

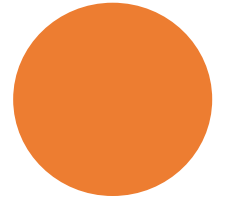
A Community-based Participatory Approach to Vulnerability Analysis for Pelagic Sargassum Influxes in the Eastern Caribbean: Composite Indicators, Drivers and Conceptual Frameworks

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Overview

- Introduction
- Methodology
- Results
- Discussion
- Conclusion





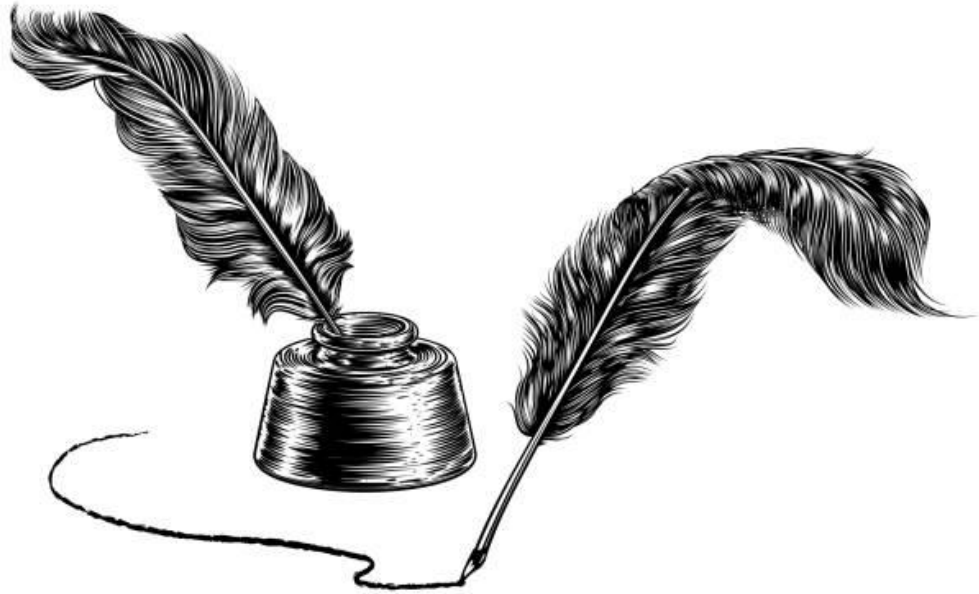
INTRODUCTION

Problem Statement

- In the last decade, the shores of the Caribbean have been inundated with anomalous amounts of pelagic sargassum.
- High influxes were experienced in 2011, 2014 and 2015 but reached unprecedented amounts in 2018.
- The record-breaking beaching events of 2018 demonstrated the extent to which pelagic sargassum is affecting the Caribbean region (**greater frequency, longer duration, larger quantity**).



Salgazzo the Sargassum

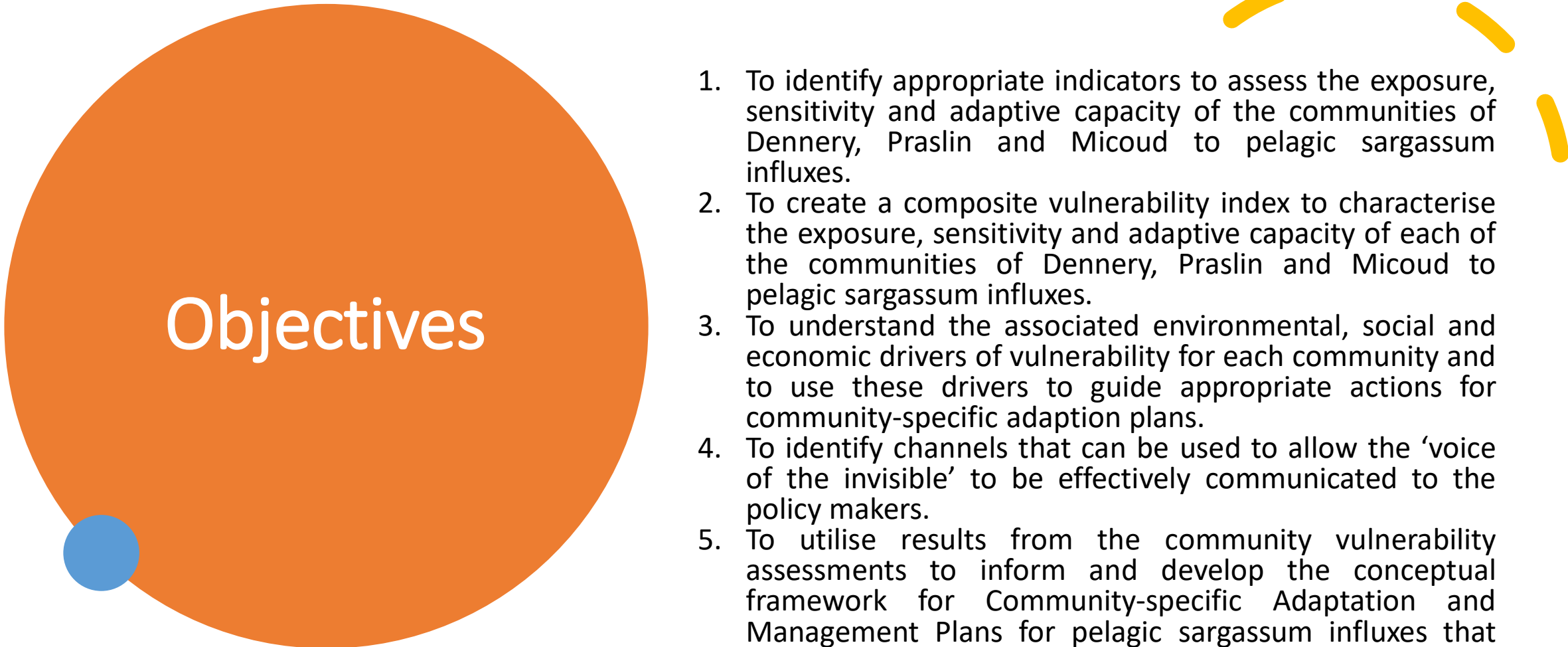


- Where did sargassum come from?
- When did these inundations begin?
- How do they occur?
- Why do they occur?
- What can we do about it?
- What are the advantages and disadvantages?

