



Building Small Islands' Resilience through Incorporation of Indigenous-knowledge and Science-based Approaches

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1,800 km



Indonesia Coastlines are classified
High Vulnerability

27

Districts listed as super priority coastal



**IDR 81.82 Trillion
USD 5.45 Billion**



Potential economic loss in 2024 from the
marine & coastal sector alone

Source: Bappenas, 2020



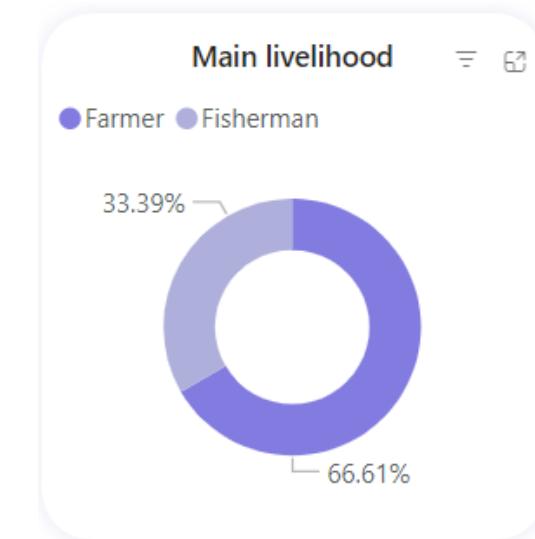
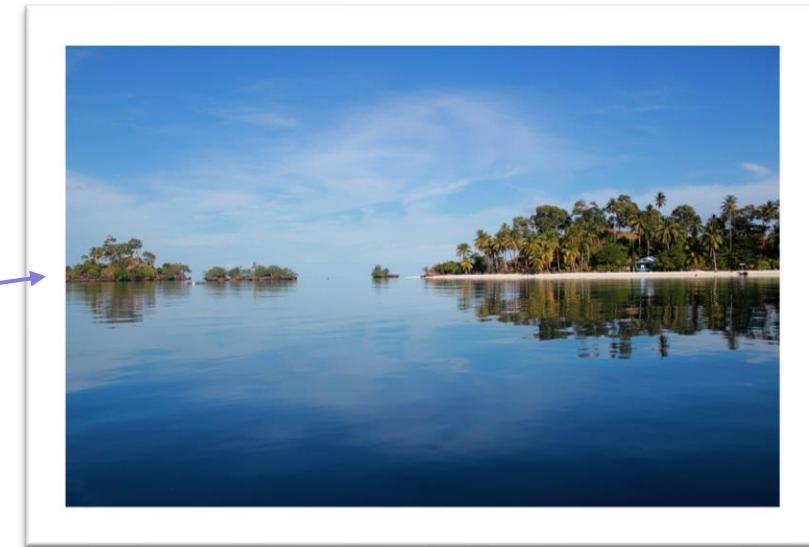
14 Villages

North Misool: Atkari, Salafen, Waigama, Aduwei, Solal.

Malaumkarta Raya: Malaumkarta, Suatolo, Mibi

Werur Raya: Werur, Werwaf, Wertim, Wertam, Bukit, Suyam.

