

MARINE SCIENCES: STATE OF THE ART IN KENYA

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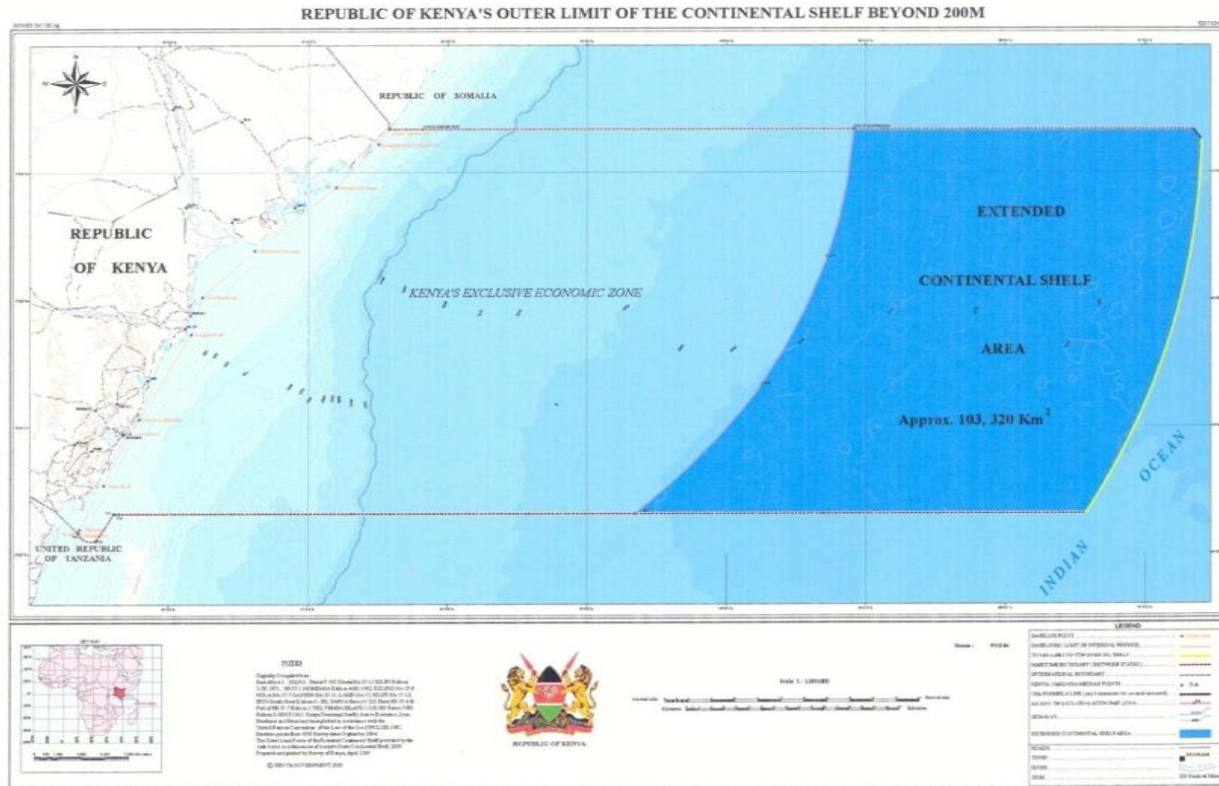
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MOMBASA

INTRODUCTION

The State of Kenya has a total land area coverage of about 582, 650 km² with a coastline of about 650km which borders with Somalia in the North and with Tanzania in the South. The coastal land area is about 32,447km² and lies in a semi arid zone. The Kenya's oceanward boundary extends to the 200 nautical mile Exclusive Economic Zone limit in accordance with the UN Convention on Law of the Sea (UNCLOS) proclamation and has further applied to extend to 350 nautical mile limit for exploitation of bottom ocean bed resources. The additional application 150 nautical mile gives Kenya an extra 103,000 km² making the new total ocean area up to 350 nautical mile, 245,000 sq km which makes about 42% of her total of land area . This makes Kenya a significant maritime country.

Kenya's Exclusive Economic Zone



MARINE SCIENCE RESEARCH FOCUS

- Focused to address the mandate of KMFRI and Kenya's Vision 2030.
- KMFRI which was established in 1980, is mandated under the **Science and Technology Act, Cap 250 of 1979** to “undertake research in marine and freshwater fisheries, aquaculture, environmental and ecological studies, and marine research including chemical and physical oceanography”.