Aim

- To conduct a **participatory vulnerability analysis** for pelagic sargassum-influx events in **three rural communities** in **Saint Lucia**, in order to **characterise** the vulnerability and **assist** these communities in the preparation of **adaptation plans** that will be **specific** to the interests and priorities of the local populations.





Objectives

1. To identify appropriate indicators to assess the exposure, sensitivity and adaptive capacity of the communities of Dennery, Praslin and Micoud to pelagic sargassum influxes.
2. To create a composite vulnerability index to characterise the exposure, sensitivity and adaptive capacity of each of the communities of Dennery, Praslin and Micoud to pelagic sargassum influxes.
3. To understand the associated environmental, social and economic drivers of vulnerability for each community and to use these drivers to guide appropriate actions for community-specific adaption plans.
4. To identify channels that can be used to allow the 'voice of the invisible' to be effectively communicated to the policy makers.
5. To utilise results from the community vulnerability assessments to inform and develop the conceptual framework for Community-specific Adaptation and Management Plans for pelagic sargassum influxes that would feed into the draft National Management Plan for pelagic sargassum.



Methodology

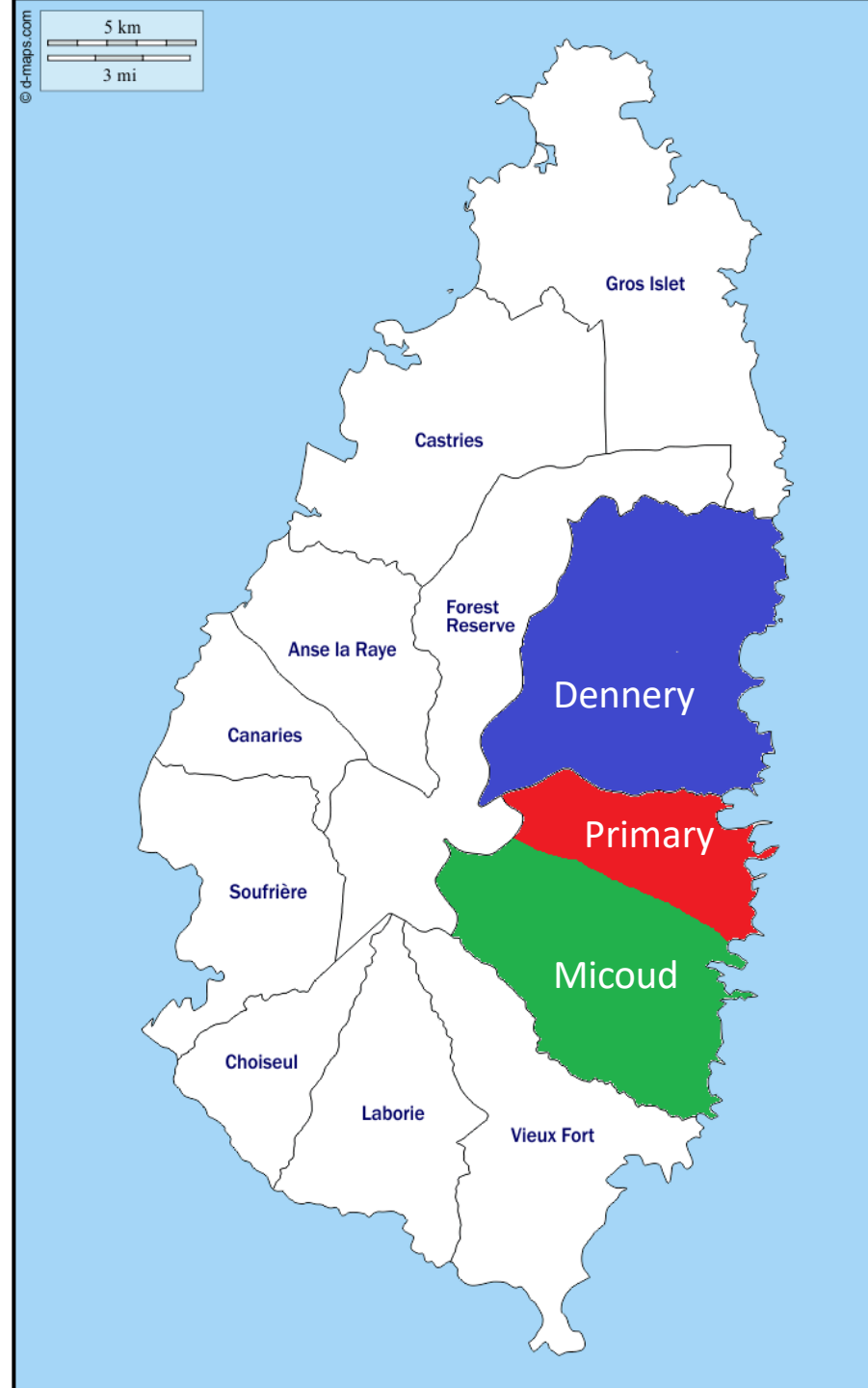
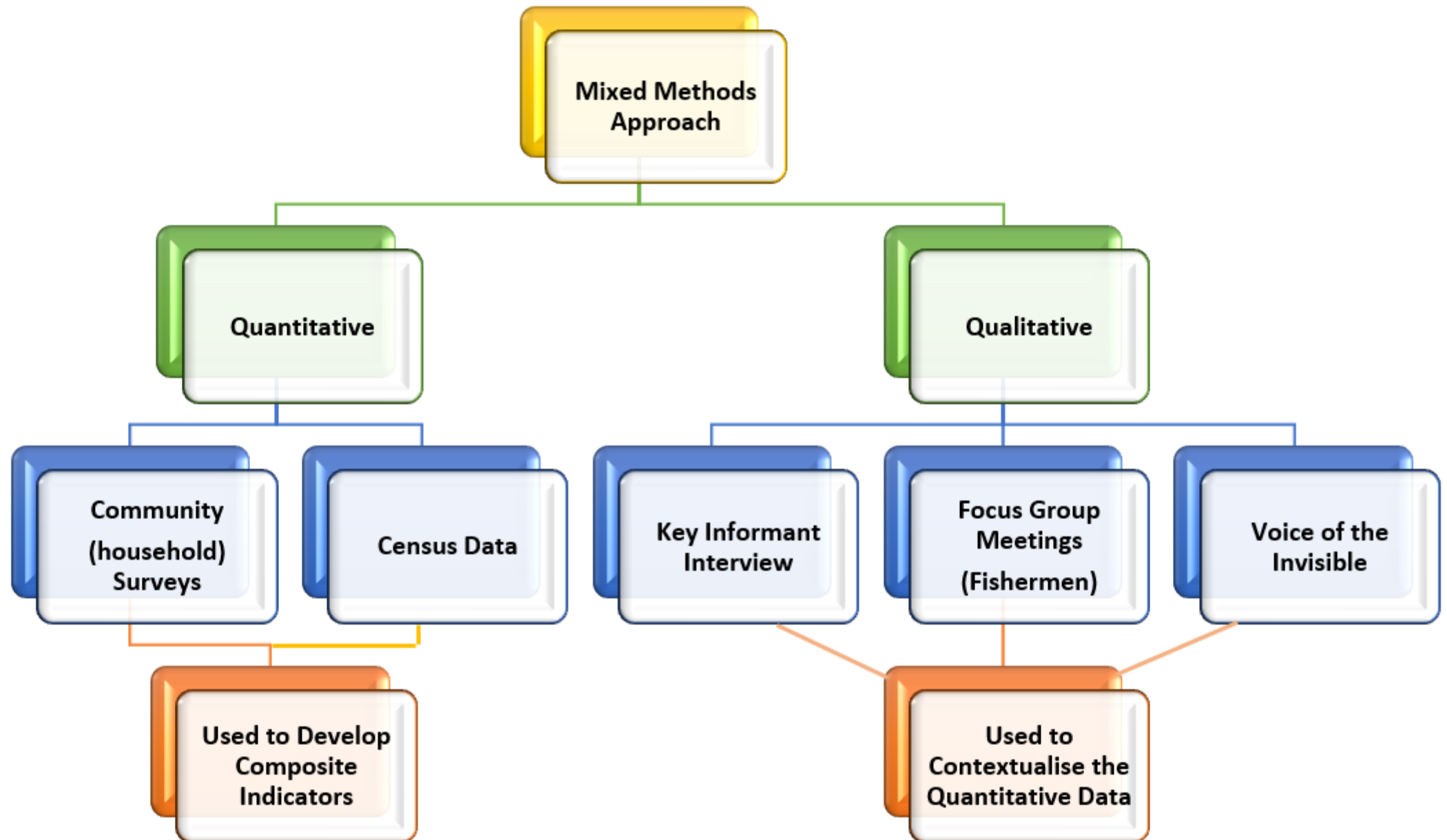
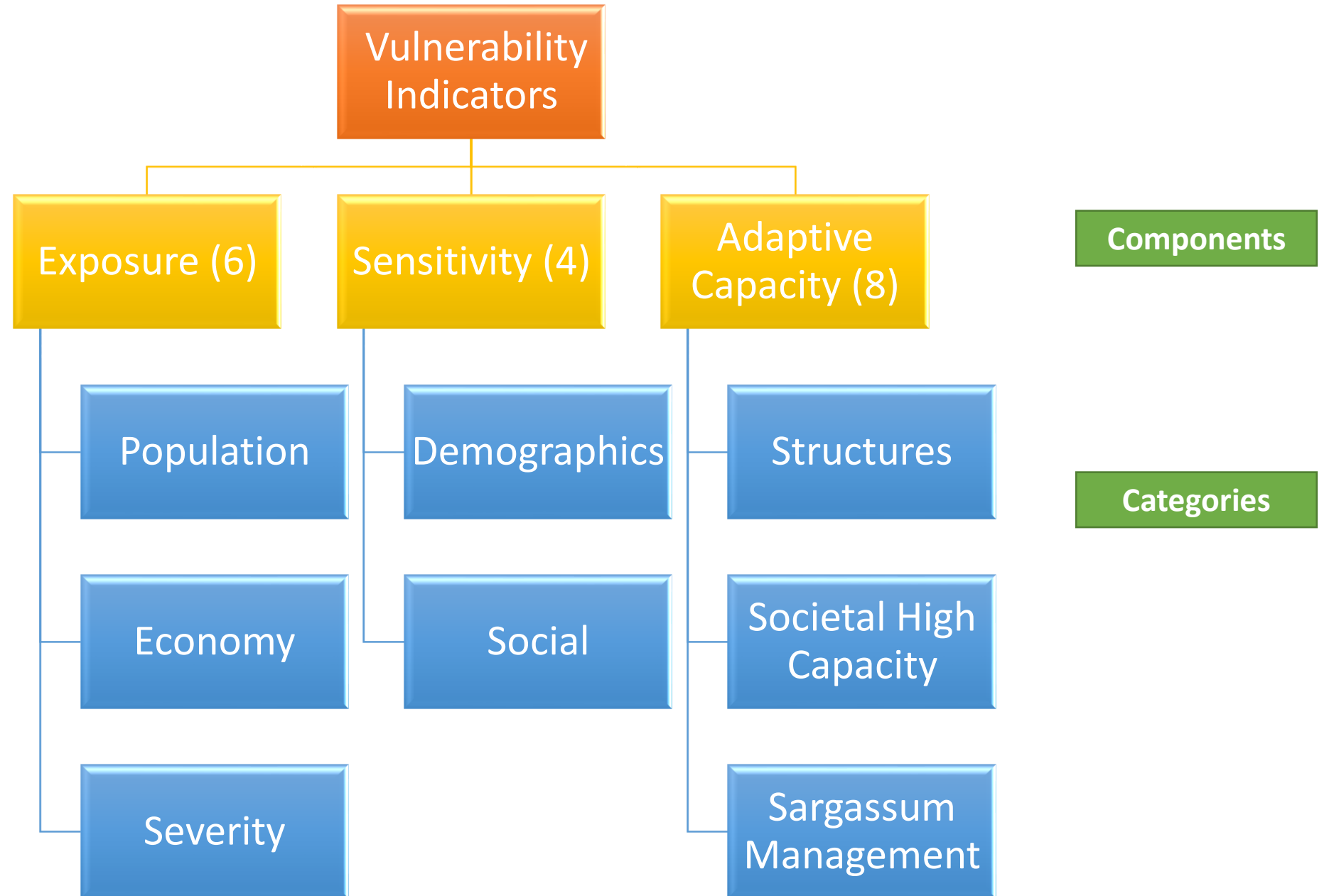
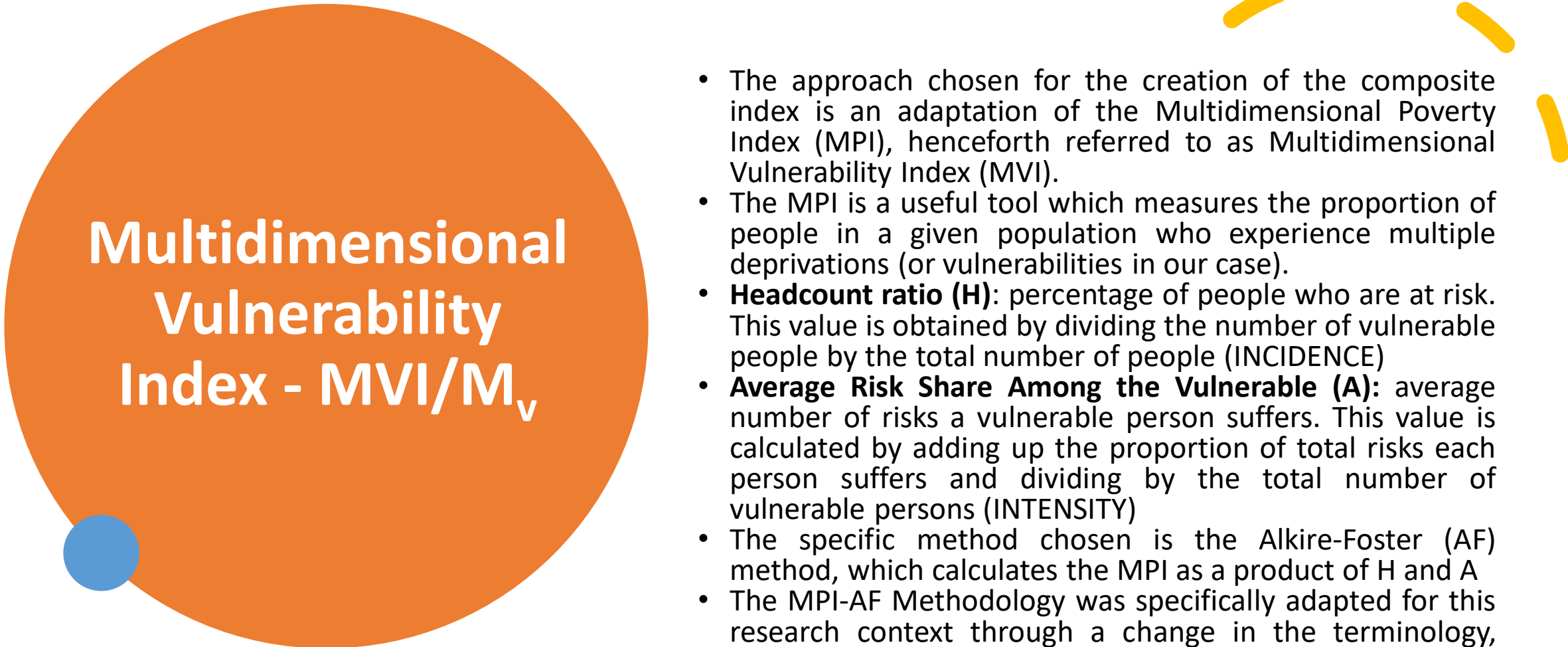


