

PARTICIPATORY METHODS TO INFORM POLICY AND GOVERNANCE IN SOUTHEAST ASIA'S PEATLANDS

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KEY MESSAGE

Participatory methods unite scientific evidence and community knowledge—strengthening agency and producing more workable peatland policy.

01. WHY PEATLANDS MATTER

Peatlands regulate climate and water, support biodiversity and sustain local livelihoods, but drainage, conversion and fire are degrading these services.

KEY FACTS

3–4% of Earth's land surface
Up to 1/3 of global soil carbon
≈56% of tropical peatland area lies in Southeast Asia

KEY ECOSYSTEM SERVICES

- Carbon Storage**
Locks away large carbon stocks.
- Biodiversity**
Supports terrestrial and aquatic species.
- Water Regulation**
Stores, filters and slowly releases water.
- Livelihoods & Cultural Values**
Provides food, forest products, income and cultural value.

02. THE KNOWLEDGE CHALLENGE

Robust policy needs evidence, yet tropical peatland data remain uncertain.

KEY UNCERTAINTIES

- Peat extent and mapping
- Greenhouse-gas emission factors
- Land-use classification
- Change over time

Definitions, resolution and time coverage can produce conflicting maps. **Scientific uncertainty should not delay action.** Local knowledge and field experience add place-based evidence.

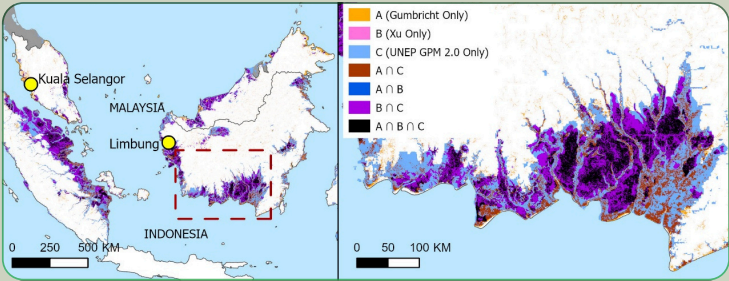


Figure 1. Peatland mapping discrepancies across Indonesia and Malaysia among three GIS datasets.

KEY POLICY MESSAGE

Use multiple forms of evidence—scientific, local and experiential—especially when data are uncertain, and quantify uncertainty if possible.

03. WHY PARTICIPATORY METHODS?

Traditional research treats communities as subjects. Participatory research engages them as co-creators, shaping questions, interpretation and action. This connects scientific evidence with local perspectives and lived experience.

RESEARCH SUBJECT



ACTIVE PARTICIPANT



CO-CREATOR OF KNOWLEDGE

04. PARTICIPATORY APPROACH

INDONESIA

Limbung, West Kalimantan
Masyarakat Peduli Gambut (Peat Care Community)

MALAYSIA

Kampung Raja Musa, Selangor
Adjacent to Raja Muda Forest Reserve

Shared challenges: fire, flooding, degradation and peat-based livelihoods.

STUDY AREA / SCHEMATIC LOCATOR



CO-DESIGN



COMMUNITY MAPPING



COMMUNITY PRIORITISATION



KNOWLEDGE EXCHANGE



POLICY INSIGHTS

METHOD 1 : CO-DESIGN WORKSHOPS

Flexible co-design workshops replaced a rigid question script. Participants worked in self-selected groups, in their own languages and familiar locations.

COMMUNITY MAPPING

Participants mapped their communities and peatland landscapes from lived knowledge.

COMMUNITY PRIORITISATION

Groups set priorities; individuals allocated stickers by importance (colour had no meaning).

METHOD 2 : KNOWLEDGE EXCHANGE SESSION

3 Indonesian ↔ 3 Malaysian representatives

An online Knowledge Exchange Session let both communities compare practices, identify shared challenges and direct the discussion. Reciprocity was central: participants contributed knowledge and gained contacts, networks and practical learning.



Figure 2. Community mapping, Malaysia.



Figure 3. Knowledge Exchange Session, Malaysian side.

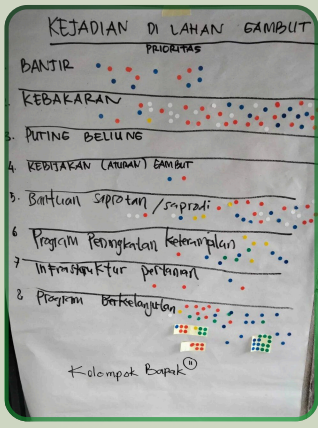


Figure 4. Community prioritisation, Indonesia.

05. THREE PARTICIPATORY FINDINGS

Participatory methods revealed priorities that conventional interviews and roundtables often missed.

FINDING 1 — BRIDGE KNOWLEDGE GAPS

Communities found climate jargon difficult, yet held strong practical knowledge of fire, haze, land management, health and livelihoods.

Local knowledge is often sidelined, risking unintended policy outcomes.

POLICY IMPLICATION

Combine scientific and community knowledge; translate evidence in both directions.

FINDING 2 — RETHINK “SUSTAINABILITY”

“Sustainability” meant different things:

EXTERNAL STAKEHOLDERS
Ecosystem protection and sustainable peatland management.

COMMUNITIES
Programme continuity, income, infrastructure, markets and long-term support.

POLICY IMPLICATION
Design for long-term programme continuity—not environmental outcomes alone.



FINDING 3 — START WITH LIVELIHOODS

Community representatives consistently prioritised livelihoods.

- Farming practices
- Crop choices and yields
- Fertiliser costs
- Market prices
- Middlemen
- Transport
- Farm-to-market access

POLICY IMPLICATION

Start with livelihoods. Supporting community needs can strengthen participation and generate environmental sustainability as a co-benefit.

06. FROM PARTICIPATION TO GOVERNANCE

Participatory research makes community priorities and place-based knowledge visible alongside uncertain scientific data.

Scientific Evidence

Local Knowledge & Lived Experience

Participatory Knowledge Co-Production

More Context-Specific Evidence

More Inclusive and Workable Peatland Policy & Governance

KEY POLICY MESSAGE

Bridge scientific and local knowledge to produce evidence that reflects conditions on the ground.

07. DECOLONISING PEATLAND RESEARCH

Participatory methods challenge extractive research by treating local researchers and communities as partners—not data sources.

FROM
Extracting knowledge from communities

TOWARDS
Co-design · Local leadership · Reciprocity · Shared knowledge production

Locally led, reciprocal research supports fairer knowledge production and more relevant governance.

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SELECTED REFERENCES

APN (2022). Policy and Governance Approaches to Cooperative Mitigation of Peatland Carbon Emissions and Transboundary Haze in Southeast Asia.

Page, S. E., Riley, J. O. & Banks, C. J. (2011). The global and regional importance of the tropical peatland carbon pool. *Global Change Biology*, 17(12), 798–818.

Riley, J. & Page, S. (2016). Tropical peatland of the world. In M. Oishi & N. Tsuji (eds), *Tropical Peatland Ecosystems*, pp. 3–32. Springer.

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Varkkey, H. et al. (2024). Mitigating carbon emissions and haze in Southeast Asia's peatlands: Opportunities and challenges in integrating policy and governance. *Trends in Southeast Asia* No. 21/2024.

Varkkey, H. (2024). Participatory climate governance: Insights from Indonesia's peatlands. *Heinrich-Böll-Stiftung Southeast Asia*.

Vaughn, L. M. & Jacques, F. (2020). Participatory research methods: Choice points in the research process. *Journal of Participatory Research Methods*, 1(1).

UNEP (2022). *Global Peatlands Assessment: The State of the World's Peatlands*.



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