

Fish Production Systems and Water Quality, Pollution and Parasitic Effects on Farmed Fish in Nyeri County, Kenya

*A Proposal Submitted in Fulfillment of Requirements for
Doctor of Philosophy Degree of University of Nairobi
(Fish Science)*

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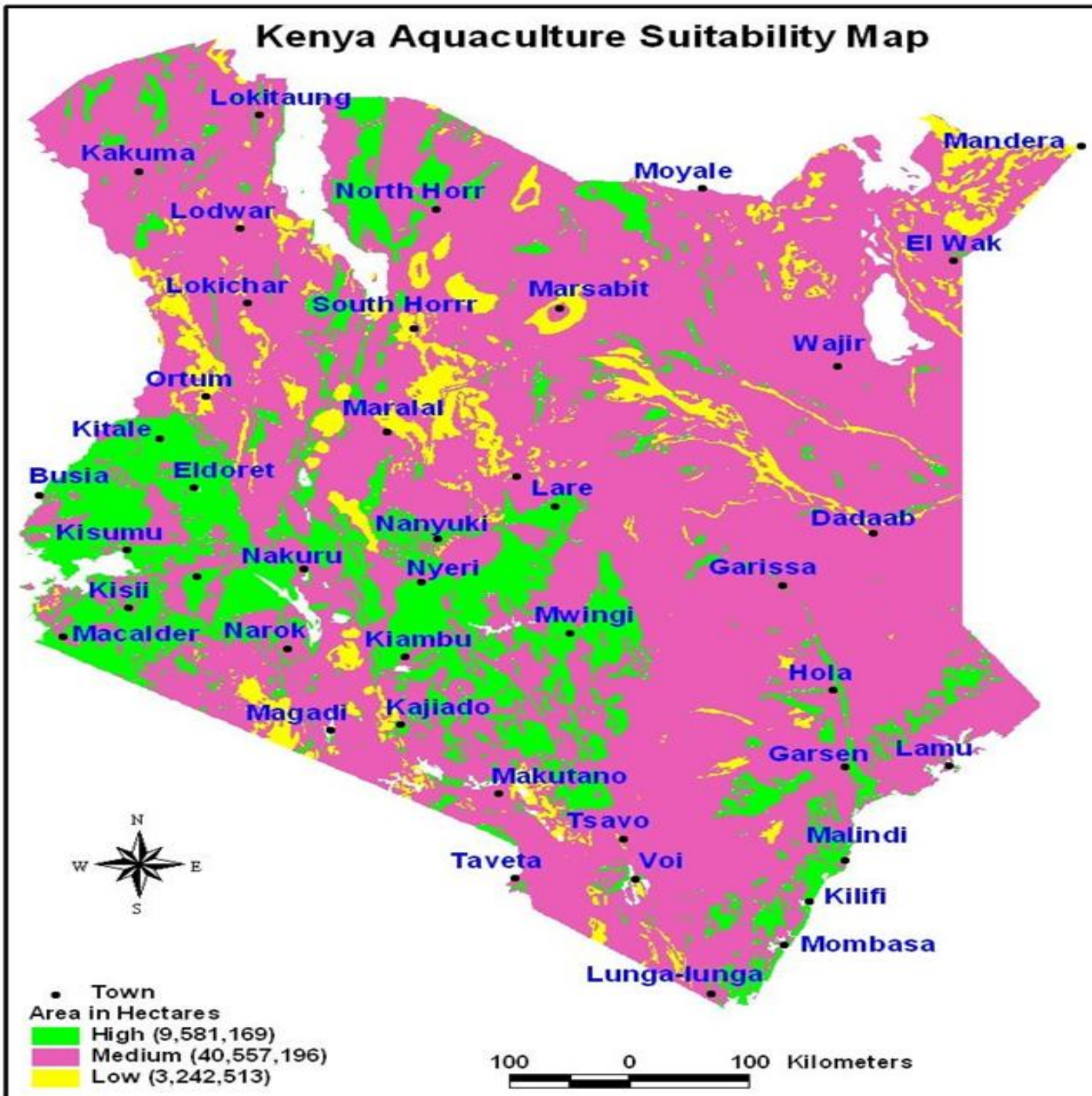
Introduction

- Climate and environmental changes (water unavailability and reduced land cover) have increased food insecurity (Gregory *et al.*, 2005)
- In developing countries food insecurity is attributable to growing human population, changing diets, increased demand for meat products and competition for resources (CARE, 2011)
- The fastest growing food production sector in the world is aquaculture (FAO, 1999)
- Fish is a vital source of protein and other nutrients for the ever increasing population