Figure 1. Site selection based on criteria: quantity, duration, urgency, value, persistence.





CATEGORY	INDICATOR
Population	At Risk Population
	Health Implications
Economy	Economic Lifelines (livelihoods) Affected by Sargassum
	Damage to Property and Household Appliances
	Economic Survival & Social Security
Severity	Loss/reduction of Uses of the Beach
Demographic	Coping Strategy
	Employment
Social	Attitude and Understanding
	Social Cohesion
Structures	Critical Facilities
Societal High Capacity	Level of Education
	Educational and Awareness Programmes and Capacity Building
	Access to Insurance Coverage (Livelihood/Business Insurance)
	Access to Loans
	Livelihood Security
	Income Generation from Alternative Uses
Sargassum Management	Sargassum Management Plan



Multidimensional Vulnerability Index - MVI/M_v

- The approach chosen for the creation of the composite index is an adaptation of the Multidimensional Poverty Index (MPI), henceforth referred to as Multidimensional Vulnerability Index (MVI).
- The MPI is a useful tool which measures the proportion of people in a given population who experience multiple deprivations (or vulnerabilities in our case).
- **Headcount ratio (H)**: percentage of people who are at risk. This value is obtained by dividing the number of vulnerable people by the total number of people (INCIDENCE)
- **Average Risk Share Among the Vulnerable (A)**: average number of risks a vulnerable person suffers. This value is calculated by adding up the proportion of total risks each person suffers and dividing by the total number of vulnerable persons (INTENSITY)
- The specific method chosen is the Alkire-Foster (AF) method, which calculates the MPI as a product of H and A
- The MPI-AF Methodology was specifically adapted for this research context through a change in the terminology, dimensions and corresponding indicators, the first cut-off and the scale at which it was applied.

**Multidimensional Vulnerability =
Headcount Ratio x Average Risk
Share**

$$M_v = H \times A$$





Results

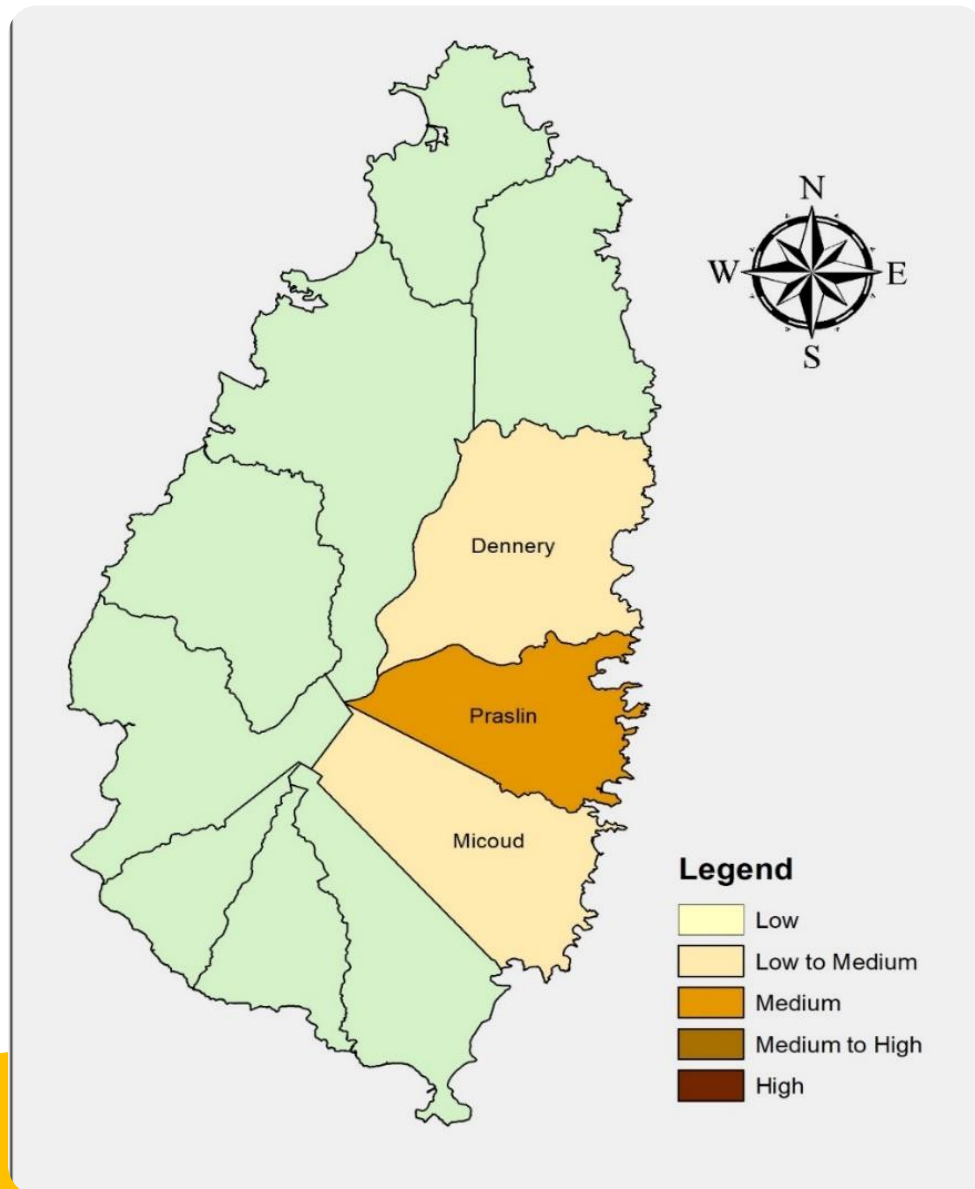
Composite Indicators

- MVI

- Dennery: 0.27

- Praslin: 0.44

- Micoud: 0.29



Other Important Trends

- Praslin also had the highest percentages of damage to property and household appliances (79%), poor social cohesion (62%), use of inadequate coping strategy (52%) and no participation in EAP and capacity building related to sargassum (0%).
- Dennery demonstrated the highest percentages for health implications (43%), loss/reduction of uses of the beach (98%) and limited understanding of sargassum (48%).
- Micoud showed the highest rate of unemployment (37%), no economic survival and social security (61%) and persons who had not completed a Secondary School level of education (64%).
- All the communities revealed high percentages in no alternative uses of sargassum and no knowledge of the draft National Sargassum Management Plan, while conversely communities had high percentages in access to insurance coverage and loans.



