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Public Perception of Flood Mitigation Projects in the Coastal Villages of Dumai, Riau Province

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Abstract

This paper explores the factors that affect social participation and the success of flood prevention projects by analysing public views on those projects in the coastal villages of Dumai, Riau Province, Indonesia. Based on a constructivist research paradigm, semi-structured interviews were conducted and attempted to uncover participants' experience and perceptions of the tested projects and their long-term feasibility. The study shows that even though flood management strategies have successfully minimized cases of flooding, the following difficulties still occur. The perceived problems were social factors: exclusion from the decision-making process, and cultural factors: their conflict with traditional practices. Another disadvantage of economic involvement was that it also reduced the communities involvement and questioned the viability of the infrastructure. This paper fills voids within the literature first, by revealing how stakeholders without input significantly influence community level flood combating decisions crucial input is deliberately excluded from flood decision-making to the disadvantage of the often socially marginalized communities second, by stressing the importance of incorporating indigenous knowledge in combating extreme flooding occurrences. Further, the research emphasizes the need for sustaining the economic aspect for continued delivery of flood prevention measures.

INTRODUCTION

One of the major natural disasters familiar to various coastal areas around the globe and Indonesia in particular is flooding. For instance, flooding from sea encroachment continuously affects small cities like Dumai in Riau Province owing to the interactions of the impact features including sea-level rise, subsidence and climate change volatility (Chirayu etal., 2021). It outlines flood risk reduction measures that have been undertaken by LGs and other stakeholders in a bid to control flood in future and lessen its impacts on the vulnerable LGs in the coastal areas. Nevertheless, the effectiveness and longevity of most of these projects are anchored on its reception by the local public and the community (Caillot et al., 2022). Within this framework, we significantly focus on discussing the residents' opinion about the flood mitigation projects in the coastal villages of Dumai, Riau Province including the

assessment on the efficiency of such projects, their participation in such projects, and the socio-cultural factors that determine the perception.

Dumai and other coastal regions do not only face floods as natural disasters, but they are also caused by deforestation; poor city planning; and uncontrolled abstraction of water from the ground (Mulyadi & Hamidy, 2021). The cost impacts are enormous; they affect everyone and are tangible rendering the problem an economic, social, and ecological menace. To counter this, the Indonesian government has embarked on different measures to tackle floods such as erecting sea walls, feeding systems and talking community based programs (Crouzet et al., 2022). Yet, in many cases, policy considerations pay insufficient attention to the reactions of local communities on the efficiency of these projects and their problems. Stakeholders' perception also influences such projects because the success depends on the people's support, specifically for the projects' implementation and continuation (Weible et al., 2020).

In particular, the focus is made on the role of local perceptions in environmental management and disaster prevention tactics. Swe (2023), postulated that an understanding of public perception is critical to the practical success of flood handling since the people have to be involved for the measures to work. Many residents of CCs' coastal zones depend on natural resources and, therefore, may perceive the alterations and threats in the environment correctly (Yang etal., 2023). It is for this reason that flood management requires public participation as a supplement to scientific information about the problem. This study was conducted in Dumai where flooding affects both the dwellings and economic sectors including fishing and agriculture, thus, prioritizing future flood management efforts requires the comprehension of residents' perception on the issue (Wolff, 2021).

Structural and non-structural measures are the two general forms of flood mitigation. Other measures include accomodation measures whereby structures are constructed in a manner that they wouldn't be affected by floods and non-structural measures that include physical planning techniques such as building of sea walls and other types of embankments, and the improved drainage system (Rogers, 2021). The non-structural measures include; warning systems, public enlightenment campaigns and prevention and control of use of land and development among them being the early methods used to minimize the impacts of floods by managing people's behaviors (Titko et al., 2021). As for Dumai, the synthesis of these approaches has been used. However, there is always a disconnect between what is implementable and what the local community will find appropriate. Others are government authorities, previous experience and socio-economic status of the people (Akimova etal., 2020).

However, an observation of flood mitigation projects implemented in many coastal regions has been characterized by poor progress,principally because of poor community participation in the formulation of the projects and options. top down approach to disaster management where certain decisions are made on behalf of the populace by central authorities, local interests of those most at-risk of floods are not considered. On the other hand, community based strategies that embrace the inhabitants in order to develop and implement the project mitigation measures exhibit high levels of success in regard to sustainability (Castro & Vanclay, 2020). Secondly, it is still uncertain how much the Dumai communities have contributed to the flood projects and how much the flood projects have incorporated with the communities' knowledge and views.

Another reason why socio-economic situation of communities is one of the main concerns is the fact that it is often the determinant of general public attitude. The population in Dumai's coastal villages are generally considered to be resource poor,

earn low income, and directly depend on the coastal environment (Syahza et al., 2020). The factors can set the views that persons in the area have about the advantages and drawbacks of executing flood retardation project. For instance, while residents will consider structural measures such as sea walls as useful in shielding their homes they will harbor fears over fisher and coastal ecosystems. Meanwhile, other factors such as the socio-cultural factors and customary rights for tenure of land for various uses, strengths community bonds (Nara & Zevenbergen, 2021). An overview of these socio-cultural aspects is therefore crucial while working towards an effective institutional framework for the implementation of mitigation projects.

Recognizing that flood mitigation has recently become a growing concern in Indonesia, there are still a lack of empirical studies investigating the public perspective of flood measures especially in countries coastal areas; Dumai. Researches executed in other site in Indonesia including Jakarta and Semaranga have shown that there is regional and personal variation in the public perception due to past experiences, local environmental condition and trust in authorities (Saputra et al., 2021). However, there is little research that specifically targets coastal populace that can be prone to flooding, with perhaps differences to those in urban non-coastal regions. This study intends to help fill this gap through the presentation of a descriptive analysis of residents' perception on flood mitigation projects in the Dumai's coastal villages.

