than in the northern region (6.1 kg) in 2020, though the southern region's average fish price is 50% higher. The rural population consumes less fish per capita per year (8.4 kg) than urban consumers (13.8 kg).
- The dynamic of key nutrient intake from fish is similar to the regional fish consumption trend.
- Among seven modeled fish groups, the small indigenous fish, clupeids, had relatively higher nutritional content [5].
- In mid-2030s, half of the fish consumed in Nigeria will come from imports.
- Throughout the projection period, the fish supply and demand gap will continue to widen, and fish imports will continue to increase.

Fish consumption in Nigeria



Regional per capita fish consumption in Nigeria



Conclusions

- Increased fish production and consumption in Nigeria will contribute to alleviating food and nutrition insecurity.
- Developing domestic fish production could reduce import reliance. Both capture fisheries and aquaculture can be promoted to enhance rural communities' livelihoods.
- The Nigerian national annual per capita fish consumption is about half the global average, with only a quarter in the northern rural region, implying policies to ensure accessibility and affordability are particularly needed in this region.

References

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