



ROBUST DECISION-MAKING IN THE MEKONG

**STRENGTHENING INCLUSIVE CLIMATE CHANGE
ADAPTATION AND NATURAL RESOURCE MANAGEMENT**

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This discussion brief represents a continued collaboration between Stockholm Environment Institute (SEI) and the World Wide Fund for Nature (WWF). The work contained within is based on the project Scoping Study on the Application of Robust Decision Making (RDM) Framework to Improve Climate Change Adaptation Decision Making and Transparency in the Greater Mekong Region, which was undertaken by SEI for the US Agency for International Development (USAID) Mekong for the Future activity, implemented by WWF. The views, conclusions and recommendations do not represent the views of USAID.

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CONTENTS

KEY FINDINGS	1
METHODOLOGY	2
LITERATURE REVIEW: THE RDM FRAMEWORK	2
A MIDDLE PATH? “RDM LITE”	5
SURVEY AND KEY INFORMANT INTERVIEWS ON PERCEPTIONS OF DECISION-MAKING IN THE MEKONG	5
RECOMMENDATIONS FOR IMPROVING INCLUSIVE ADAPTATION AND DECISION-MAKING	7
CONCLUSION	8
REFERENCES	9

KEY FINDINGS

- Trust is lacking, particularly in national governments, around natural resource management decision-making in the Greater Mekong Subregion.
- The Robust Decision Making (RDM) methodology has strong potential to increase trust and participation in decision-making from diverse stakeholders.
- Less technically intensive interpretations of the methodology, referred to as “RDM lite”, may suit local needs better while preserving RDM’s core principles of robustness, participation and adaptive decision-making.
- Several additional measures could also strengthen local communities’ and civil society’s engagement with decision-making processes: capacity building, strengthening informal networks, building common understanding, reflecting on how participation can be “meaningful”, and harnessing digital technology while ensuring security and equitable access.

We report here the findings and key recommendations of a study undertaken between November 2021 and May 2022 to explore inclusive natural resource management decision-making in the Greater Mekong Subregion, in relationship to climate adaptation. We assessed the potential for the Robust Decision Making (RDM) methodology to facilitate inclusivity and to promote better outcomes in these arenas.

Decision-making under climate change has been described as a “super wicked” problem due to severe uncertainty about the future state of the environment (Lempert & Turner, 2021). This uncertainty makes it extremely hard for governments to set adaptation policies that will be suitable both now and in the future.

For natural resource management, decision-making is often contentious and affected by unequal power dynamics. In the Greater Mekong Subregion, observers have pointed to a contraction in civic space over the past decade, with targeted threats against environmental and human rights defenders and increasing state surveillance (Denney et al., 2021). This has led to unfavourable outcomes for local communities and in particular for poor and marginalized groups that are disproportionately affected by climate change impacts and ecosystem degradation.

Consensus is growing that developing inclusive solutions requires the engagement of a range of stakeholders, the incorporation of different types of knowledge, and enhanced cooperation at local, national and transboundary levels (Krittasudthacheewa et al., 2019). For instance, both academia and practitioners use “knowledge co-production” methods, involving local people in the research process from the outset instead of extracting knowledge from them (Middleton et al., 2019). The RDM methodology holds promise for broadening stakeholder participation but requires technological prowess that may be lacking.

We explored RDM to see if it could increase inclusivity of stakeholders in the Mekong region, with regard to natural resource management and climate adaptation. The recommendations reported here are broadly relevant to Greater Mekong Subregion stakeholders, including government agencies, non-governmental organizations (NGOs), civil society organizations (CSOs), international organizations and academia, and they could be interpreted and put into action at various scales.

METHODOLOGY

The study was undertaken in three steps: a literature review, an online questionnaire survey and key informant interviews. The literature review collated current applications of RDM for climate change and natural resource management issues in developing country contexts and drew out relevant advantages and limitations. The survey and key informant interviews were then used to understand perceptions of natural resource management decision-making in the Greater Mekong Subregion countries. Synthesizing these, we could evaluate the potential for RDM to strengthen inclusive decision-making.

