Co-producing knowledge

about climate variability and climate change along the east coast of South Africa

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1. Key Questions:

- How variant and comparable is Traditional Ecological Knowledge (TEK) from scientific findings about climate in the coastal areas?
- Are there opportunities for co-production of knowledge between scientific community and resource users?

Study conducted in Tshani-Mankosi fishing community in the Eastern Cape

2. Background

140 communities along the east coast of South Africa depend on marine living resources for their livelihood. Finding a balance in protecting the quality of marine and coastal environments while maximising their socio-economic benefits poses a regulatory challenge in the fisheries industry of this country. This is mainly due to disconnect in knowledge production from the scientific community and resource users. Using complex numerical models, scientist can provide an understanding of the regional state, variability and changes in coastal climate systems. The fishing behaviors in the traditional fishing communities along the coast are informed by the observation of coastal climate and how the coastal systems change on daily and seasonal basis at a local scale.

3. Objectives & Methods

To review scientific findings about climate variability/change and the associated impacts along the coast	• Literature review • Interviews with researchers / scientists • Historical Climatic records
To seek traditional ecological knowledge of the fishers	• Scoping visit with community • Vulnerability assessment workshop
To investigate relationship between the two distinct nature and sources of knowledge	• Fisher-scientist knowledge exchange workshop

4. Key findings

Variable	Trends		Consensus
	Fishers	Scientist	
Sea surface temperature	↓	↑	Disagreement
Wind	↑	↑	Agreement
Current strength, speed, and direction	—	↑	Partial Agreement
Rainfall	↓	↑	Disagreement
Sea level	↑	↑	Agreement

Table 1: Environmental variables affecting fisheries in coastal areas information from scientists and local knowledge.

Figure 1: Members of the Tshani-Mankosi community taking part in the vulnerability assessment workshop.

Figure 2: Women mussel collectors of Tshani-Mankosi community

5. Conclusion

Although paralleling TEK and scientific findings is limited by the differences in spatial and temporal scales, the experiences and perceptions of fishers appear to resonate with the existing trends observed by the scientific community.A network of community level monitoring of environmental variable along the east coat fishing communities together with scientific findings would:

1. Assist in detecting crucial gaps in climate variability/change research along the coast
2. Enhance interdisciplinary approach to coastal climate research
3. Improve community resilience to climate change impacts
4. Allow a sustainable management of coastal and marine environment