4,316
Total Population



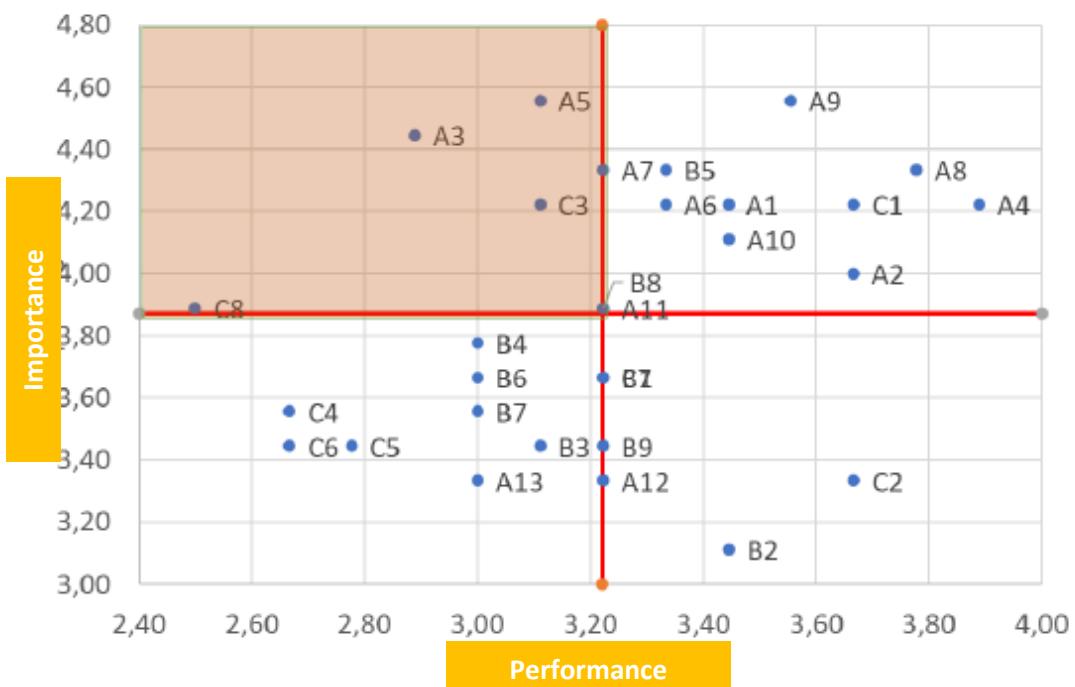
Challenges for small islands communities

- **Remoteness and access** (to capital, information, knowledge, development, infrastructure)
- **Highly dependent on natural resources** for livelihood
- Unpredictable **changes** in weather/season, difficulty to predict → **weaken existing knowledge, traditional practices, and ability to measure**



With the increased complexity of risks, **coping** has limits.

Community resilience analysis: Importance-Performance Analysis (IPA) Technique



MHA Malaumkarta and MHA Werur		North Misool	
CODE	INDICATOR DESCRIPTION	CODE	INDICATOR DESCRIPTION
A3	The community has sufficient ability (knowledge, skills) to manage the resources in its place.	A1	Communities are willing to donate labour, money or other resources voluntarily to achieve common goals
A5	The community has the initiative to carry out joint activities (gotong royong) and is actively involved regularly according to a mutual agreement (e.g. weekly, monthly, etc.)	A3	The community has sufficient ability (knowledge, skills) to manage the resources in its place.
A7	The organization/section of the village community in charge of protecting the village environment or coordinating in the event of a disaster has been assigned according to its function	A13	Funds for environmental conservation activities in the village come from known sources and are reported to the community regularly
A11	The cost of village environmental conservation activities is mutually agreed upon and issued following the plan		
B8	The community, in general, can market the products of the local area independently and does not depend on only one party		
C3	The community knows how to maintain and care for the coastal and marine environment in their village area		
C8	The community has the knowledge and skills to adapt to changes that occur in their village environment, both now and in the future		

Table 1. Indicators in Quadrant: focus (high importance, low satisfaction)
Source: YKAN, 2022



High Importance, High Satisfaction.

Need to maintain.

A1. Communities are **willing to donate labor, money, or other resources voluntarily** to achieve common goals