For the literature review, keyword searches were performed in Google Scholar using the terms “Robust Decision Making” and “Robust Decision Support”, with the first 100 results analysed for relevance to climate change and natural resource management. Survey and interview respondents were solicited by circulating a request for participation to SEI’s and WWF’s networks of CSOs, NGOs and other partners involved in natural resource management in the Greater Mekong Subregion countries. The survey had a total of 28 respondents. We invited a subset of 8 respondents to participate in a group interview; these respondents were broadly representative of the Greater Mekong Subregion countries and organization types.

In terms of limitations, the small sample size made statistical analysis of the results unfeasible. Additionally, natural resource management is a broad field, encompassing water resource management, agriculture, aquaculture, forestry, conservation, and more. As a result, drawing definitive conclusions was difficult. Our findings should be regarded as indicative and as a starting point for further exploration.

LITERATURE REVIEW: THE RDM FRAMEWORK

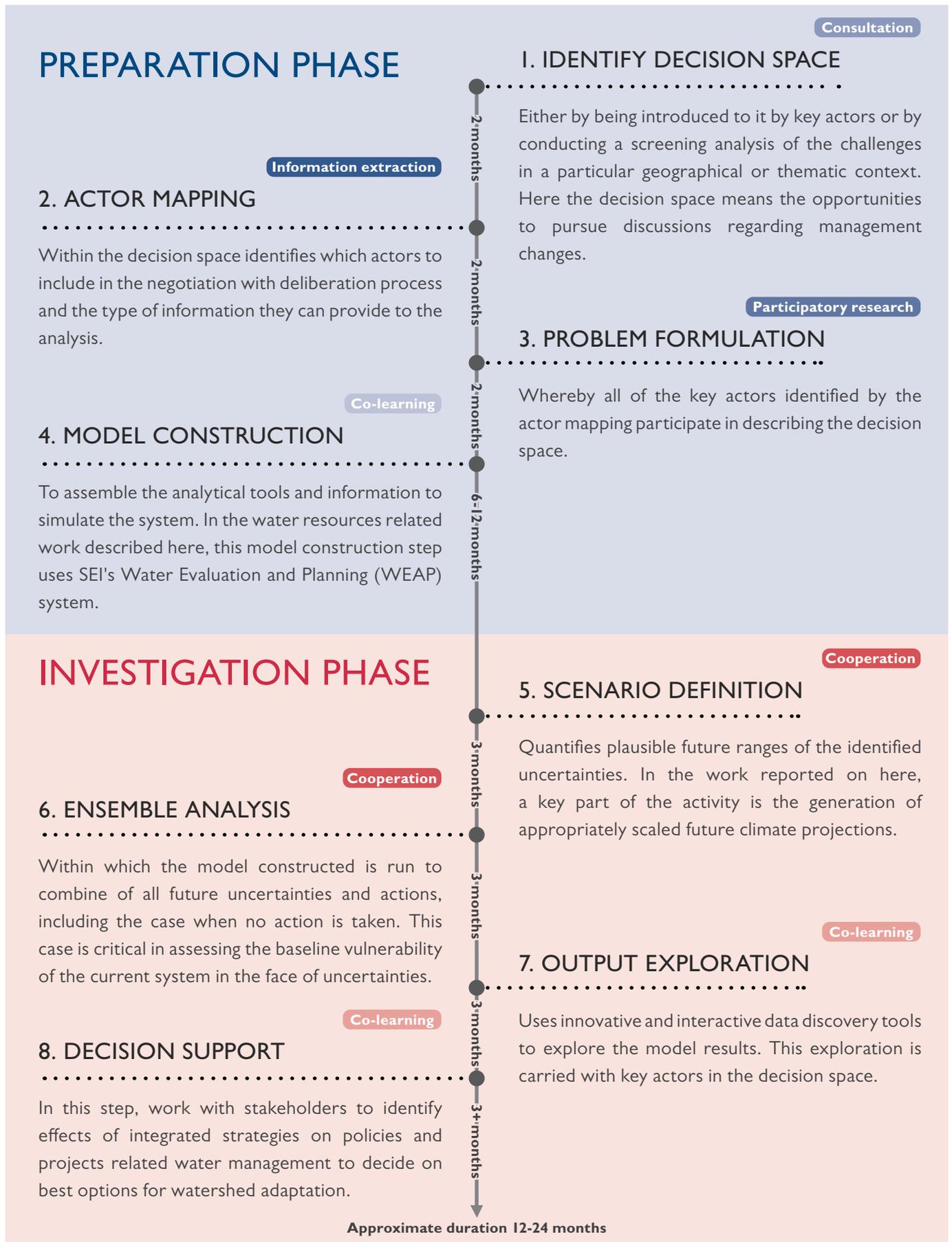
Traditional modelling and decision support methodologies generally follow a “predict and act” logic that seeks to determine optimal strategies (Lempert & Turner, 2021). The RDM framework instead aims for strategies that perform well in a wide range of possible future scenarios. Applied to the field of climate change, it can be described as “a better way of using existing data and models that helps decision makers plan for the future without first predicting it” (Lempert et al., 2013).

