

# Belmont Forum Collaborative Research: Management of Disaster Risk and Societal Resilience (MADIS)

Design Process for Drought  
Resilience Indicators Survey

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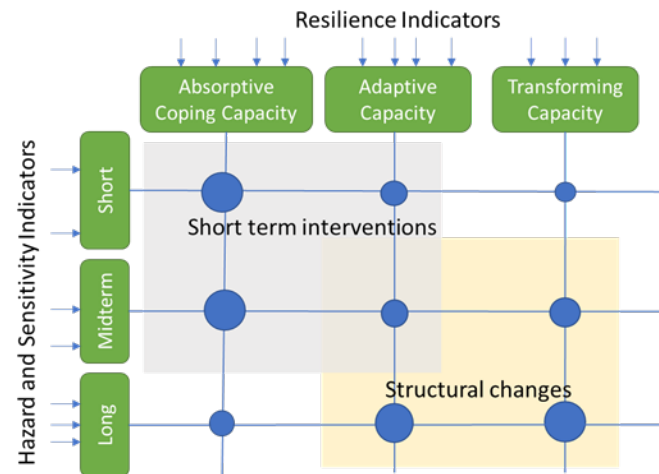
Michael Jacobson

Alina Rodriguez

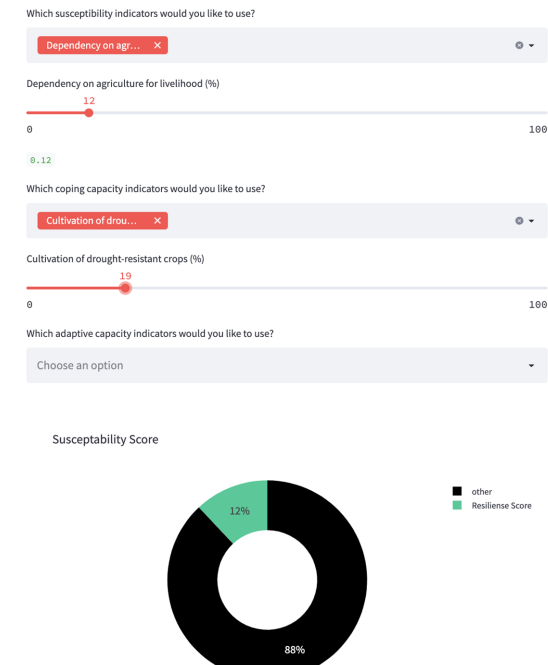
Penn State

# Objective

- Develop an easy-to-use Dashboard application for decision-makers to evaluate drought loss reduction and resilience strategies.
  - Reduce **ambiguity** in the relationship between hazard, vulnerability, and resilience.
  - Better identify the links between hazard, exposure, vulnerability, adaptive capacity, and relevant indicators.