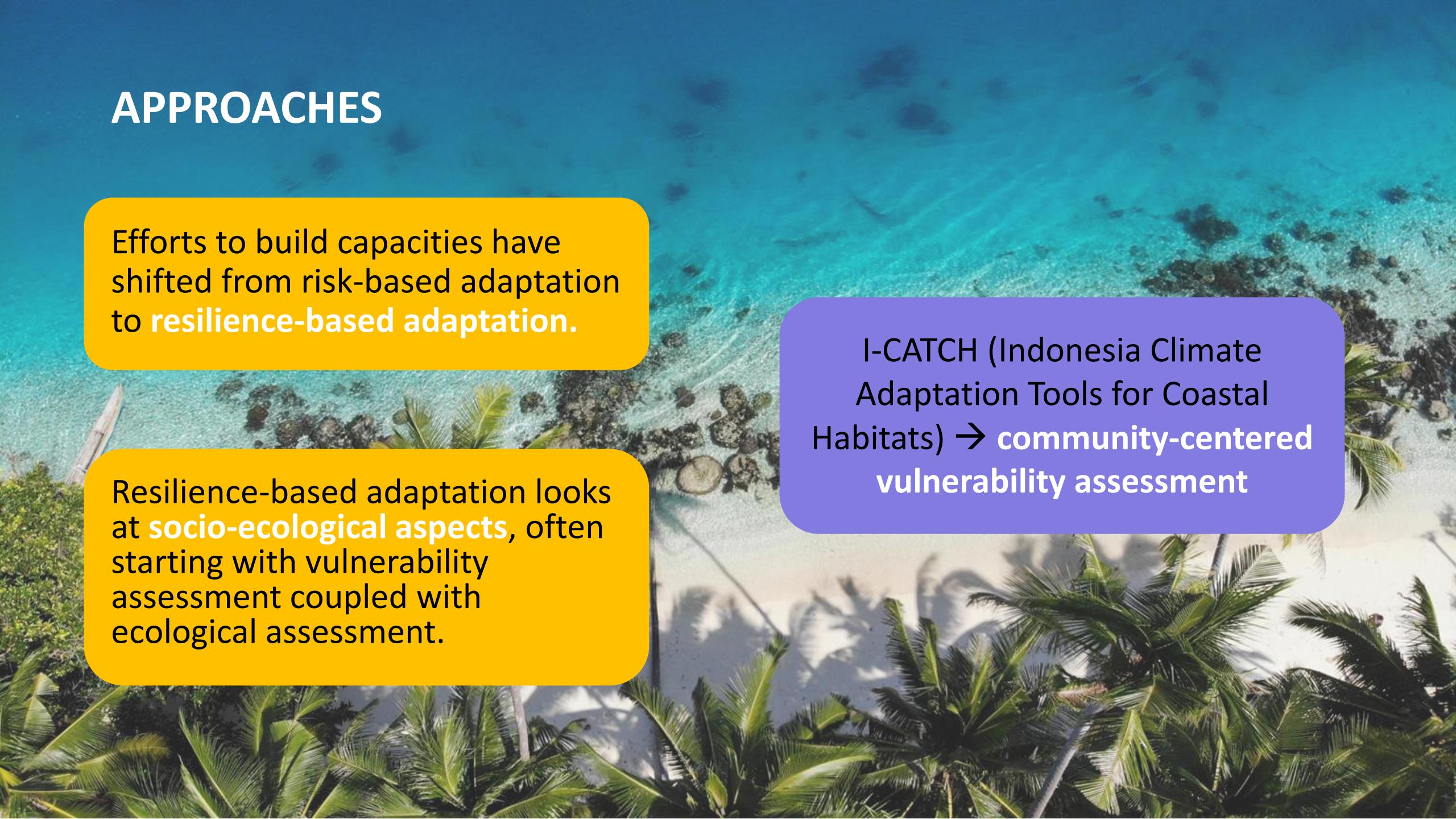
A2. The community has a feeling of being **responsible for maintaining and preserving** the resources that are in place

A8. A **leader** who is widely recognized to lead the community **to preserve and protect** the environment

C1. The community is **aware** that the **sustainability of coastal and marine ecosystems** is related to the sustainability of their lives.



APPROACHES



Efforts to build capacities have shifted from risk-based adaptation to **resilience-based adaptation**.

Resilience-based adaptation looks at **socio-ecological aspects**, often starting with vulnerability assessment coupled with ecological assessment.

I-CATCH (Indonesia Climate Adaptation Tools for Coastal Habitats) → **community-centered vulnerability assessment**

Community-centered Vulnerability Assessment

Site	Exposure	Sensitivity	Adaptive Capacity	Vulnerability	Priority Issues
North Misool	Medium-High	Low-Medium	Medium	Low-Medium	<ul style="list-style-type: none"> 1. Livelihood disruption (agriculture, fisheries) 2. Coastal erosion 3. Transport and accessibility
Werur Raya	High	Medium	Medium	Medium	<ul style="list-style-type: none"> 1. Livelihood disruption (agriculture, fisheries) 2. Coastal erosion 3. Sust management of resources
Malaumkarta Raya	High	Medium	Medium	Medium	<ul style="list-style-type: none"> 1. Livelihood disruption (agriculture, fisheries) 2. Coastal erosion 3. Sust management of resources