Figure I shows an example of the steps usually involved in RDM. After an initial decision-space framing stage, computer simulation modelling is used to test hundreds or thousands of plausible future scenarios with many combinations of uncertainties. Visualizations are then employed to explore outputs, illustrate trade-offs, and evaluate the strategies among stakeholders.

Results from the literature review highlight a gap in empirical applications of RDM, with most studies demonstrating how the method could be applied or comparing methodological approaches. Studies are also largely concentrated in the Global North. Of the literature involving empirical applications of RDM for natural resource management and climate change adaptation in the Global South, the bulk of applications are in the water resources sector, e.g. water security and climate change assessments (Apirumanekul et al., 2019; Piman et al., 2019; World Bank, 2016) and long-term water resources and river basin master plans (Bresney & Escobar, 2017; Kalra et al., 2015; Lima-Quispe et al., 2021).

The approach has been applied to a range of other topics, for example adaptation in the livestock sector (Dittrich et al., 2017) and analysis of Green Climate Fund strategies for international decarbonization (Molina Perez, 2016). This demonstrates RDM’s potential as a flexible approach, relevant to many areas of climate change–related uncertainty.

Figure 1. Steps in the RDM methodology



A key feature of RDM that emerges from the literature is its participatory nature. The process engages a range of stakeholders – notably government agencies, universities and service providers. A more limited number of studies in the literature review extended the participation to civil society groups and local communities. These include representatives of local water user groups (Sothea et al., 2019); local communities, farmers and fishers (Piman et al., 2019); community service organizations (Apirumanekul et al., 2019); and civil society groups (Bresney & Escobar, 2017).

Evidence from the literature strongly indicates that the methodology can support effective and inclusive decision-making, particularly when local groups are involved. Examples of success following the application of RDM include substantial government investment, totalling approximately THB 230 million (USD 70 million), for a groundwater supply project to improve water security in a drought-affected area in Khon Kaen Province, Thailand (Apirumanekul et al., 2019). In the Prek Thnot River Basin in Cambodia, feedback showed that RDM enhanced the confidence of relevant agencies to support local communities and local water user groups to engage in the planning process through continued dialogues based on a joint assessment plan (Sothea et al., 2019). Stakeholders in La Paz, Bolivia, reported that the process delivered “democratization of information by reaching a wider audience, not just modellers” (Forni et al., 2016).

Overarching strengths and challenges of the methodology that emerged from the literature review are described in Table 1.

Table 1. Strengths and challenges of RDM

Strengths	Challenges
<p>Multistakeholder collaboration</p> <p>By facilitating stakeholder collaboration from the outset, RDM can enable shifts away from superficial forms of participation and can build trust and mutual understanding, which can lead to greater legitimacy in decision-making and more equitable outcomes.</p>	<p>Modelling and data requirements</p> <p>RDM is analytically intensive, with a significant modelling component as well as large data requirements to run the models. This may present a barrier to participation and local ownership of the tools. In the literature, the RDM process was mainly led by academic institutions.</p>
<p>Adaptive management and long-term planning</p> <p>Investments such as those necessary for large infrastructure are expensive and inflexible, with a high capacity for regret (Ranger & Garbett-Shiels, 2012). The RDM framework permits complex trade-off analysis to weigh costs and benefits and develop phased and flexible management strategies.</p>	<p>Human resources and time challenges</p> <p>Skills and time availability also emerged as an impediment in the literature. An RDM process can take between 1 to 2 years to fully complete, and organizations involved in the process may have multiple competing demands on their time, which makes consistent engagement challenging (Bresney & Escobar, 2017).</p>
<p>Experimentation and learning</p> <p>Adaptive management also emphasizes experimentation and learning to manage uncertainty. In developing countries, there may be more opportunity leapfrog outdated approaches, as well as to harness new technologies and approaches that may deliver greater robustness, for instance, green or hybrid infrastructure compared to grey alone, such as constructed wetlands to enhance to performance of drainage pipes for flooding (Casal-Campos et al., 2015).</p>	