Cont.

- The aim of Kenya Vision 2030 is to make Kenya “the globally competitive and prosperous country with a high quality of life by 2030.” It aims at transforming Kenya into “a newly-industrializing, middle income country providing a high quality of life to all its citizens in a clean and secure environment”.

Cont.

- The Vision is anchored on three key pillars: Economic; Social; and Political Governance. The economic pillar aims to achieve an economic growth rate of 10 per cent per annum and sustaining the same till 2030
- The social pillar seeks to create just, cohesive and equitable social development in a clean and secure environment. The political pillar aims to realise an issue-based, people-centred, result-oriented and accountable democratic system.

Cont.

- Based on the outcomes of KMFRI'S first Strategic Workshop in 1981 and its subsequent Strategic Plans, the latest expiring in June 2015, the following research activities were undertaken:
- Research to address food security, create wealth and employment, environmental health for social and economic human well-being;

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- **Priority given to establishing suitable fishing methods and gears for sustainable exploitation of the major groups or families of demersal and pelagic fisheries resources in an environmental friendly way, for possible investment;**
- **Re-orientate the research to focus on the sustainable exploitation of the pelagic fisheries as initially it were during the defunct EAMFRO than the stronger focus on demersal fisheries mostly in shallow coastal waters that followed;**

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- **There is need to undertake fish stock assessment and research on suitable gears to use**
- **Promote use of Fish Aggregation Devices and ring nets for pelagic fisheries and dropline gear for demersal fisheries in untrawlable fishing grounds**
- **Develop and transfer innovative technologies for value addition and reduction of post-harvest losses for employment creation, increased incomes and food security**

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- Undertake research on ecosystem services of critical habitats especially mangroves, seagrass beds and coral reefs besides their restoration;
- Undertake socio-economic research on coastal communities to understand their connection with coastal and marine natural resources and how to integrate this for their well-being sustainably besides finding ways of addressing gender issues.

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- Undertake environmental research that includes biological, physical and chemical oceanography and climatology to understand climatic change and how to adapt to their impacts.
- Undertake mariculture research in coastal areas to enhance capture fisheries production besides other economic mariculture productions such as seaweeds

