

Ensuring food security in Africa through Sustainable aquaculture

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Aquaculture for food security in Kenya

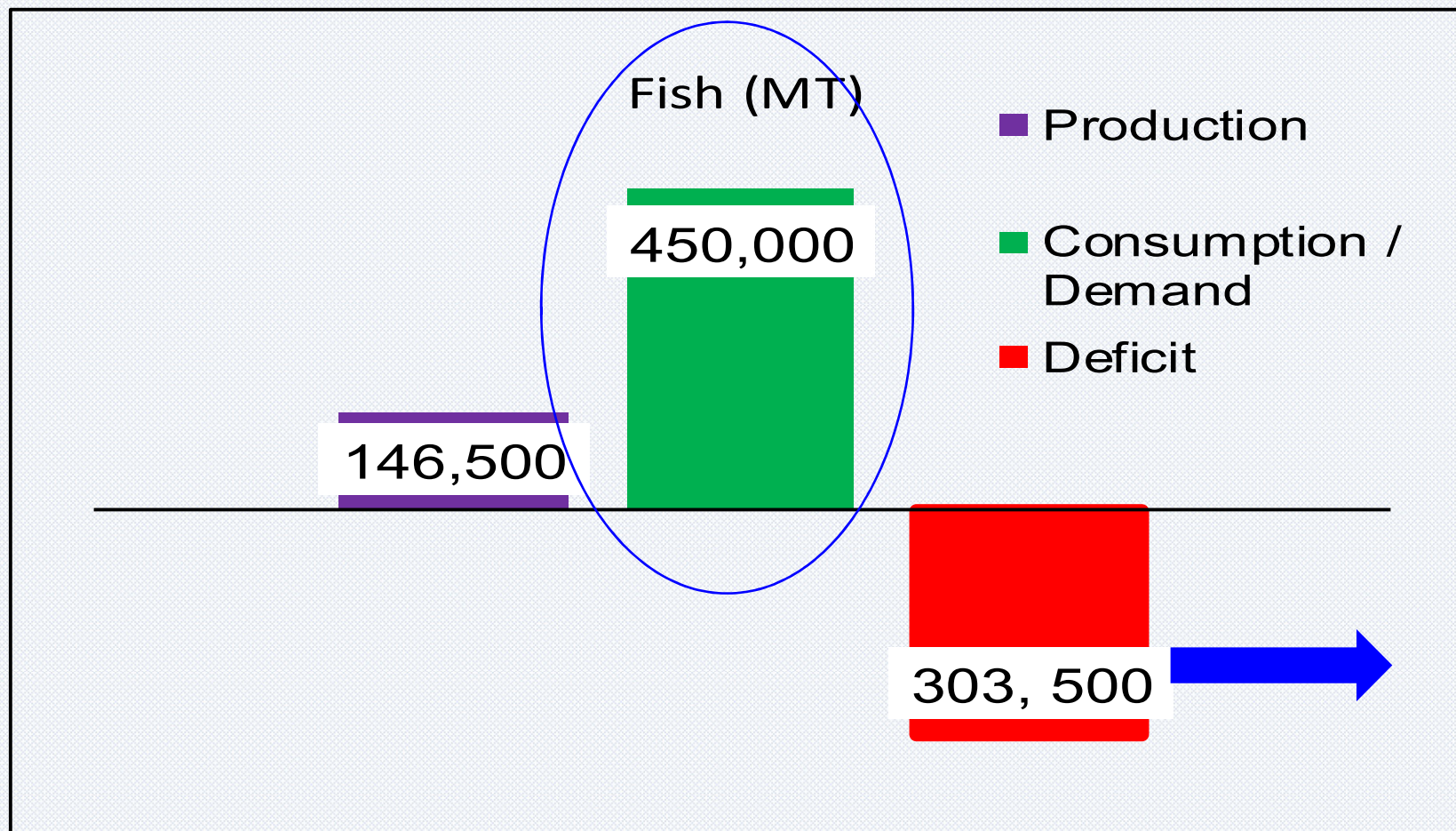


Introduction

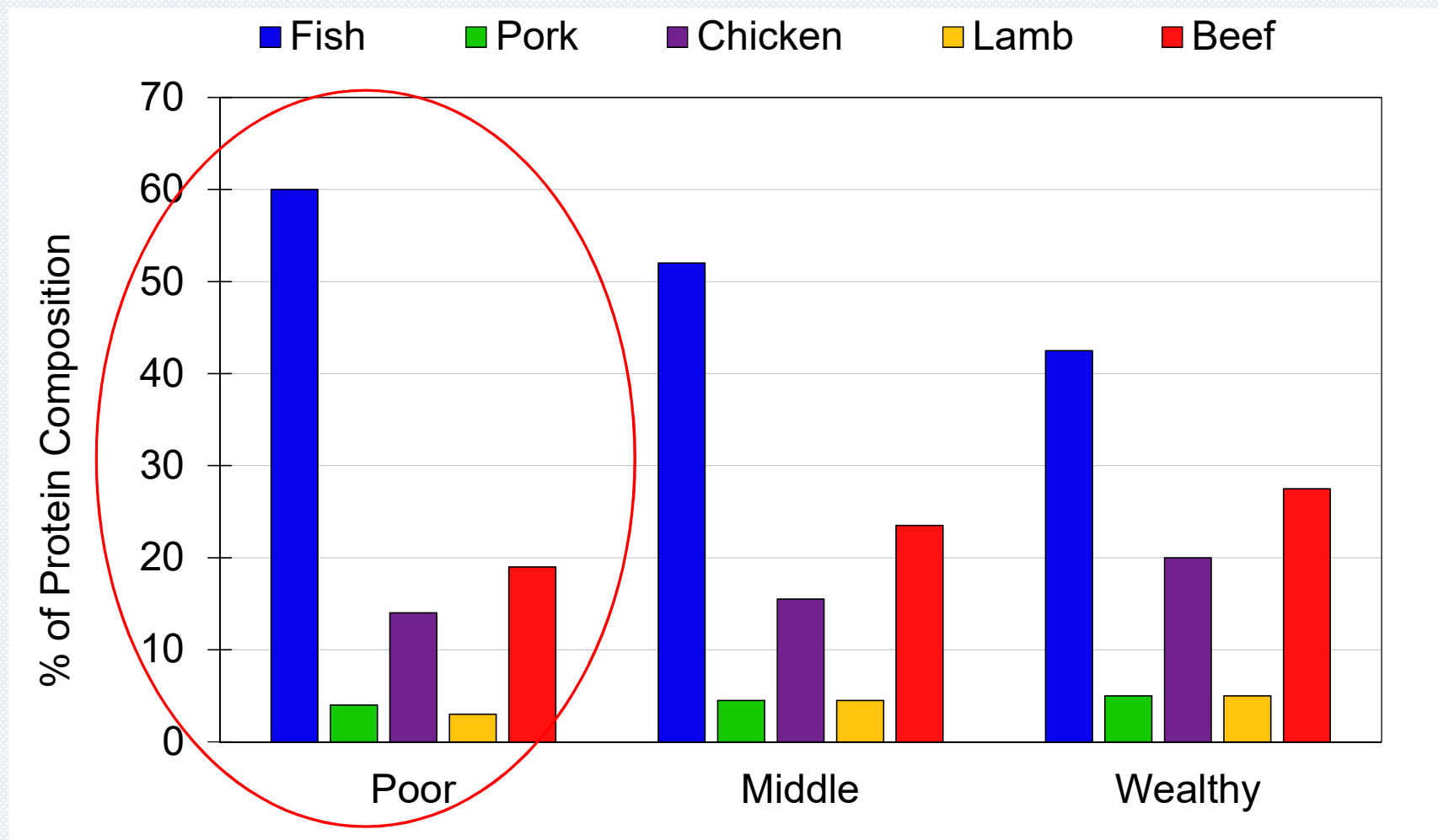
- Fisheries and Aquaculture sector directly employ $\approx 125,000$ fishers and fish farmers in Kenya
- Supports 1.2 million people in fish processing, marketing, and trade
- Contributes 0.5% to the national GDP
- Fish provides quality animal protein and micronutrients
- Capture fisheries is on the decline
- Increase in demand of fish requires further aquaculture growth
- Aquaculture contributes 15% of the total fish production in Kenya