A MIDDLE PATH? “RDM LITE”

Despite its advantages, RDM can be a long and technically complex process. Resource-light approaches (“RDM lite”) can provide a less intensive alternative – for instance, by following a qualitative approach or involving simplified modelling, while maintaining the core principles of robustness, participation and adaptive decision-making.

For example, “Shared Learning Dialogue scenario exercises” have been applied in Can Tho, Viet Nam, to illuminate the vulnerabilities of proposed policies, using stakeholder consensus instead of simulation modelling to define thresholds for adaptation pathways (Lempert et al., 2013). Lebel et al. (2018) qualitatively determined the climate robustness of aquaculture strategies through a joint assessment with fish farmers. The research team then developed a simple model that was run as a syntax file on SPSS statistical software to help classify information about the efficacy and costs of adaptation options under different conditions.

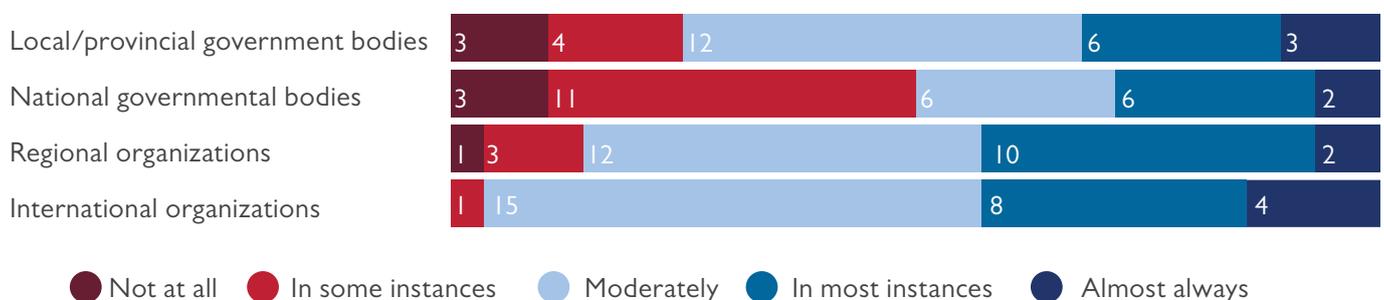
Should a quantitative approach be required, various types of modelling could plausibly be employed, depending on specific needs, or based on the tools that are already being used by stakeholders. This would minimize the burden of learning new software and enable greater local ownership of the methodology.

SURVEY AND KEY INFORMANT INTERVIEWS ON PERCEPTIONS OF DECISION-MAKING IN THE MEKONG

A questionnaire survey on perceptions of decision-making in the Mekong was circulated to organizations involved in natural resource management in the Greater Mekong Subregion countries to understand perceptions of decision-making and the differentiated ability of various groups to participate in decision-making processes. Key informant interviews were then conducted with a subset of survey respondents to build qualitative insight.

One of the key findings emerging from this study is a lack of trust, particularly in national government bodies. Almost half of survey respondents (n=14) stated either that they do not trust national bodies at all or trust them only in some instances. Conversely, international development or cooperation organizations are the most trusted overall (Figure 2).

