

REPUBLIC OF KENYA



MINISTRY OF AGRICULTURE, LIVESTOCK, FISHERIES AND COOPERATIVES

POLICY ACTIONS FOR BUILDING RESILIENCE OF FISHERIES DEVELOPMENT IN A CHANGING CLIMATE



CONTEXT: The fisheries sub-sector in Kenya plays an important role in the national economy. It is an important source of food, nutritional security, employment and foreign exchange. The fisheries and aquaculture sector in Kenya contributes about 0.8% of the country's gross domestic product (GDP). It is estimated that the sector employs 500,000 people directly, and supports about two million people indirectly, working as fishers, traders, processors, suppliers and merchants of fishing accessories and their dependents. In 2016, about 148,000 MT of fish were landed, valued at KSH 25.6 million. Aquaculture contributed about 15,000 MT while inland capture and marine capture accounted for some 108, 255 MT and 24,000 MT respectively. Most of the production (73.2%) is from the inland capture with Lake Victoria accounting for over 90% of this landing. Fish and fisheries products exports generated USD 85 million in foreign earnings in 2017.

Climate change and variability affect aquatic ecosystem/resources in Kenya, including; the life cycle, distribution and abundance of fish species, which has profound socio-economic and ecological implications to the people, economy and nature. There has been experience in decline of fish catches over the past decade though this could be attributed to both climate and non-climate factors. Harmful algal bloom has caused fish kills in the North Coast of Kenya. The mangrove cover has shrunk by 17.5% compared to the 1985 levels.

PRIORITY POLICY ACTIONS

1. **INTEGRATE** fisheries into climate change adaptation and mitigation plans at national and county levels.
2. **DEVELOP** and implement evidence-based Integrated Ocean Management Plans.



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RESEARCH PROGRAM ON
Climate Change,
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TRENDS AND PROJECTIONS: Kenya's average annual temperature has increased by 1°C since 1961, though this hides considerable variation. Projections suggest further increases in mean annual temperature of 1.5°C to 2°C by 2030 and up to 3°C by the 2050s. Greenhouse gas (GHG) emissions at the current rate are projected to raise the global average surface temperature by 2.6-4.8°C by 2100. The ocean is likely to warm by 2-7 times compared to 1970 levels. Small island developing states (SIDs) and the countries along the eastern coast of Africa, including Kenya, are very vulnerable to the effects of climate change. The IPPC has reported a decrease in dissolved oxygen in the marine environment by 0.5-3.3% between 1970-2010. Sea level rise is likely to result in increased incidences of soil/beach erosion, flooding, salinization and cyclones in the absence of major adaptation measures. Increase in sea surface temperatures will influence the recruitment, spatial distribution and abundance of fish stocks. Fisheries production is decreasing at an approximate rate of 3% per decade globally.

INTERVENTIONS: Various interventions in fisheries include improving coastal zone management through an integrated approach, improving fisheries governance and management, strengthening collaborative fisheries management (co-management), rehabilitating coral reef, encouraging community-based adaptation, improving access to financial and credit services through community banking, diversifying livelihood and social enterprises, establishing efficient cooling systems, increasing small-scale fisheries value addition and minimising post-harvest losses.

Some of the interventions in sustainable aquaculture development include upscaling of cage culture production in Lake Victoria, mariculture development (including seaweed farming in South Coast, as well as finfish and crustaceans), improved fish breeding and development of disease resistant species, improved feed production and formulation, and establishment of centres aquaculture excellence.

CHALLENGES AND OPPORTUNITIES: Fish production in Kenya has shown a declining trend in the past two decades. In 2000, catches were over 200,000 MT, but current production is about 148,000 MT (2016). Lake Victoria, the main producer of capture fisheries, is experiencing a myriad of challenges, including eutrophication arising from inflow of nutrients into the lake, massive blooms of algae causing hypoxia in the deep waters of the lake, and overfishing and oxygen depletion threatening artisanal fisheries and biodiversity. Water hyacinth is threatening the entire lake. Nile perch, tilapia and Omena/Dagaa are important commercial species exploited from Lake Victoria. Other important sources of inland fisheries include Lakes Turkana, Naivasha, Baringo, Jipe, Chala and Kenyatta;



Rivers including Nzoia, Yala, Tana and Sabaki; besides, dams are also important. The potential of the Kenya Exclusive Economic Zone (EEZ) is least exploited due to limited technology to venture into the deep sea by the national fleets. Fishing by local fishers is confined to the nearshore reef fisheries. Local fishers lack improved fishing equipment to venture offshore, resulting in the nearshore marine fisheries being overfished. On the positive side, fish farming both from inland and marine waters is gaining ground. The challenge is securing improved fish seed and fish feed.

Despite the challenges facing the fisheries sub-sector, opportunities exist for increased fish production through improved production systems and increased investment in processing, value addition, efficient distribution systems and expanded market access to regional and international markets. Kenya is providing leadership in driving the sustainable ocean and blue economy agenda. There is great potential for Kenya to integrate the ocean aspects in its NDC and in integrated ocean management, including marine spatial planning. Kenya's EEZ has the potential for 150,000–300,000 MT of fish annually. This presents excellent opportunities for sustainable investments in harvesting, processing and value addition with a view to generating wealth, employment and food/nutritional security. Opportunities exist in sustainable aquaculture development including production of quality fingerlings and fish feed as well as fish farming as part of diversifying livelihood.

POLICY ACTIONS:

1. Integrate fisheries in the County climate change adaptations and mitigation plans and contribute in updating the National Determined Contributions (NDC).
2. Develop and implement evidence-based Integrated Ocean Management plans such as the sustainable blue economy strategy, Marine Spatial Plan (MSP), Locally Managed Marine Areas (LMMAs), and No-Take Zones.