

Sustainable Coastal and Marine Fisheries Resources : Linking Research To Management For Societal Benefits

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Presentation outline

- Introduction
- Defining societal benefits in fisheries
- National Policy agenda
- Role of fisheries in the national agenda
- Status of marine fisheries resources in Kenya
- Policy Priorities in fisheries and key strategies
- Trends in management and research responses in fisheries management and mari-culture
- Opportunities for research
- Future Policy direction

Introduction: Importance of fisheries

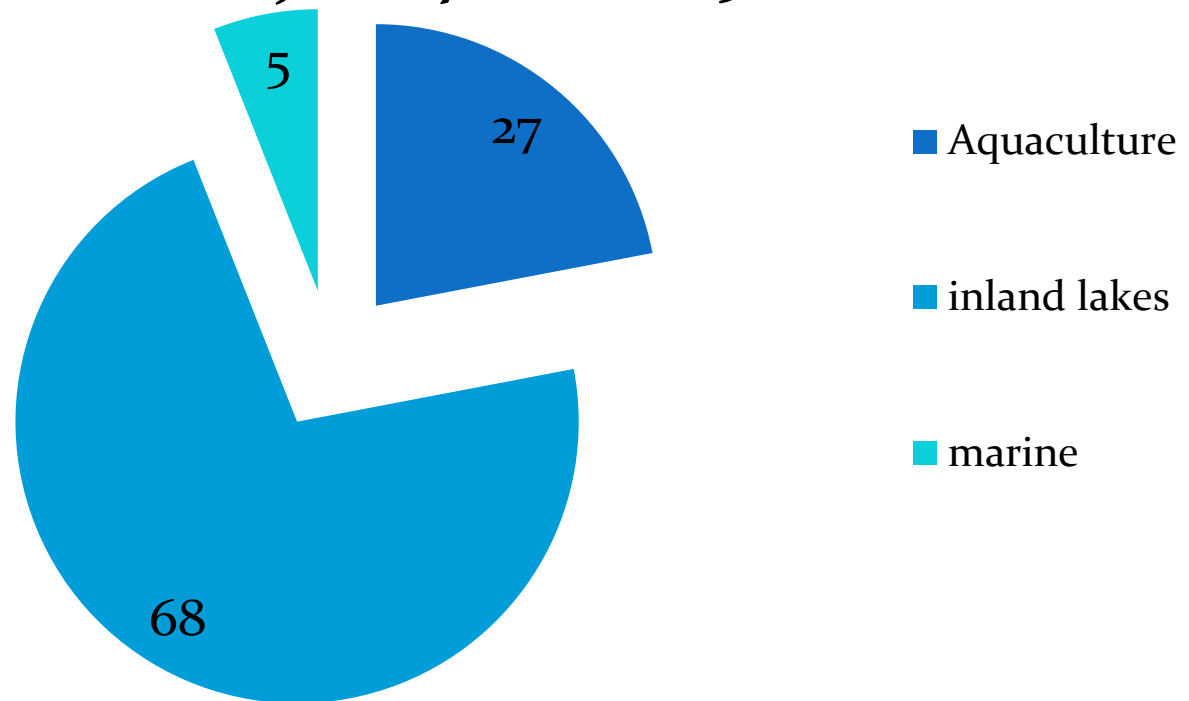
- Over 800 million people in the world continue to suffer malnutrition, and this is expected to increase as the population grows (FAO, 2014)
- Fisheries and aquaculture play a significant role in promoting health, eliminating hunger, poverty reduction and employment and livelihoods to millions globally & is the most traded food commodity globally (FAO, 2014)
- This demand for fish has led to overfishing and destruction of Coastal ecosystems around the world (Jackson et al. 2001, Myers and Worm 2003).
- Big challenge is how to feed this large population while safeguarding the natural resources for future