Discussion



Drivers of Vulnerability to Pelagic Sargassum Influxes

- Drivers or driving forces are the ultimate causes of a hazard.
- These factors can cause changes (drivers of change) within a system and thus influence its responses to a hazard.
- Drivers can be natural or human induced and describe existing conditions and trends within a system.
- The literature makes a distinction between direct and indirect drivers, with direct drivers having an overt and exact influence on the system e.g. education, while indirect drivers act upon one or more direct drivers of the system e.g. economic and social conditions

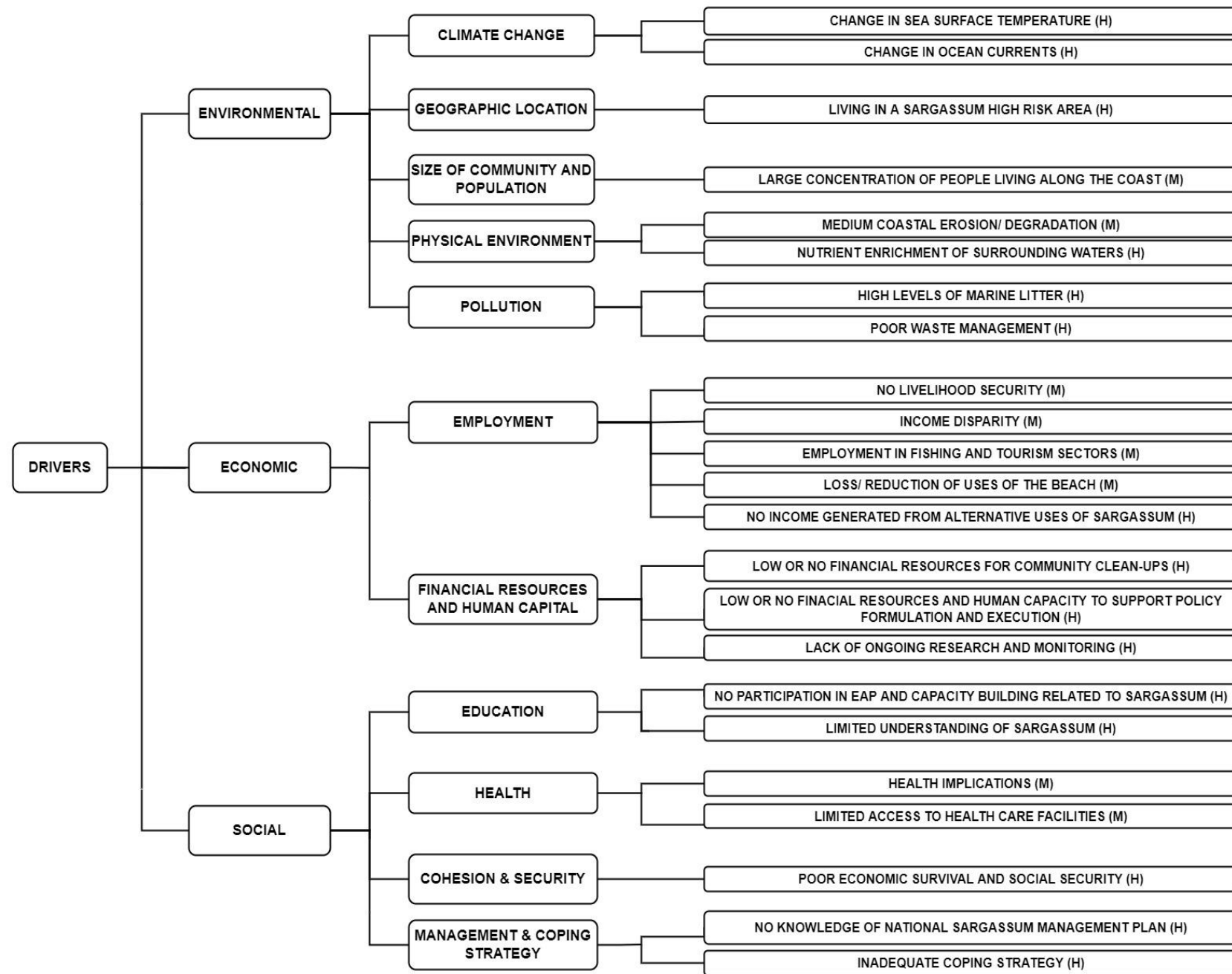
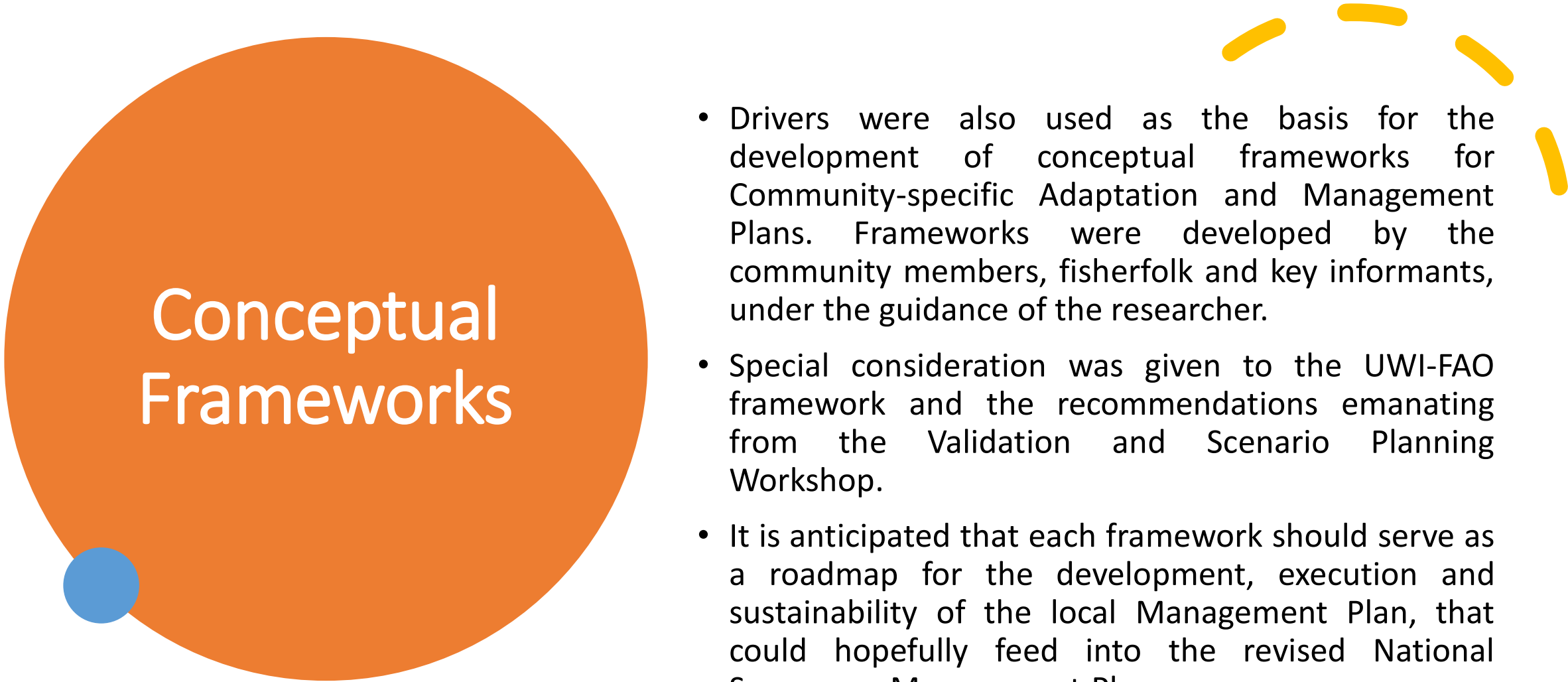


