

HOW CAN WE MITIGATE IMPACTS OF GLOBAL CLIMATE CHANGE ON MANGROVE FORESTS IN KENYA

M'rabu Elisha^{1,2}, Jared Bosire², Stefano Cannicci³ and Farid Dahdouh-Guebas^{1,4}

¹ Vrije Universiteit Brussel (VUB), Plant Biology and Nature Management, Mangrove Management Group, Pleinlaan, 2, 1050, Brussel, Belgium
E-mail: elishamrabu@yahoo.com

² Kenya Marine and Fisheries Research Institute, PO Box 81651, 080100 Mombasa, Kenya

³ Università degli Studi di Firenze, Dipartimento di Biologia Animale e Genetica 'Leo Pardi', Firenze, Italia

⁴ Université Libre de Bruxelles (ULB), Complexity and Dynamics of Tropical Systems, Avenue Franklin D. Roosevelt, 50, 1050, Brussels, Belgium

Periodic episodes arising out of global climate changes seem to pose a reasonable threat to the integrity of mangrove ecosystems. Mangrove macrofauna, which are residents of mangrove areas throughout their adult life, stand to be highly affected by the periodic episodes resulting from global climate change. During the 1997-98 El-Niño event, massive sedimentation due to erosion of terrigenous sediments caused mangrove die-back in many areas along the Kenyan coast. Mwache Creek, a peri-urban mangrove forest in Mombasa, was the most affected resulting in mangrove death over about 200ha. Functional biodiversity in El-Niño impacted sites was compared to reference sites (*i.e.* natural forests) in order to assess the impact of climate change to mangrove associated biodiversity. Transects from sea to land were laid in both impacted and reference sites, and relevant physico-chemical variables were measured and mangrove biodiversity determined as an indicator of ecosystem change. Mollusc densities and diversity were found not to be significantly different between treatments (impacted *vs.* reference sites) whereas crab diversity was significantly higher in reference sites than impacted sites. Faunal diversity of molluscs in impacted sites was found to be sustained by invasive shrubs while crab densities and diversity was highly reduced by the mangrove die-back.