Introduction: Status of fisheries

- Kenya is blessed with both natural fisheries resources in the fresh inland water bodies and the Indian Ocean and aquaculture.
- The National Fish Production in the country is still stands at 186,969MT valued at about KShs 24 billion(ex-vessel)
- Inland Capture Fisheries 123,861 MT, 68% all valued at KSh. 12 billion;
- Marine Capture Fisheries 8,865 MT, 5% valued at KSh. 1 billion and
- Aquaculture 48,790 MT, 27% valued at KSh. 18 billion (FD, 2014)

Future target fish production in Kenya

- Targeted total production 450,000MT by year 2030 from both aquaculture and capture.
- Targeted increased production from Territorial water and EEZ fishing by domestic fleets
- Aquaculture expected to play key role. Currently Fastest growing from 2% in 2009 to 27% in 2013



Fisheries Development And Societal Benefits

- The overall objective of fishery development is the total sum of improvements in the benefits to society from fishery exploitation and the resource sustainability.
- Societal Benefits are defined in terms of sustainable increased fish yield, employment creation & nutritional opportunities.

National Policy Priority

- Kenya's national development agenda is guided by the Vision 2030 which aims at transforming Kenya into “a newly industrialising, middle income country providing a high quality of life to all its citizens in a clean and secure environment”, (GoK, 2008).
- The vision of the agriculture sector is an “innovative, commercially-oriented and modern agriculture”.
- The role of science/ research, technology and innovation (STI) in which new knowledge plays a central role in wealth creation, social welfare and international competitiveness

Policy Priorities in Fisheries Vs National Agenda

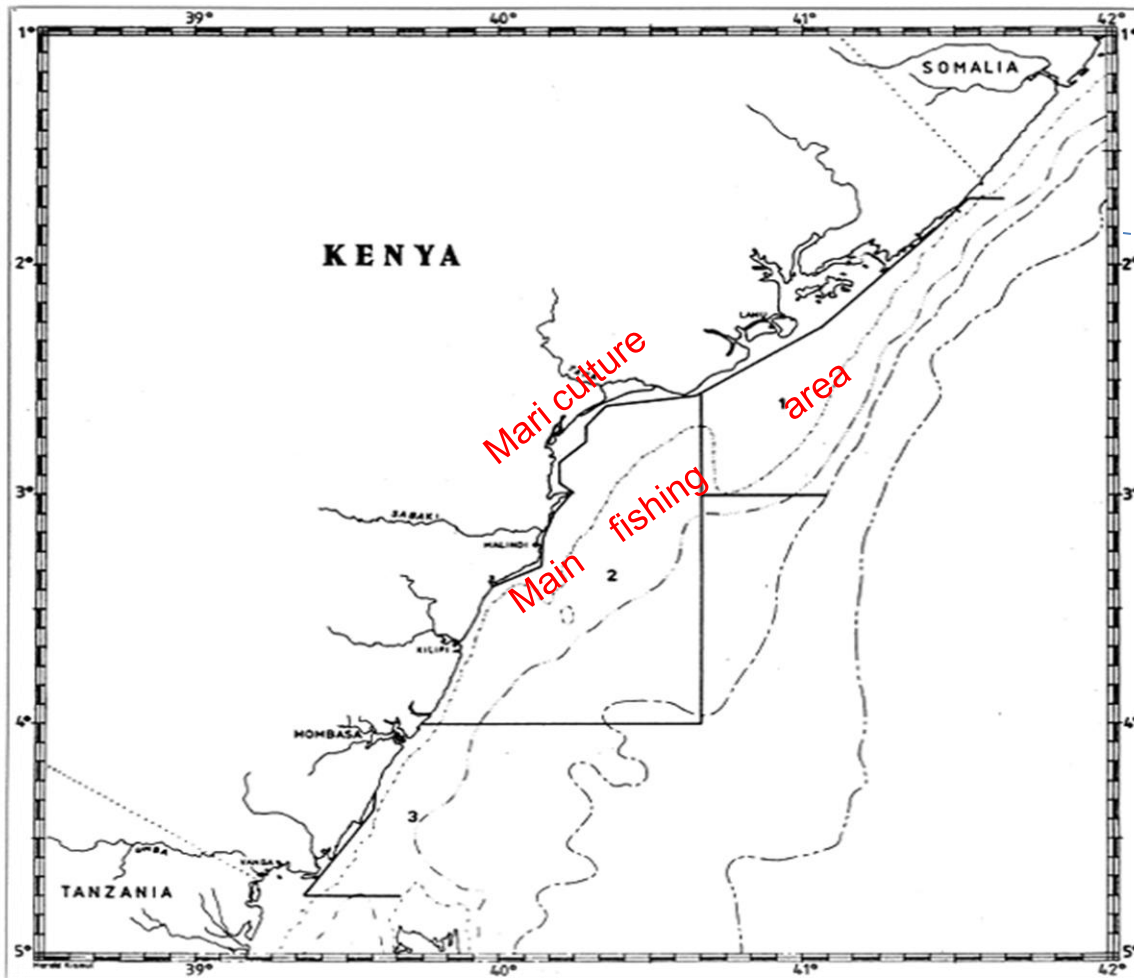
- Fisheries to contribute to the economic development in terms of food and nutrition security and industrialization. Targets to use technology and innovation in fishing and mari-culture, and product development to increase access and availability of fish & fish products
- **Policy priorities in fisheries**
 1. Increase production and productivity: sustainable development of the EEZ fisheries and mari-culture-
 2. Value addition and new products
 3. Enhance market access for fish and fisheries products
 4. Enabling policies and legal framework
 5. Research