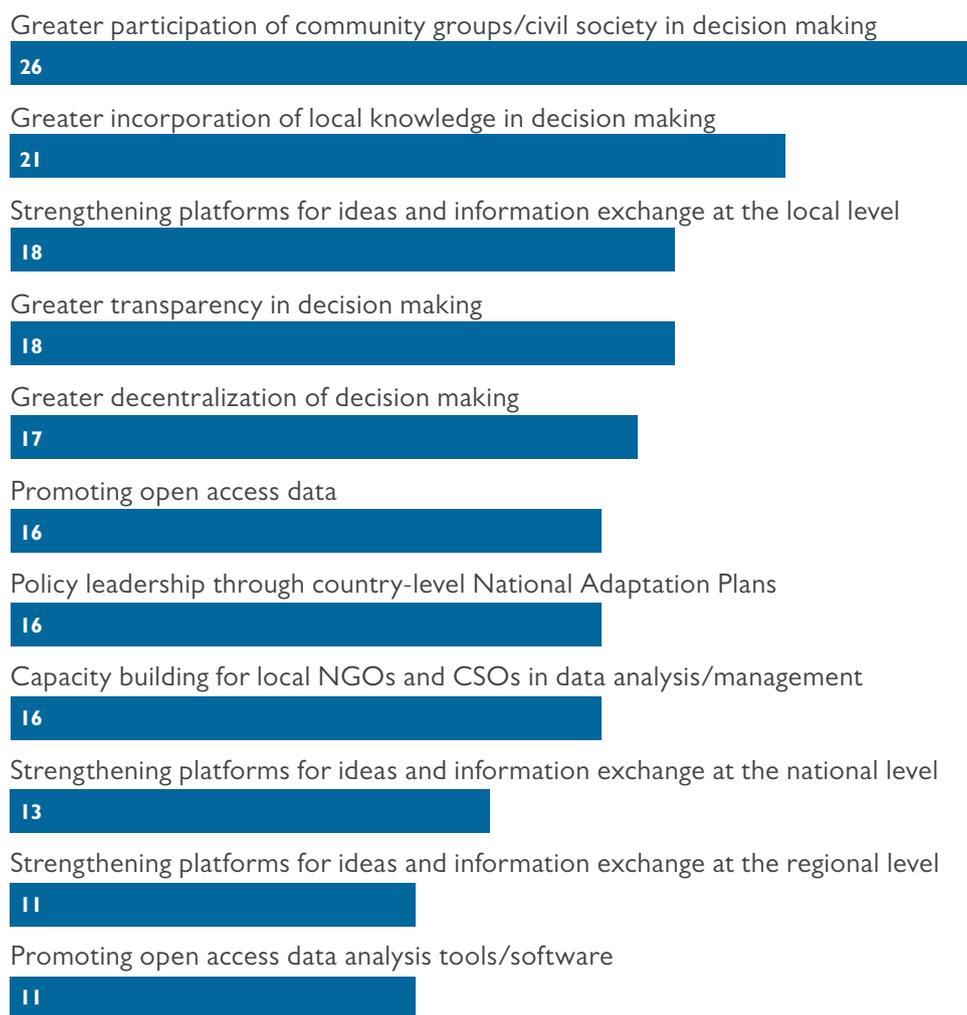
Figure 2. Level of trust in decision-making bodies



Participants said that the reasons behind these negative perceptions include government implication in land grabs that threaten common resources and inadequate or ineffective public consultations for developments that can have a major impact on local livelihoods. In the context of this mistrust, the study also found that local organizations have been strengthening their data collection to challenge the top-down structure of decision-making.

Greater participation of community and civil society groups in formal decision-making (n=26) and greater incorporation of local knowledge in formal decision-making (n=21) were identified by respondents as the most critical factors for strengthening inclusive climate adaptation (Figure 3).

Figure 3. The most critical factors in strengthening inclusive climate change adaptation and natural resource management decision-making



These findings imply a strong potential for RDM as a participatory methodology that can build trust between various stakeholder groups and integrate local expertise. However, RDM is simply a tool, and the outcomes will depend on how the process is carried out, i.e. who is leading the process, which groups are involved, how information is shared, and who has the final say over the decisions that result from the process.

RECOMMENDATIONS FOR IMPROVING INCLUSIVE ADAPTATION AND DECISION-MAKING

From the key informant interviews, several other key themes relating to how to strengthen inclusive decision-making in the Greater Mekong Subregion emerged.

1. CAPACITY BUILDING

Several suggestions were made relating to the importance of capacity building. These include:

- Peer-to-peer community exchanges between different countries for skills exchange; however, at a community level, communication and logistics may be difficult to implement.
- Educating people about their rights to enable challenges to activities such as land grabs and illegal logging that threaten common resources.
- Support for civil society to engage in higher-level decision-making, e.g. regional multistakeholder forums to help build solidarity between different civil society groups and communities in the region and enhance advocacy efforts.