Figure 2a. Drivers of Vulnerability to Pelagic Sargassum Influxes in Dennerly



Conceptual Frameworks

- Drivers were also used as the basis for the development of conceptual frameworks for Community-specific Adaptation and Management Plans. Frameworks were developed by the community members, fisherfolk and key informants, under the guidance of the researcher.
- Special consideration was given to the UWI-FAO framework and the recommendations emanating from the Validation and Scenario Planning Workshop.
- It is anticipated that each framework should serve as a roadmap for the development, execution and sustainability of the local Management Plan, that could hopefully feed into the revised National Sargassum Management Plan.

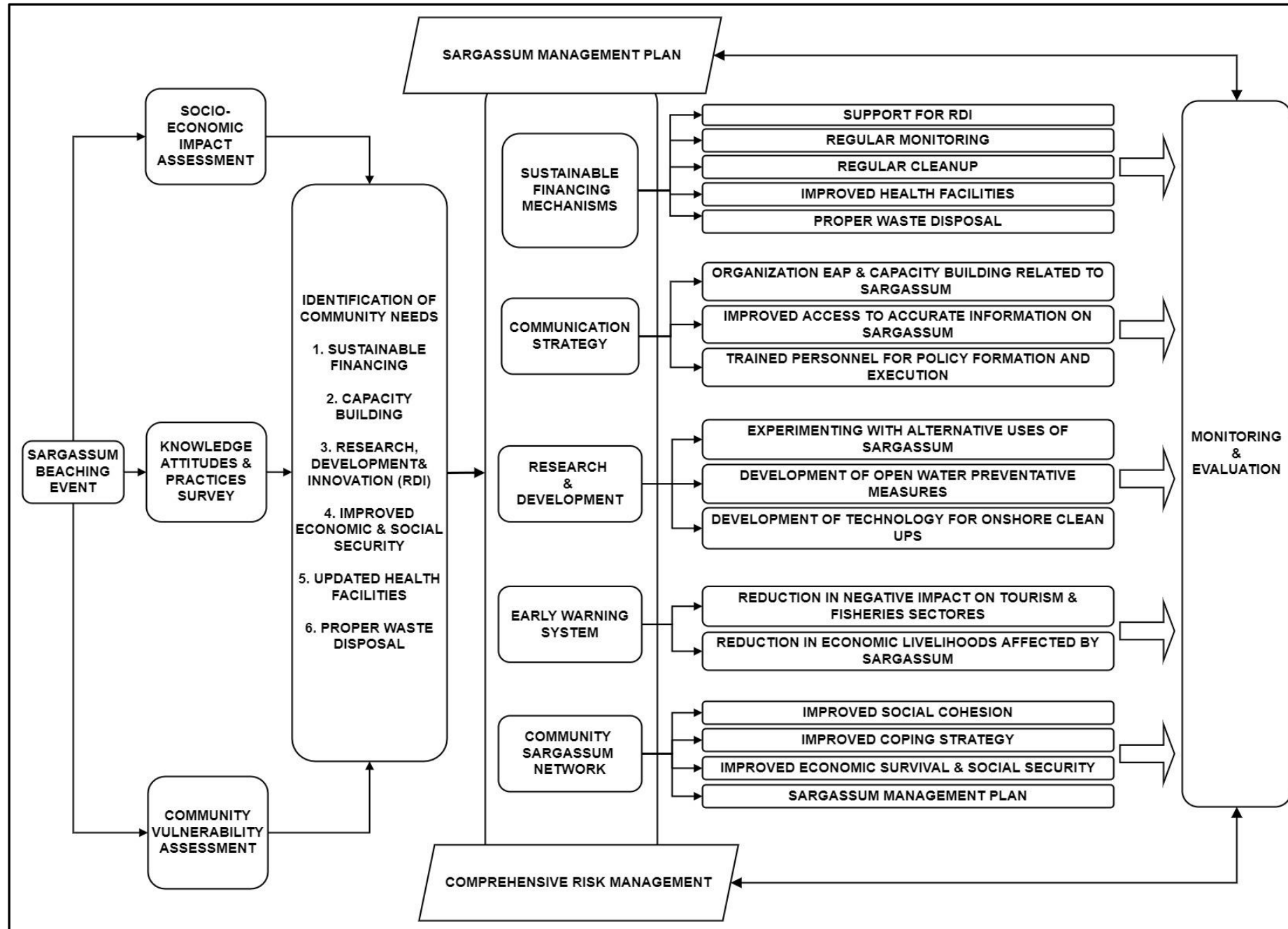


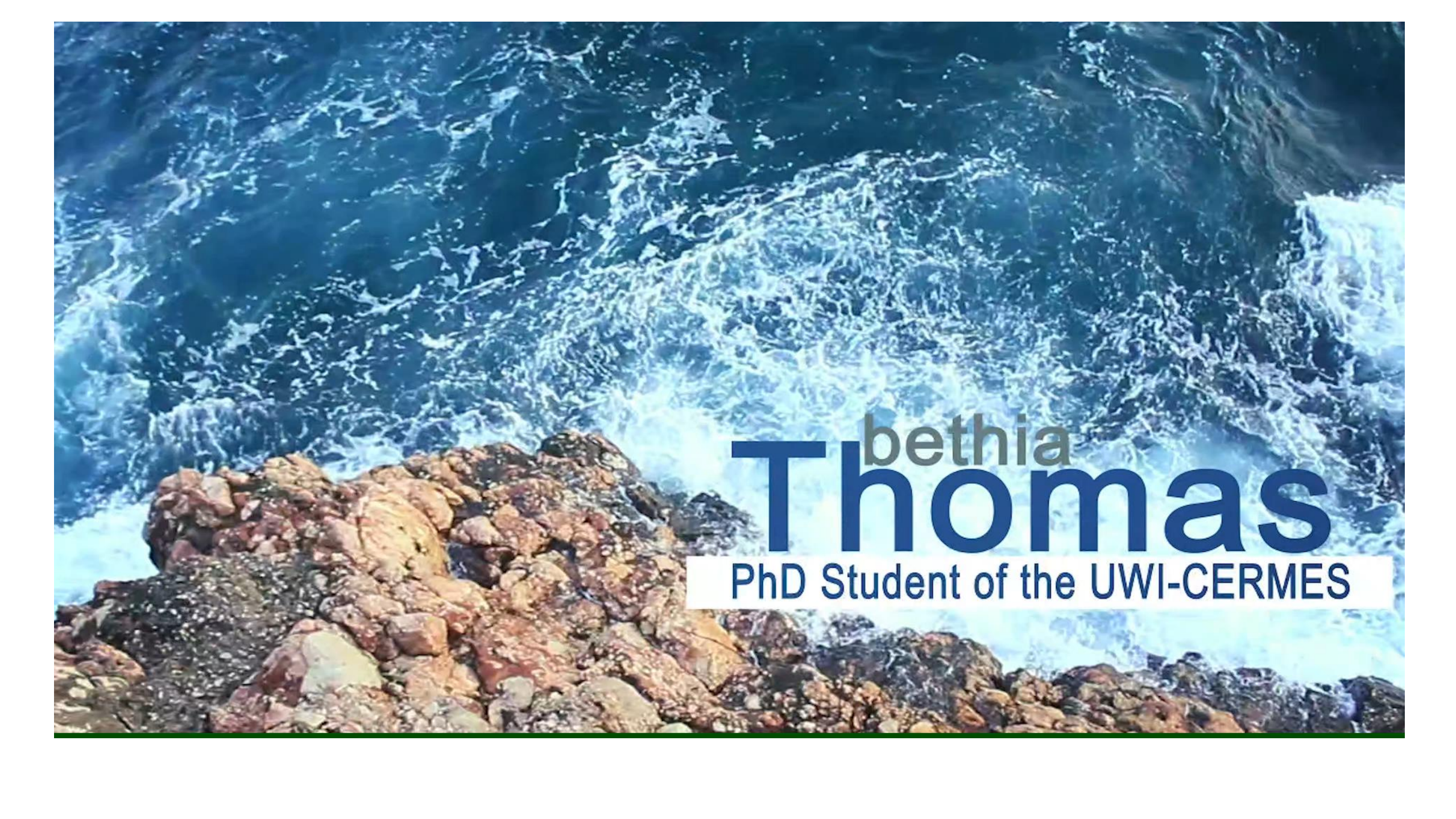
Figure 3a. Conceptual Framework for Community-specific Adaptation and Management Plan for Pelagic Sargassum Influxes - Dennerly



Conclusion

Final Thoughts

- The communities continue to demonstrate that despite existing vulnerabilities, most residents are interested in being actively involved in sargassum management.
- They welcome capacity building and training related to sargassum and continue to seek financial and research support for alternative uses of sargassum.
- A few however believe that sargassum is here to stay, and simply accepting it as a new part of life, is the best way forward.



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Thank You

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Questions





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