Key Strategy Priorities in Fisheries

- **Strategic priorities in fisheries**
 1. Increase production and productivity:
 - i. sustainable development of the deep sea/ EEZ fisheries through developing small scale fishers, joint ventures
 - ii. Aquaculture development –use of technology. in mariculture, cage culture, new species and systems with greater profits and low impact on environment
 2. enhanced value addition and market access- reduced post harvest losses, product development and competitive market – assessment, high value products, marketing systems
 3. Support to Fisheries Research

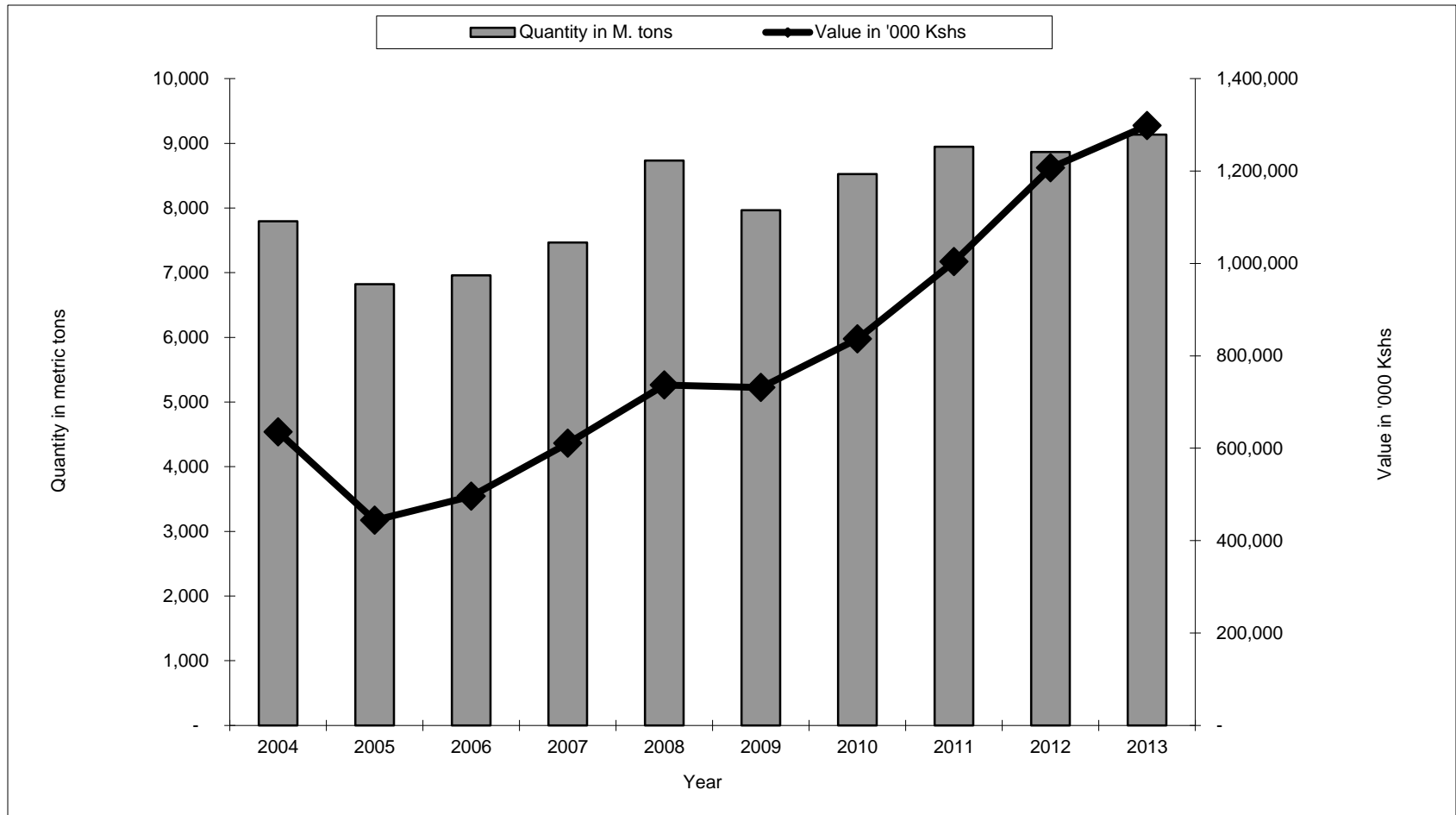
Kenya's Marine Zone

- Kenya has an 640 km (rugged 880 km) coastline and an Exclusive Economic Zone (EEZ) of 200 nautical miles (a total area of EEZ is about 230,000 Km²)
- Coastal and marine is the new horizon