Fish production against demand

To increase Per capita consumption from 3.5 to 10 kg/per/yr



Fish consumption

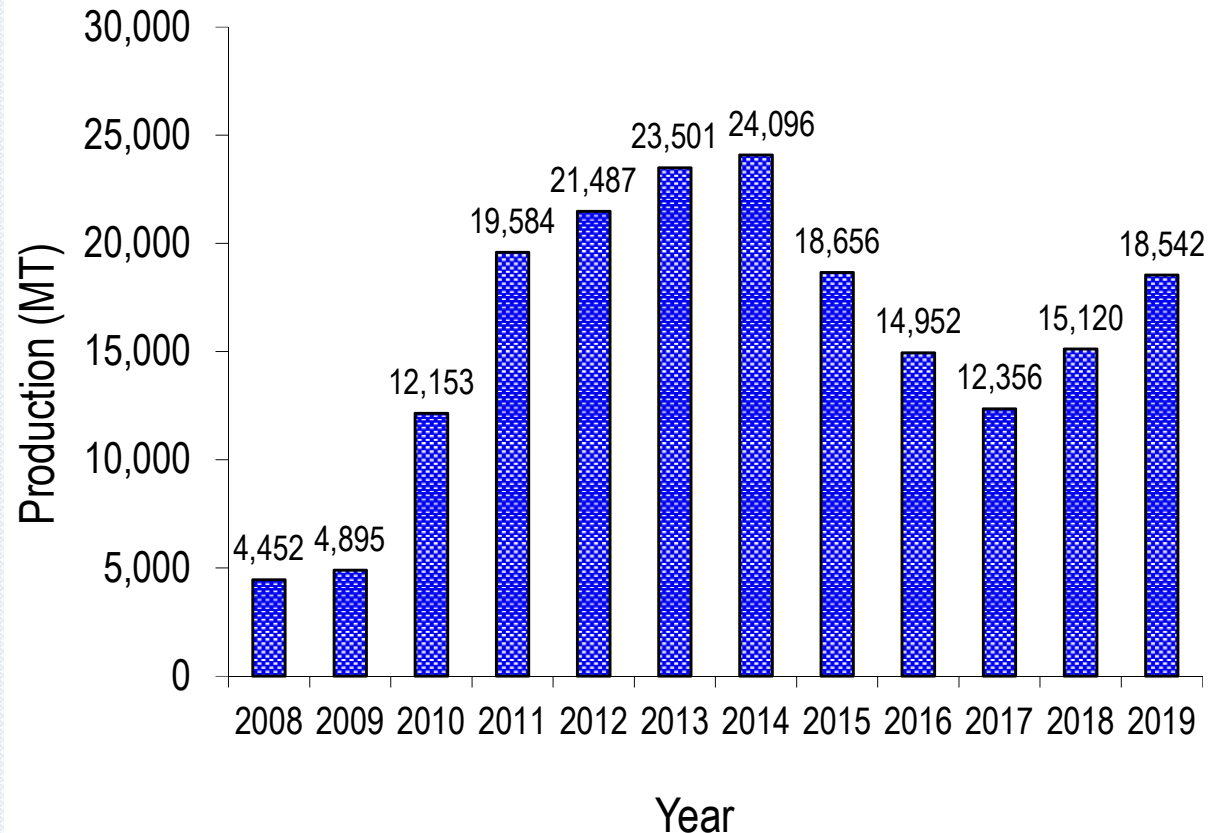


Protein consumption composition by socioeconomic classes (KNBS, 2018)

Fish considered “rich food for poor people”

Aquaculture production

- Since 1950's
- Stagnated at 4000 tons
- Mainly fresh water
- 2010 ESP-FFEPP
- Peaked at 24,096 t
- Freshwater
(Nile tilapia and African Catfish)
- Mariculture
(Sea weed, milkfish, Shrimps)
- 4,357 cages in Lake Victoria in 2019 covering an 62,132 m²



Aquaculture production trends between 2008 and 2019 (KNBS,2020)

Culture systems

- Semi intensive pond systems
- Cages in lake Victoria and Dams /small water bodies
- Recirculating Aquaculture Systems (RAS) in peri-urban areas



Commercially cultured food fishes

1. Nile tilapia (*Oreochromis niloticus*)



2. African catfish (*Clarias gariepinus*)



3. Rainbow trout (*Oncorhynchus mykiss*)



4. Tilapia jipe (*Oreochromis jipe*)



Opportunities for growth

1. Mariculture species



- Potential for sea cucumber, oysters, groupers
- Fish feed for marine species production
- Processing of sea weed

Opportunities for growth...

2. Rise in the number of local feed manufacturers of extruded pellets

- ❖ Unga Ltd, Sigma Ltd, Lenalia fish feeds, Jewlett Enterprises, KMFRI Sangoro.



Opportunities for growth...

3. Transformation from subsistence to commercial ventures in the private sector

- ❖ Victory farms, Rio holdings Jewlett enterprises, Makindi farm, Africa Blue, Pioneer farm, Mwea Farms, Green algae farms, Fish paradise..etc.....



Opportunities for growth...

- **Cultured fish mini-processing plants in hot spot areas;**
 - ❖ Kanyakine Fish Plant, Fish Carnivore (Meru), Wamagana Fish Plant (Nyeri), Kakamega Fish Plant (Kakamega) and Rio Fish Plant (Migori County)



Interventions for more fish to feed Kenya

- Promotion of large scale, environmentally sustainable aquaculture
- Seed development of key cultured species
- Promotion of fish eating “fish eating campaigns”
- Lowering of post harvest losses – value addition
- Subsidies to promote investment in aquaculture by small holder farmers
- Strategic markets for farmed fish
- Strengthening aquaculture based value chain for the benefit of the poor.
- Affordable feed by providing alternatives to fish meal

Strategies for meeting SDGs

- Increasing Small holder farmer productivity
- Promotion of Public–Private Partnership (PPP)
- Youth and women programs (CIG, CBO)
- Promotion of sustainable aquaculture
- Climate Smart Aquaculture technologies
- Multidisciplinary, multi-institutional research to promote global partnerships



Challenges

- Inadequate legislation and aquaculture regulations
- Inadequate supply of affordable quality fish feeds
- Limited access to credit facilities for investment
- Climate change (extreme drought and flooding)

Current support programs

- Aquaculture Technology Development and Innovation Transfer (Government of Kenya)
- Kenya Climate Smart Agriculture Project (WorldBank)
- Aquaculture Business Development Program (IFAD)
- Kenya Marine Fisheries Socioeconomic Development Program (World Bank)

A photograph showing a woman in a striped shirt and a headwrap pouring small fish from a pink bucket into a larger red bucket. A man in the background is holding a green fishing net. The scene is outdoors near a body of water.

THANK YOU