## Drought Resilience DSS



# Country case studies – Morocco, SA and Namibia

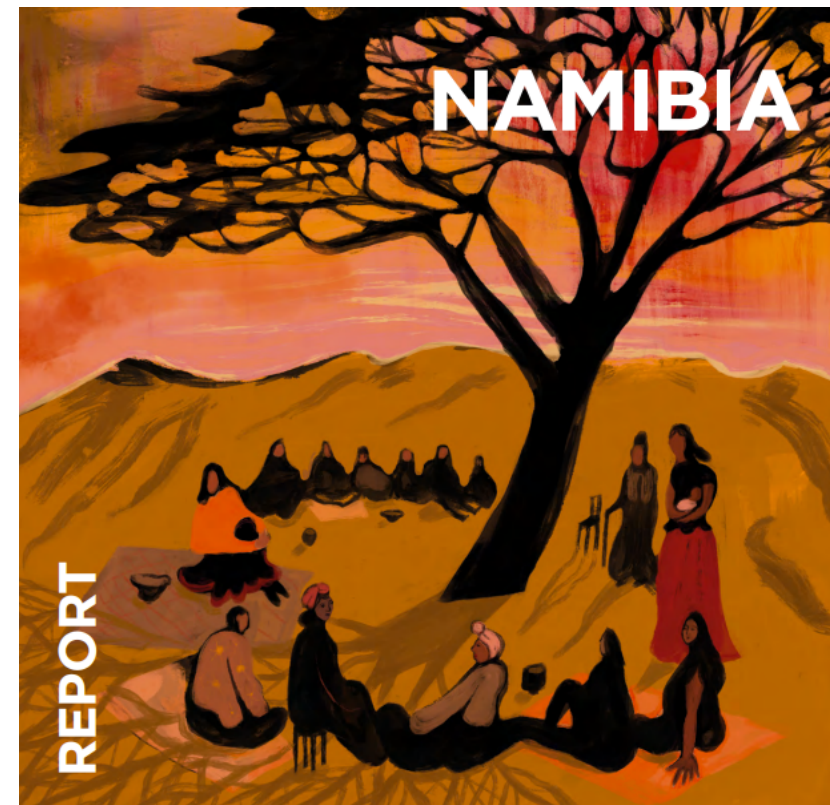
## Namibian drought policy review progress

- Stakeholder events
  - National and 6 regional consultations (1-day workshops)

Drought risk score worldwide 2020, by country\*

Search: <input type="text"/>	Records: 13 ▼
Characteristic	Score
Somalia	5
Zimbabwe	4.72
Djibouti	4.68
Mauritania	4.48
South Africa	4.44
Namibia	4.44

