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A perspective from Mauritius: learning from cases of adaptive management in North Pacific fisheries communities

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Abstract

Mauritius is one of the Small Island Developing Countries (SIDCs) of the Western Indian Ocean and has made efforts to establish a resilient socio-economic system with the marine environment surrounding it through the “blue economy” concept. On the other hand, the dynamics of the marine environment and recent changes in ecosystems significantly affect the reality of development. In the North Pacific, climate change has been altering the structure and function of marine ecosystems.The alteration brought challenges to the institutions and governance framework in fisheries communities, but several cases seemingly “reflected” the changes and regained resiliency with adaptive measures. In this study, we investigate the approach of legal resilience of cases in the North Pacific. We focus on how adaptive legal structures assist fisheries governance in the North Pacific, especially in Japan, and respond to ecological changes and challenges. Reviews and semi-/unstructured interviews were conducted to collect necessary information for interpretations. Adaptive co-management practices and community-based models were found as effective approaches for enhancing resiliency with adequate legal designs. The past and present dynamics of the ecosystem and resources, as well as the economy, have shaped stakeholders’ adaptive responses and local governance strategies. Policy making and political support for the resiliency of fisheries communities should be done with the involvement of stakeholders, with the proper guidance based on scientific information in the dynamics of the eco-economic system. In Mauritius, the Community scale of Industry-Government-Academia Collaboration with “practical training” process in the dynamics may be effective for finding effective political support and designing the adaptive system.

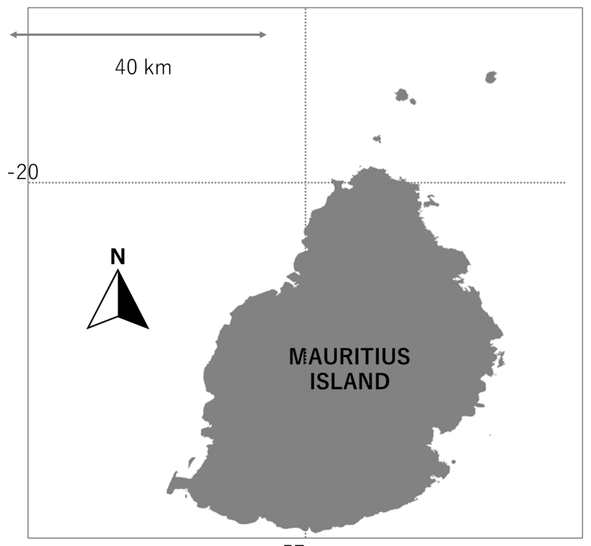


Photo by: Urvashi Dawoor (2025)

Introduction

Mauritius is a Small Island Developing Country (SIDC) promoting Blue Economy. However, its socio- economic resilience is affected by climate change in its marine environment. The issue is how can Mauritius build a legally resilient and adaptive fisheries governance system? Our approach adopted is to learn from cases of adaptive management in North Pacific Fisheries communities.

Objectives

- To investigate the approach of legal resilience of cases in the North Pacific, especially Japan.
- To identify transferable principles for building legal resilience in Mauritius’ Blue Economy

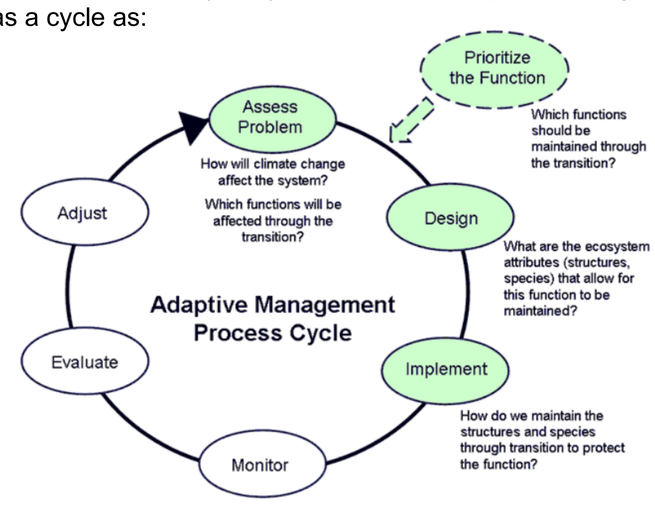
Methods

Definitions

Legal resilience is the capacity of laws and governance frameworks to adapt in response to disturbances.

