'Spatial planning for people and marine migratory species: sea turtles in the Natal-Delagoa Ecoregion as an example'

First Progress Report

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1. Context

The people that live in the Ponta do Ouro–Kosi Bay Transfrontier Conservation Area, which is shared by Mozambique and South Africa, face great challenge to secure social and economic stability. Moreover, the coastline, which includes key feeding, courtship and nesting grounds for sea turtles, is under pressure (from housing, port development and oil and gas exploitation). If not adequately addressed, this development is likely to jeopardize livelihoods and sea turtle conservation efforts made thus far. This research will use spatial planning tools for the management and conservation of sea turtles as migratory species with complex life-histories and multi-national distributions, while integrating the previously overlooked needs of local people. The purpose of this work is to assess how spatial planning, through the use of MSP and SCP, can be adapted to contribute to the conservation of wide-ranging migratory species, whilst optimizing social and economic opportunities. This will be explored through the four sea turtle species that occur within the South Western Indian Ocean (SWIO).

2. Activities progress

The main activities developed, from August 2021 until July 2022, involved mainly Activities 1 – Setting Conservation Targets and Activities 3 People's Perceptions on the Conservation of Sea Turtles and Their Habitats.

Activity 1. Setting Conservation Targets

Progress: Activity 1 has involved the establishment of contacts with Dr. Selina Heppell, from the College of Agricultural Sciences, Oregon State University. The contact with Dr. Selina Heppell has resulted in literature review, the evaluation of potential population model alternatives, and how best these respond to the development of a Population Viability Analysis (PVAs) model for sea turtles. And therefore, support the establishment of conservation targets for sea turtle's different life history habitats. Activity 1 also involved literature review for the collection of sea turtle's life cycle parameter values (e.g. age at maturation, mortality, annual fecundity, among others) for the four species of sea turtles (e.g. green turtles, hawksbill, loggerheads and leatherback turtles) in the SWIO. Two models have been evaluated but have not yet responded to the objective of setting conservation targets and their application with MARXAN.

Way-forward: Continue with the literature review and evaluating potential models: (1) elasticity analysis and (2) Potential Biological Removal, and their applicability, as well as chapter writing. I will submit the first draft of the chapter in mid-December 2022.

Activity 3. People's Perceptions on the Conservation of Sea Turtles and Their Habitats

Progress: Activity 3 involved the establishment of contacts with potential interviewees from the different Coastal Communities, Government, Universities, Civil Society, amongst other groups that were identified through as the interviews progressed (Figure 1). In total, through recruitment, consent and participation, a total of approximately 110 people were interviewed (Mozambique n=64; South Africa n=45).

Figure 1. Images of some of the interviews made: park ranger (1), woman fisher (2), turtle monitor (3) and craftsman, in the coastal communities living adjacent to the Maputo National Park

Of these, in Mozambique, the majority of the interviewees were members of local communities (n=35), followed by members of Government (n=10) and tourism operators (n=8: Figure 2). Within the coastal communities, the communities with the most members available to be interviewed were: Nhonguane (located along the western shores of the Maputo National Park - MNAP) and Ponta Malongane and Ponta do Ouro (located on the eastern shores of the MNAP). Nhonguane is considered as a fishing community, whilst Ponta do Ouro and Ponta Malongane, are communities that dependent mostly of tourism. In terms, of language used in the interviews, Portuguese was the most common (n=34), followed by Rhonga (n=24) and English (n=6).

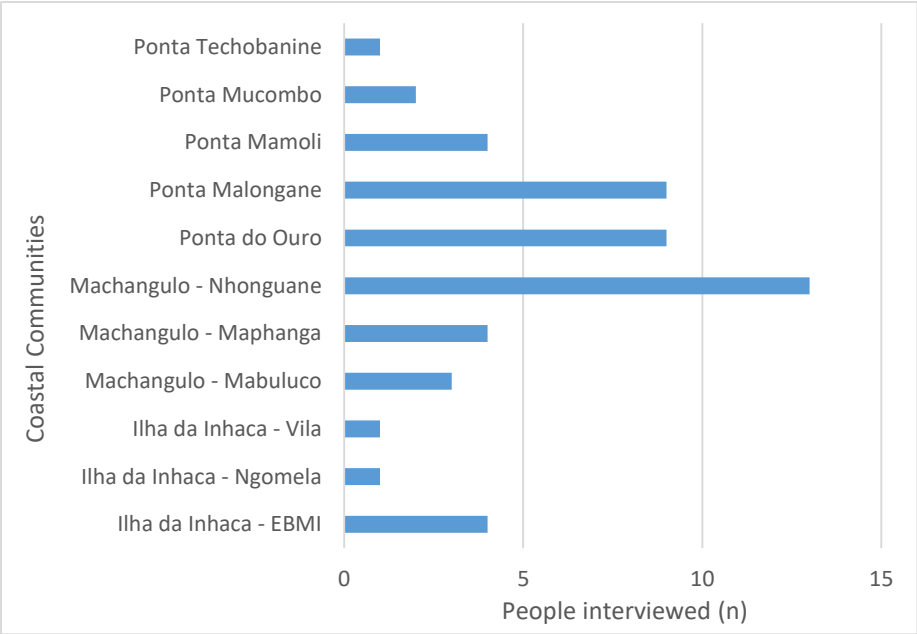

Figure 2. Number of people interviewed per coastal community in the now declared Maputo National Park

Activity 3 has also involved the presentation of preliminary results in the Sea Turtle Regional Workshop held in Sodwana Bay in November 2021 (Figure 3), and also in a student sessions held monthly by Dr. Ronel Nel in May 2022.

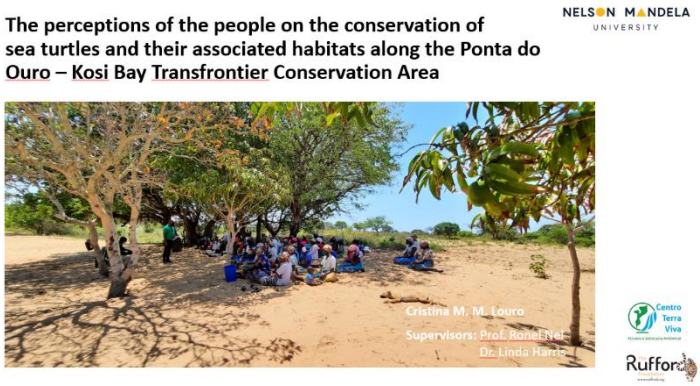

Figure 3. Presentation for the sea turtle regional workshop held in South Africa, November 2021

Way-forward: Continue with the translations, transcriptions and data analysis in the software NVIVO. I will submit the first draft of the chapter towards the mid of October 2022. Additionally, establish contacts with a video expert to support the elaboration of a 30-minute documentary.

3. Challenges

Although all efforts have been made to follow the activities plan proposed, the main challenges are:

1. The pandemic. Although it was easier to interview people from Government and Civil Society and other groups, it was not the same with members of the coastal communities. Interviews with members of coastal communities involved face-to-face interviews, which required travelling to the sites and ask for permission and for their availability on the field. Communication though mobile or WhatsApp was limited.
2. As a part-time student, I have to commit to my work related responsibilities and to unexpected work related challenges.