Chapter 10
Revisiting Zanzibari Seaweed: Global Climate Change – Mitigation and Adaptation

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ABSTRACT

Well before island nations began to consider rising ocean levels, a feature of global climate change, they have been concerned with the allocation of water resources. The purpose of this chapter is to revisit the efforts of Zanzibar’s academic, as well as private and public institutions, as they promote environmentally responsible entrepreneurial projects, while advancing women’s economic empowerment. Analysis will examine the history of seaweed production and consider how Zanzibar’s seaweed farmers have recently responded to the dislocations associated with global climate change. This discussion will also consider to what extent Zanzibari seaweed production reflects the norms enshrined in the United Nation’s Rio + 20 platform, and the language of the UN’s 2030 sustainable development goals.

INTRODUCTION

As early as 2001, Zanzibar’s seaweed farmers reported that their plants, which thrive in cool waters, were ‘dying-off,’ (Ott 2018). Initially, the Zanzibari government listened with concern, but not much action was taken because, on balance, Zanzibari Seaweed exports were still thriving. According to National Bureau of Statistics, “in 2009, seaweed contributed 7.6 percent of Zanzibar GDP, 2nd after the [historically important] clove cash crop, (at 4.7 percent),” (FAO, 2014 and NBS, 2011)
However, the following year, reports emerged suggesting that Zanzibari seaweed was dying off. In subsequent years, as consistent measurement of both atmospheric and sea surface temperature revealed record-levels of heat, the matter of dying-off garnered increased attention.

Earlier research, first published first in 2015, sought to answer whether global climate change, (GCC), might be responsible for the decline in Zanzibar’s commercial grade seaweed. Verifying this claim was initially, very difficult due to wide fluctuations in weather, and the size of the seaweed harvest. For example, despite a general trend towards rising temperatures, and declining seaweed harvests, some years were better than others. For example, 2012, exports reached an all-time high of 15,000 tons. During the following year, yields were low, as a result, exports fell by approximately 25%, to 11,000 tons. Throughout those years, the general success of Zanzibar’s seaweed export market, meant that even in low yield years, Tanzania “was ranked as the 9th largest exporter of aquatic plants in the world - at 0.66 percent of the global share [in 2011] (FAO, 2014).” As such, the government showed concern, if not urgency, regarding the matter of rising GCC, and waning aquaculture.

However, during the 2015-16 year, research revealed that dying-off was accelerating, and that there was a 94 percent decline in the harvest of *Kappaphycus alvarezii*, commonly called Cottonii. Zanzibar’s most favored seaweed was in grave danger. Government officials began to reconsider the severity of the problem (Ott, 2018). Eliminating other plausible explanations, Dr. Flower Msuya, the lead researcher/director, promoter and coordinator of women’s seaweed production at Zanzibar’s Maritime Institute, insisted that GCC was having a definitive, and negative, effect on Zanzibar’s export economy. Further, she also argued the decline in Seaweed production is having a demonstrable cultural impact.

Seaweed harvesting employs over 20,000 persons, of which almost ninety percent, are women. According to Dr. Msuya, “women losing [are] their crop, losing their income.” As lead coordinator of the Institute’s Seaweed Cluster, Dr. Msuya suggests that helping the sisterhood of seaweed farmers adapt to GCC has become a serious fight ‘for gender equality’ (Ott, 2018). As GCC continues, checked only at the margins, the effort to sustain seaweed production may also highlight a larger, more fundamental threat. Namely, the struggle to adapt to GCC, is rapidly becoming an existential struggle. This is especially true for world’s island populations who seek to maintain their distinct island livelihoods, and unique cultural heritage, despite an increasingly inhospitable environment. According to the Goddard Institute for Space Studies:

With the exception of 1998, the 10 warmest years in the 134-year record have all occurred since 2000, with 2010 and 2005 ranking as the warmest years on record (McCarthy, 2014).
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