2. STRENGTHENING NETWORKS

Many formal networks already exist in the Greater Mekong Subregion to support transboundary decision-making, including the Mekong River Commission (MRC), Lancang-Mekong Cooperation, Mekong Fish Network, Mekong-US Partnership, and the Sustainable Mekong Research Network (SUMERNET). A key finding from the study was the importance of informal networks. For example, in Thailand, riparian communities living in the eight provinces around the Mekong River are connected on a messaging application for the purpose of informing and organizing around issues that affect their communities. If members cannot attend a consultation, the group will ensure that information is shared.

Despite being informal, these groups have been recognized in more formal ways. For example, the riparian communities group in Thailand receives official letters from government entities inviting them to consultations, and members have previously received funding from Thailand's Office of National Water Resources to help with research activities and data collection. In Cambodia, the efforts of informal groups led to revised guidelines on collective land titling.

In terms of enhancing the ability of civil society to engage with decision-making processes, strengthening formal and informal networks is a key leverage point. This may include capacity building, peer-to-peer exchange, and platforms to connect groups around common issues.

3. BUILDING COMMON UNDERSTANDING

Different stakeholder groups can have very different ways of understanding and communicating issues. Building common understanding is key to effective partnerships. One respondent described a struggle to promote a project entitled "water stewardship initiative" with a local community. "Stewardship" did not have any direct translation into local languages, and the lack of understanding of the project's purpose led to reluctance from the local community to engage. The project team adjusted the approach, renaming the project to "water resource management initiative" – terminology that the community was familiar with, which led to more fruitful outcomes.

While this example shows the importance of engaging in locally appropriate ways, it is also critical that messaging is not distorted. "Water resources management" is very different conceptually from "water stewardship". A middle path may be to work with local communities to understand what "stewardship" activities mean to them, and to develop language and tools that are appropriate.

4. “MEANINGFUL” PARTICIPATION

What we mean when we talk about participation? “Meaningful participation” can be used loosely, meaning different things to different actors. Respondents offered some suggestions for how participation in decision-making processes can be made more meaningful:

- Access to information: Communities should be able to access and share publicly available information that is digestible, i.e. in local languages and avoiding jargon.
- Effective messaging: Building on the above point, decision-makers should put effort into improving engagement through clear messaging that reaches communities in effective and locally appropriate ways.
- Transparent recourse mechanisms: National and regional decision-making should include transparent recourse mechanisms. For example, complaints to the MRC’s Procedures for Notification, Prior Consultation and Agreement process are not publicly available, which limits the capacity of communities to organize and build coalitions around common issues.

5. ACCESS TO DIGITAL TECHNOLOGY

A final theme that emerged in this study centred around technology. Particularly during Covid-19, stakeholders at multiple levels came to rely more heavily on digital technology to connect. The increasing accessibility of digital technology and social media has enabled easier access to information and broader engagement in decision-making spaces.

However, there are also certain flip sides. First, in terms of security, many internet connections are regulated and online content censored, which limits access to information and puts individuals who speak out at risk. Another flip side comes from the question of who has access. For instance, remote rural communities may not have a secure internet connection. This “digital divide” means that certain groups may be left behind. Therefore, inclusive decision-making will require assessment to make sure that all can participate on an equal footing, while safeguarding freedom of expression.

CONCLUSION

This study has found that RDM has strong potential to address some of the challenges identified with decision-making in the Greater Mekong Subregion – namely lack of trust in government actors and lack of inclusion of community groups and local knowledge in formal decision-making. However, RDM is a complex and time-consuming methodology, which limits its potential for local ownership of the tools. A less technical “RDM lite” presents a promising middle path as a more flexible interpretation of the methodology, which preserves the core principles of robustness, participation and adaptive decision-making but uses less intensive modelling or qualitative approaches.

Moving beyond RDM, this study also highlighted several key considerations for strengthening the ability of civil society to engage with decision-making processes. RDM may be able to address some of these issues by facilitating participation that goes beyond consultation, empowering stakeholders and encouraging consensus building. Nevertheless, these considerations remain stand-alone priorities in moving towards more inclusive decision-making.

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