$$V = (E+S)/CA$$

V = vulnerability

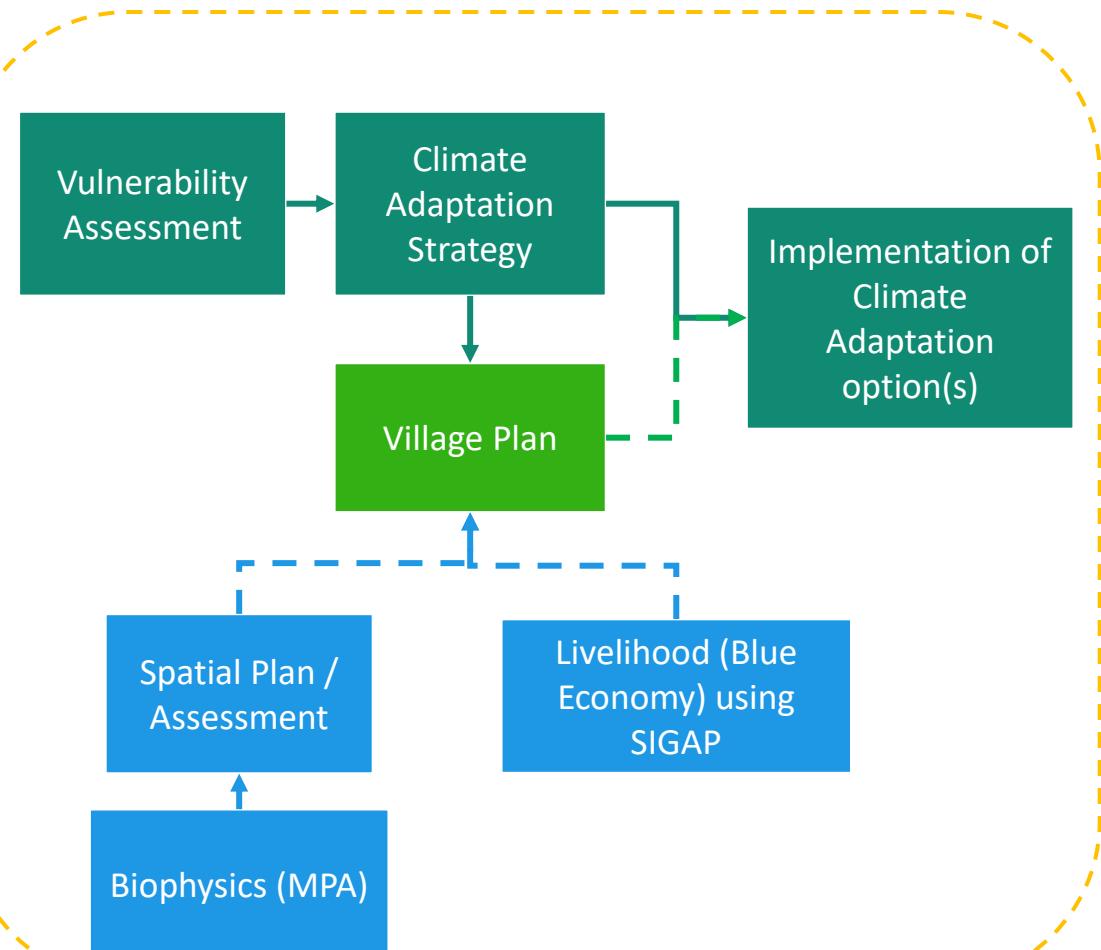
E = exposure

S = sensitivity

CA = capacity to adapt

10 out of 13
villages are in **moderate**
level of vulnerability







Community Resilience: MHA Werur Raya



- Joint customary law
- Restoration and protection through "Sasi" and "Egek"
- Climate budgeting



- Livelihood diversification
- Collaboration and partnerships
- Strengthening women's role in decision making

Lessons Learned



Indigenous knowledge strengthened and backed by science – well-informed decision-making, planning, and prioritizing nature-based solutions.



Local issues and tailored solutions – captured site-specific context, highlighted local strengths, adaptation strategies for their specific needs



Promote inclusive and targeted policy-making – participatory process, accommodate various perspectives, gender-responsive governance



Looking ahead: bridge gaps through capacity strengthening, access to knowledge/information, innovative financing mechanisms, multi-stakeholder collaboration.





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