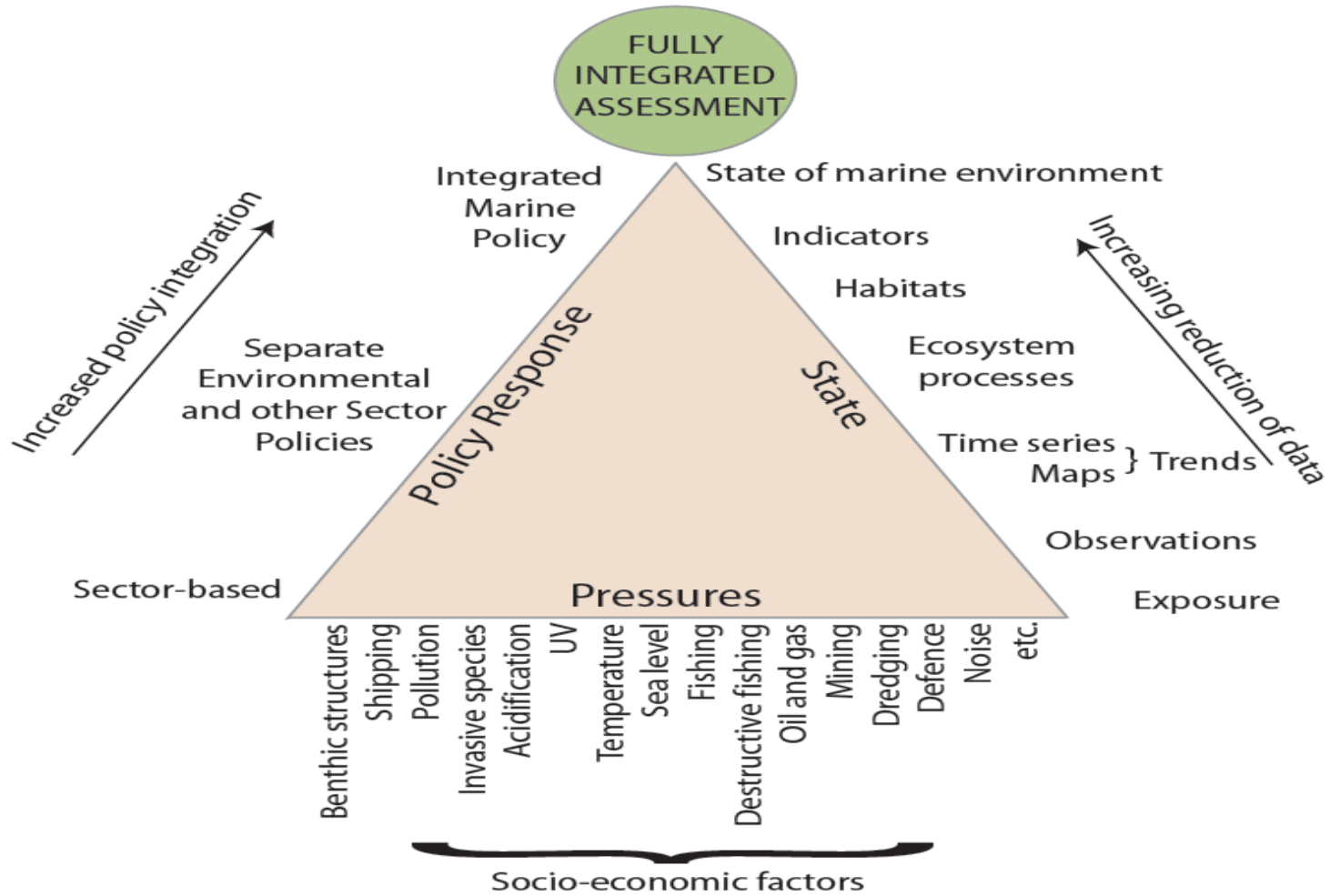
INTEGRATED ASSESSMENTS

**WHAT SCIENTIFIC PROCESSES/MODELS DO WE
USE TO ENSURE WE INTEGRATE THE THREE
PILLARS OF VISION 2030 IN TERMS OF
MARINE SCIENCE RESEARCH FOR SOCIETAL
BENEFITS?**

Cont.

- The nature of these scientific processes/models must have abilities to integrate ecological systems, socio-economics for human well-being and governance/policy. These scientific processes/models are: Ecosystem Based Management (EBM), Integrated Coastal Management (ICM) which is also commonly referred to Integrated Coastal Zone Management (ICZM) or Integrated Coastal Area Management (ICAM), and Ecosystem Approach to Fisheries (EAF). All these are based on multidisciplinary research involving multiple sectors and agencies acting in a participatory way to ensure that the natural resources and the health of the environment support human well-being in a sustainable way.

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DEFINITIONS OF EBM, ICM AND EAF

“ The ecosystem approach is a strategy for the integrated management of land, water and living resources that provide sustainable delivery of ecosystem services in an equitable way”

EBM

Ecosystems based management is concerned with the process of change within living systems and sustaining the services that healthy ecosystem produce. Ecosystems based management is therefore designed and executed as an adaptive learning –based process that applies the principles of the scientific method to the process of management. In ecosystem –based management, the associated human population and economic /social systems are seen as integral parts of the ecosystem.

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ICM

ICM is part of EBM as the former is mostly part of integrated management of land, river drainage basins and coastal water which geographical definition restricts its extent to coastal zones . EBM extends ocean ward to 200 nautical mile limit as per UNCLOS and beyond in the international waters.

EAF

The Ecosystem Approach to Fisheries (EAF) is one of a number of concepts being developed to more comprehensively manage natural resources, but with a specific focus on fisheries.

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The three fundamental processes EBM, ICM and EAF include the three pillars of Vision 2030 i.e. Social, Economic and Political Governance and are therefore suitable for use to address the Vision 2030 objectives. Besides these three processes provide a further advantage of providing ecological values which are additional values since Vision 2030 addresses food security, environmental health, and wealth creation to support human well-being.

WAY FORWARD

Integrated assessments are value research undertakings for managing not only the human well-being aspects but also environmental health and sustainable use of natural resources, their conservation and management. It is therefore important to create longterm multidisciplinary databases for integrated assessments needs at national, regional and international levels. As developing country Kenya has benefited from partner projects e.g. the KBP, SWIOFP, ASCLME, FAO-EAF Nansen for data which can be used in integrated assessments.

**FINALLY
THANK YOU
FOR
LISTENING**