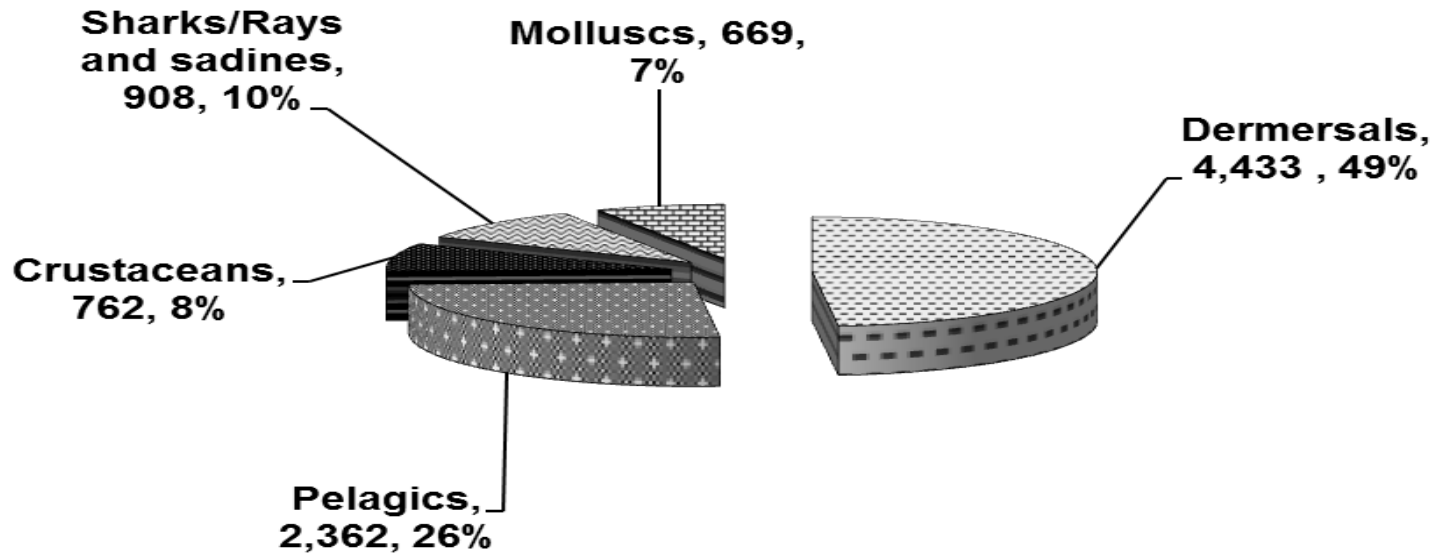


- The estimated potential of tuna fishery is 150,000-350,000MT (FAO, 1982, Habib G., 2002)
- Kenya's marine fisheries is artisanal with low investment in technology
- research to improve the fishing methods and gears

Trends of artisanal marine fish production by quantity and value 2004-2013 (SDF, 2014)



Major of marine fish species landed in 2013 (SDF, 2014)



Trends in Research and Management Responses: marine: 1. capture fisheries

- Research in marine fisheries has included fish stocks , Fish biology, and Limnological surveys. These have been ad hoc
- The findings have contributed in shaping the management responses witnessed by the development of management measures and the regulations
- Kenya got its 1st Policy in 2008; The National Oceans and Fisheries Policy:
- ring-fences the territorial sea for domestic small scale fishers, but it remains under-utilised
- Joint ventures and Fisheries Partnership Agreements
- *We have a challenge of inconsistent data for deep sea fishing necessary for Licensing regimes and resource rent charges*

Trends in Research and Management Responses: 2. Mari-culture

- Research products have been developed in the following areas:
- Prawn culture- *P. Indicus* was found very suitable but only 2 commercial farms (1989)
- Crab and mullet, milk fish –adopted by 2 groups (2002)
- Sea weed farming- pilot adopted
- Oyster farming- (1990s) failed
- Pearl farming-(1990s) successful but not adopted due to high capital investments
- Artemia cysts- successful trials but not commercialized
- *Upscale to commercial investments has not been successful*

Trends In Research and Management Responses: Fisheries Legislations

- Crown Fisheries rules
- Fish protection rules 1929 (revised 1931)
- Fish Protection Act 1902
- Fish Protection (Oysters) Rules (Cap.378) 1962.
- Fish Protection (Registration of Fishing Craft, Sea Fisheries) Rules 1952
- Fish Industry Act 1968
- Fish Industry (Shell & Live Coral Conservation) Regulations, 1971)
- Fish Protection (Oysters) Rules (Cap. 378) 1986
- Maritime Zones Act, 1989 (Act No. 6 of 1989).
- Fisheries Act, Cap 378 1989 (Revised 2012).
- Co-management, strengthening marine surveillance, training
Management