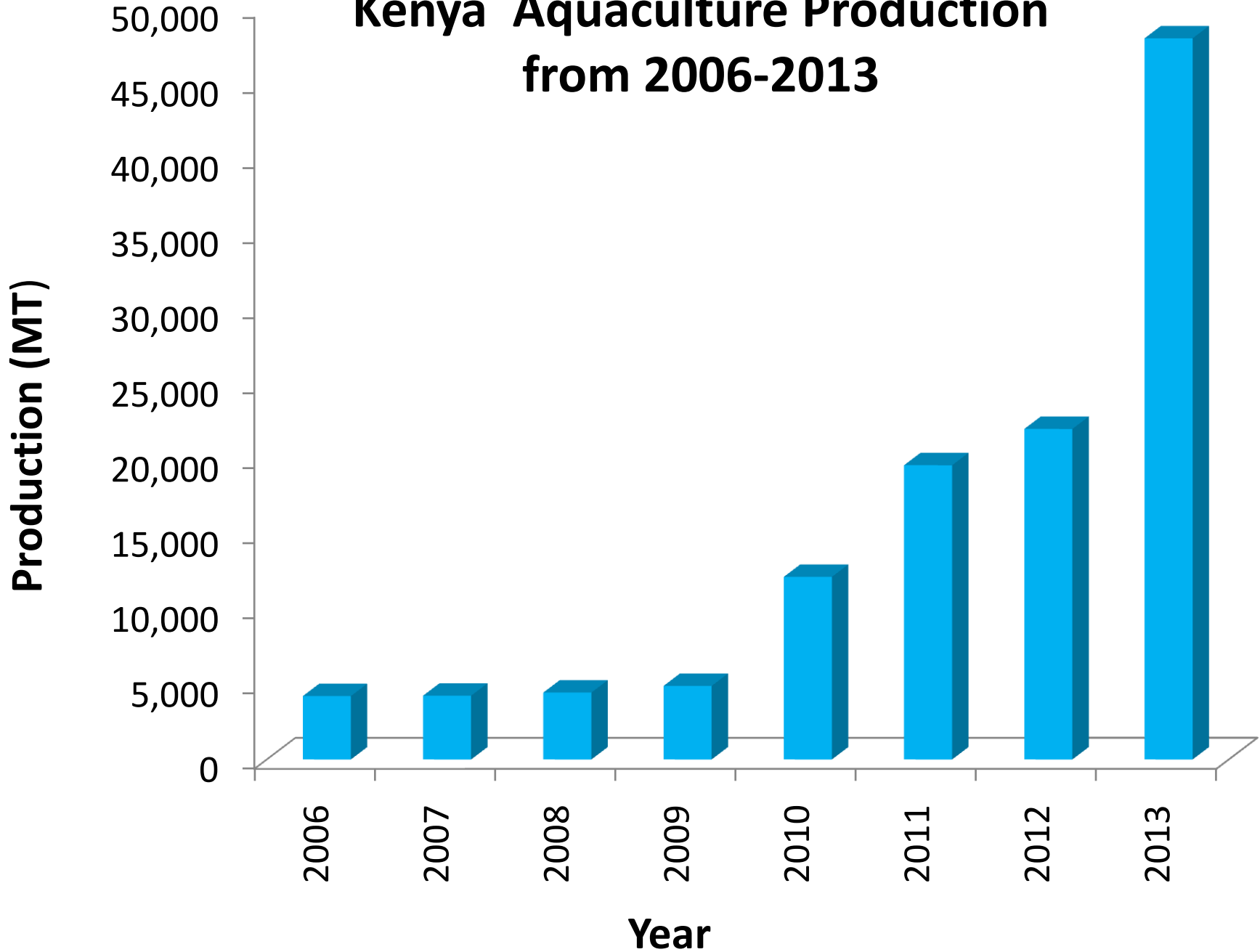
Introduction cont'd

- Kenya has water resources (Indian Ocean, lakes, rivers, swamps, ponds and other wetlands) with a high aquaculture potential for fish production
- In Kenya, Tilapia farming started in 1920s, and catfish and others thereafter (Mbugua *et al.*, 2008)
- The economic Stimulus Programme (ESP) has facilitated the construction of over 46,824 fish ponds in 160 Constituencies country-wide. This program has renewed interest in fish farming in the country
- Fish farming is practiced in Nyeri County for subsistence and commercial purposes

Kenya Aquaculture Suitability Map



Kenya Aquaculture Production from 2006-2013



Challenges in the Kenyan Aquaculture Sector

- Lack of need-based research
- Inadequate supply of good quality fish feed
- Lack of a comprehensive aquaculture policy
- Poor extension services
- Inadequate supply of good quality fish seed (fry and fingerlings) (Munguti *et al.* 2014)
- The explosive interest in fish farming stimulated by the ESP poses new challenges ranging from environmental pollution, biosecurity, and the spread of fish diseases.