Adaptive management centers on the concept of iterative learning resulting in improvements in management (Allan and Stankey, 2009; Pahl-Wostl et al., 2007). It is important in situations where management decisions must be made under uncertainty.

Lin and Pertersen (2013) described the adaptive management as a cycle as:

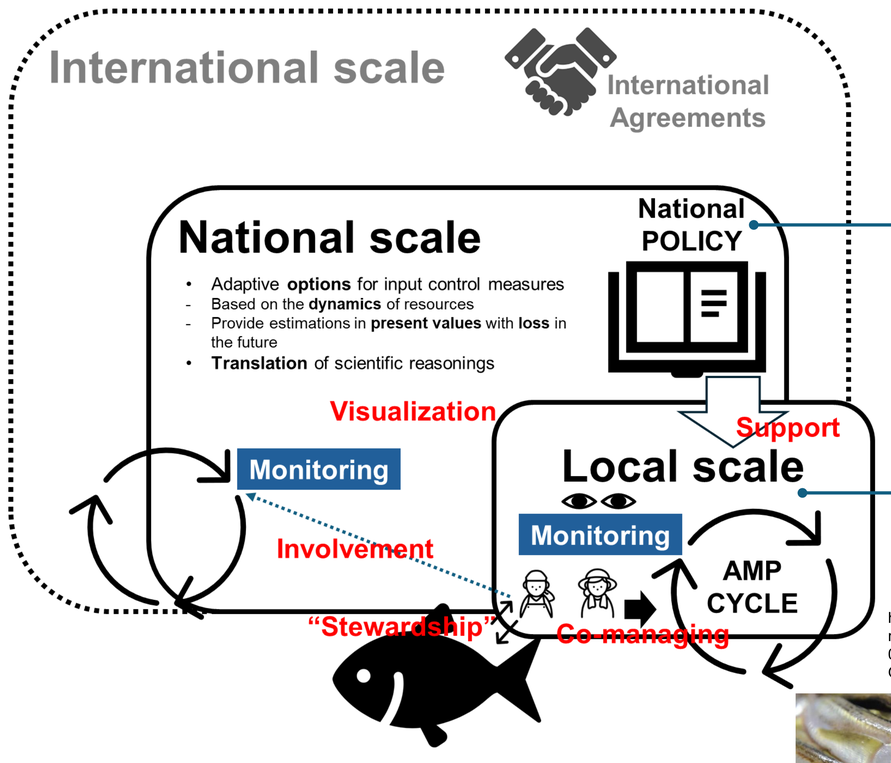


Lin and Pertersen (2013)

Based on
(1) Literature/policy reviews
(2) Interviewing stakeholders and government officers in case studies

Investigated in the “ideal” model to achieve adaptive management in fisheries then explore the way for the MAURITIAN adaptive management