19/06/2023

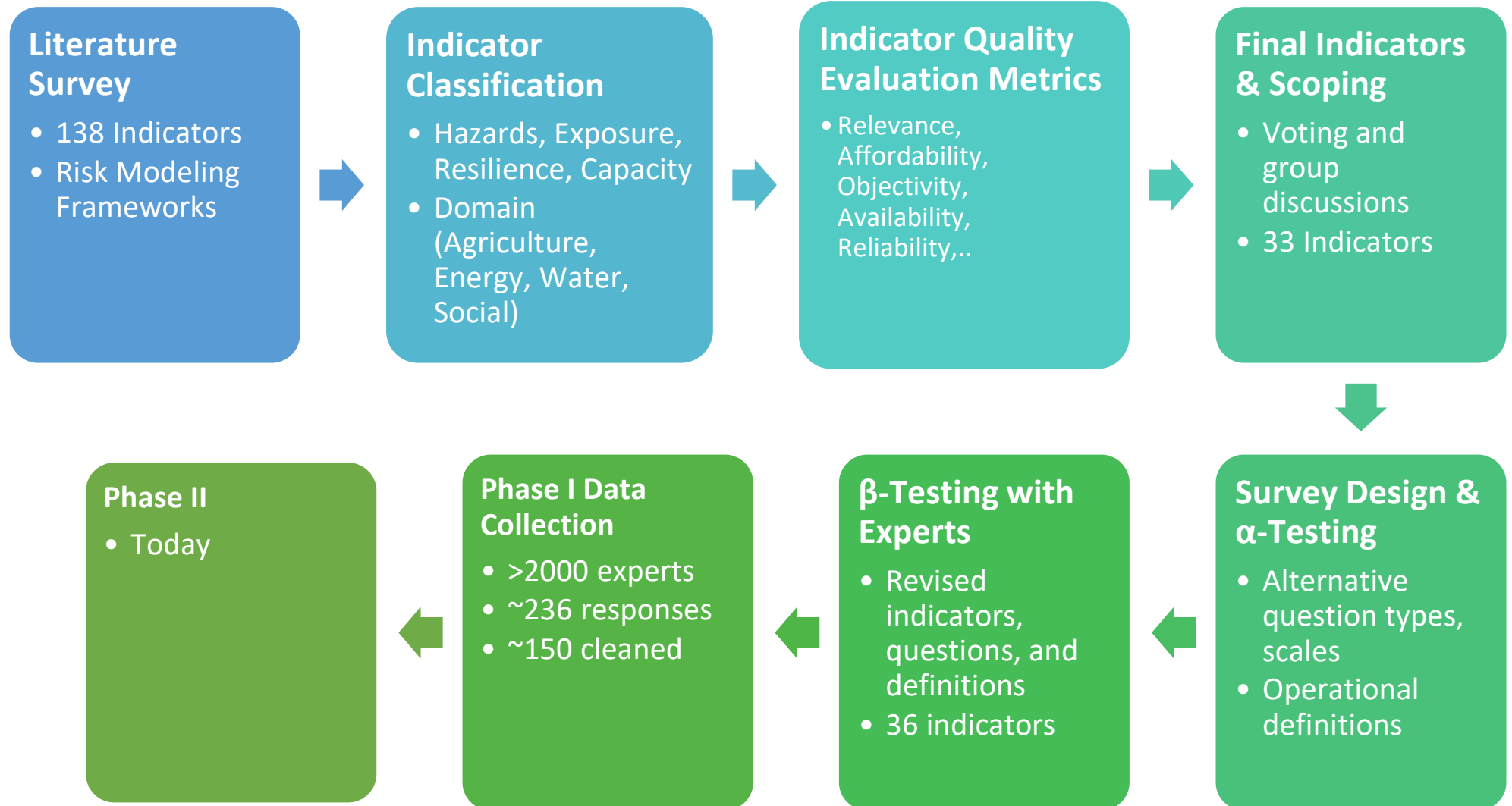


SYNTHESIS

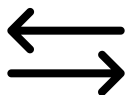
The Forecast-based Financing  
Southern Africa Project (FbF-SAP):  
A regional drought scoping study



# Indicator Selection & Survey Design Process



# Final Evaluation Metrics



## Relevancy

- **LOW:** The indicator is not clearly connected to a policy objective.
- **MEDIUM:** The indicator is understood by most decision-makers with some clarification.
- **HIGH:** The indicator conveys useful, relevant information for decision-makers on a specific policy objective.



## Ease of Understanding

- **LOW:** The indicator may be interpreted differently by various decision-makers.
- **MEDIUM:** The indicator is understood by most decision-makers with some clarification.
- **HIGH:** The indicator is readily understood by decision-makers.



## Data Accessibility

- **LOW:** Collecting and processing the data requires significant time and effort.
- **MEDIUM:** The indicator data is mostly available, but processing the data requires some effort.
- **HIGH:** The indicator data is publicly accessible and readily available. Processing the data requires minimal effort.



## Objectivity

- **LOW:** May require expert judgment to evaluate the indicator.
- **MEDIUM:** Requires some degree of expert judgment to interpret quantitative or qualitative data.
- **HIGH:** An objective measure is based on quantifiable, impartial, and recorded data.



## Temporal Availability

- **LOW:** The indicator data is collected in an ad-hoc manner, limiting the ability to monitor the indicator over different temporal scales.
- **MEDIUM:** The indicator data is collected periodically but not frequently enough for comparing the indicator in different temporal scales.
- **HIGH:** The indicator data is available over different time scales.

# Phase I – Survey

## Indicator Relevancy:

Please rate how **relevant** the following indicators are in terms of the information needs of decision-makers for improving drought resilience policies and better managing resources.

Option	Definition
Low	The indicator is irrelevant to the information needs of decision-makers.
Medium	The indicator is moderately relevant to the information needs of decision-makers.
High	The indicator is highly relevant to the information needs of decision-makers.

	Relevancy			
	Low	Medium	High	Don't know
Percentage of the contribution of crop and livestock production in the income of smallholder farming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crop loss	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Percentage of drought-resistance crop varieties cultivated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Percentage of farmers who use different types of crops	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Percentage of area protected and designated for the conservation of biodiversity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use of agricultural inputs (e.g., insecticides, pesticides, fertilizer, machinery)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Crop water use efficiency (WUE)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Degree of land degradation and desertification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>