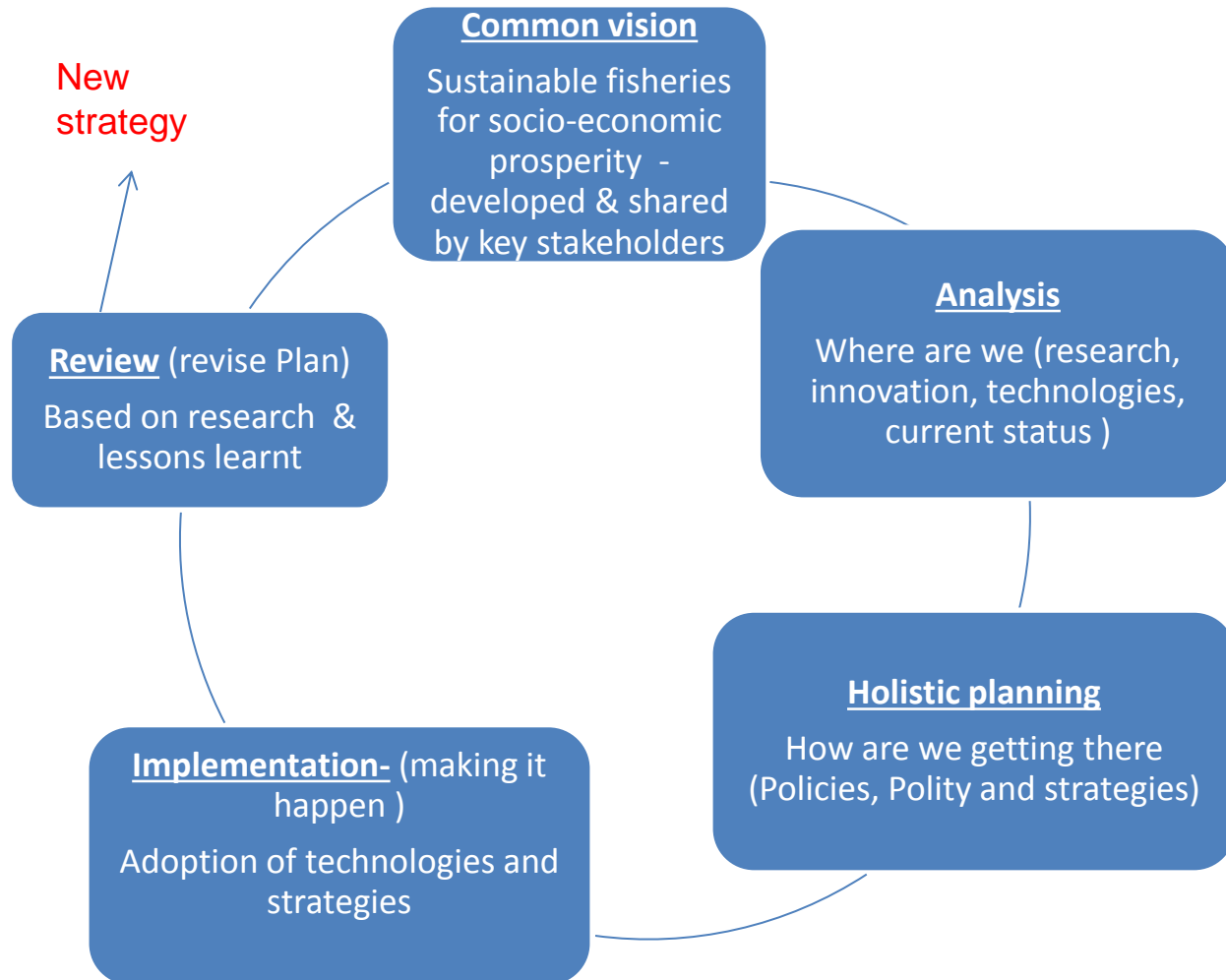
Factors Influencing Technology Adoption

- There are two types of diffusion effects:
- *Innovation*: trial of product caused by advertising and promotions,” whom do we involve in the trails, how do we advertise”??
- *Imitation*: trial of product caused by word-of-mouth recommendations and reputation- are the models theoretical or do they meet the needs of the user??
- How do we move to increase interactions and adoption of technologies to benefit

Opportunities for Research

- Support in policy and legal framework to support technology and innovation
- support in capacity building for offshore research -New products found in the areas beyond national jurisdiction,
- Urgent need for data to support policy decisions, resource rent& access framework
- Support for mari-culture- proposed marine hatchery development at the Coast
- Investors willing to venture into production and processing
- County governments willingness to support innovations to improve the lives of their people.
- Climate change
- Trade regimes at national and international markets

Future: The Common Vision as Driver of Research, Management and Development Agenda



Future Policy for harnessing collaboration in technology use

- KMFRI as the lead agency in marine and aquatic research in Kenya to provide a platform for coordinating the multiple players for synergy
- Link with Universities teaching marine sciences to provide internship and supervision of student to reduce duplication, allow use of human resources & focus on priority need of industry
- Incorporate the industry (private sector, groups, SME) in order to bridge the gap between research and business opportunities
- Timely holistic products & dissemination– provide whole packages and models to suit industry.

Thank you for listening!