An “ideal” model

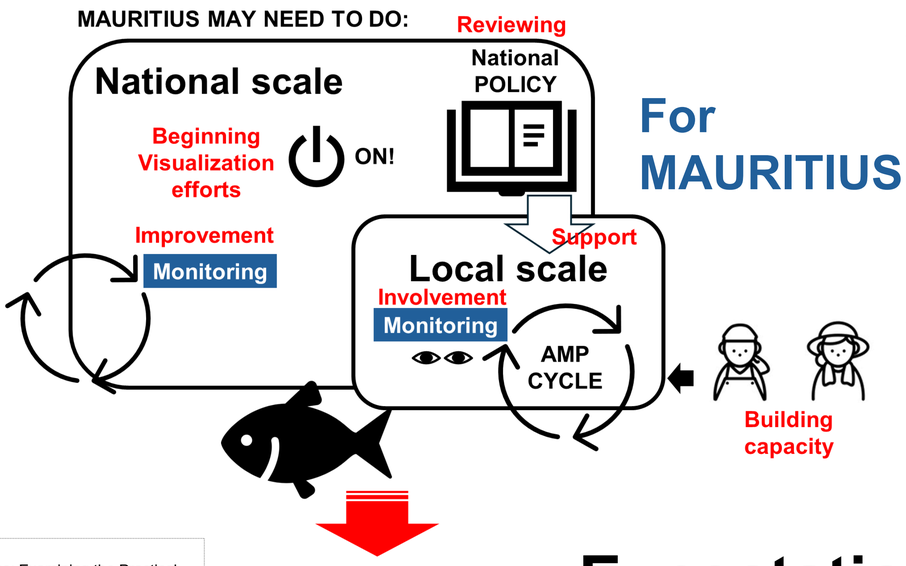


https://www.yomiuri.co.jp/economy/20250422-OYT1T50210/

Preliminary results

Our study demonstrates that effective adaptive strategies require actions at both international/ regional level and local levels.At an international level, both Japan and Mauritius are signatories to the United Nations Convention on the Law of the Sea (UNCLOS).At the regional level, the North Pacific Region, international bodies, such as the North Pacific Fisheries Commission (NFPC), help set the guidelines for regional cooperation and collaborative efforts for sustainable fisheries.

Japan's fisheries governance combines local co-management with national law. **The Fisheries Law** and **Fisheries Cooperative Association Act** principally govern Japan’s fisheries management. Not always successful in the reality, but it can be the base toward future adaptive management by making more efforts upon “visualizations”



For MAURITIUS

Expectations

Photo courtesy: NPFC, Mauritius Attractions Twisty Routes, U.Dawoor,

For important species like Japanese flying squid, the TAC Act of 1997 created the national TAC system, which establishes science-based fishing restrictions.

On the other hand

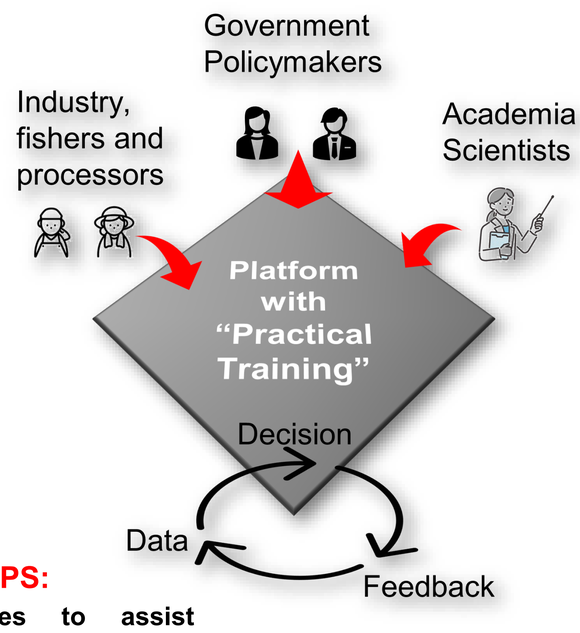
The 2025 Hakodate squid moratorium might be a significant challenge
Need to improve **“visualization”** and the adaptive management procedure in Japan

VS. JAPAN

But,

Recent years, catch has been declined again. The management measure by the community to the current resource status need to be reviewed.

The successful self-imposed three-year fishing ban by fisheries communities and stakeholders in 1990’s for sandfish in Akita, which temporally restored the stock, is an example of a community-led adaptive solution that has been shown to be effective. With its new Fisheries Act, which formalizes "Resource Management Agreements" to give fishermen legally binding, regional regulations, Japan is now formally developing this bottom-up strategy.



NEED TWO STEPS:

- **Design policies to assist stakeholders**: In order to address the governance issues that have been identified and develop specific policy suggestions that establish more participatory fisheries management in Mauritius
- **Establish a collaborative framework**: To promote robust Industry- Government- Scientists collaboration focusing on capacity building, communication and the co-design of adaptive management system.

A nested model with a working platform is necessary for effective legal resilience, in which national frameworks set conservation goals that are dynamically carried out by participatory and community-based co-management that can quickly adjust to changing circumstances. Costs for monitoring, communication and effectiveness of use of collected data might be challenging in the local context.

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