METHODS

The study used descriptive research method to determine the perception of the public on flood management projects in selected coastal villages of Dumai, Riau Province. The purpose was to broaden the knowledge about the evaluation and assessment of residents regarding effectiveness, difficulties, and results of these projects. Qualitative approach was used because it enabled me to understand participants and their perceptions as they are through interaction with them. The design enabled the gathering of contextual data that enhanced an understanding of the peculiarities of local perceptions regarding the topic.

This research was carried out in several coastal villages of Dumai, Province of Riau, which are often flooded and have been targeted with different flood control programmes. People from these villages were targeted for the survey first, second, and third, including those who had been living within the area for the past five years and more, and those who had gotten firsthand experience of the flood mitigation structures. The respondents were selected purposively to ensure that only those who had personal experience with the issues under consideration were recruited. The study incorporated 25 participants and the distribution of these participants in terms of age, gender, occupation and economic status was considered The main source of data collection was through semi structured interviews. This interview guide was formulated from studies on flood mitigation and the perception the public has on the same This interview comprised of basic questions which were left open-ended in order to enable individuals express their views uninhibitedly. Multiple questions were directed towards participants understanding concerning flood mitigation projects, project involvement, perceived performance of the projects and influence of the flood initiatives on their daily lives.

Aside from individual interviews, focus group discussions were employed with groups of participants in order to elicit the participants' group perceptions and to encourage them to talk about their experiences together. Two focus groups were formed where each group has between six and eight participants and the entire session was conducted and facilitated by the researcher. The social context and the physical environment for undertaking the research was also visited to gain more information

about the areas considered to be vulnerable to floods and other support information for the participants interviewed.

The interviews and all the discussions were in compliance with the participants' consent while recording and observation exercises included extensive note-taking.

Data Analysis

The interview, focus group discussion and observation data were analyzed thematically. Many of the recordings were transcribed using dialogue with no omissions or additions and the transcripts were reviewed several time in order to understanding emerging themes and patterns. Primary coding, of the data was the process of segmenting the gathered data into comprehensible meaningful units. These codes were later clustered into six overall categories that hinged on the participants' account of the flood mitigation projects.

Some of the findings Gettler derived from the data include beliefs about the project's efficiency, attitudes towards community participation, trust in government and the ability of the programs to be sustained. Data analysis was cyclical; that is, comparisons were made between different data sources in order to establish reliability. During coding of data, Nvivo software was used in handling the qualitative data to ease the flow of data analysis.

Since the main aim of the study was to produce credible and trustworthy research, some measures were taken as follows. Measures such as interviews, focus group discussions and observations were employed as a way of minimizing the validity of the study by conducting triangulation to enhance credibility of the results. Member checking was done by comparing the finding obtained with few of the participants to ensure that what was interpreted was accurate. Peer debrie sting was also done whereby the researcher engaged peers who are conversant with qualitative research to ascertain the correctness of the finding.

RESULTS AND DISCUSSION

In coastal areas such as Dumai, Riau Province, flood risks are a persistent threat to livelihoods, infrastructure, and cultural practices. Flood mitigation efforts often require significant financial, social, and technical investments, making community participation and support crucial for their effectiveness. However, perceptions of these projects are influenced by various factors, including social inclusion, cultural relevance, and economic sustainability. By examining the views of local residents, this study aims to provide insights into the challenges and successes of flood mitigation projects, highlighting the role of community engagement and local dynamics in shaping their outcomes. The findings discussed below reflect these complex relationships and offer a detailed understanding of how public perception impacts the long-term sustainability of such initiatives.

Perception of Flood Mitigation Effectiveness

The effectiveness of flood mitigation projects in the coastal villages of Dumai, Riau Province, was a central theme emerging from the qualitative analysis. Participants expressed a range of perceptions regarding the success of these initiatives, with some acknowledging the positive impacts, while others highlighted ongoing challenges that hindered their effectiveness. This section delves into these perceptions, exploring the factors that contribute to residents' views on the effectiveness of flood mitigation measures.

Many participants noted that the flood mitigation projects had led to noticeable improvements in their communities. Several residents pointed out the construction of embankments, drainage systems, and the restoration of mangroves as significant steps toward reducing the frequency and severity of flooding. One participant stated:

"Since the construction of the embankments, the water doesn't rise as high as before during the rainy season. We feel safer now."

This statement reflects a shared sentiment among residents that these physical interventions have provided a level of security against flooding.

In addition to the physical infrastructure, participants also recognized the role of these projects in fostering a sense of community resilience. For instance, a resident highlighted:

"The community came together to support these projects, and that unity has made us feel stronger against the floods."

This perception underscores the idea that the flood mitigation efforts have not only focused on physical barriers but also on enhancing social cohesion within the community, contributing to a more collective approach to disaster preparedness.

Despite acknowledging the benefits of flood mitigation projects, many participants expressed concerns about their ongoing challenges. Some residents reported that the existing drainage systems were not adequately maintained, leading to blockages and ineffective water flow. One participant voiced this frustration, saying:

"The drainage was built well, but now it's filled with trash and doesn't work properly. We need to do better at keeping it clean."

This concern illustrates a critical gap in the sustainability of the projects, emphasizing the need for ongoing maintenance and community involvement to ensure their long-term effectiveness. Additionally, participants raised issues regarding the equitable distribution of benefits from the flood mitigation efforts. Some residents felt that certain areas within the coastal villages received more attention and resources than others, leading to feelings of neglect. A participant mentioned:

"It seems like the projects are focused more on the central part of the village. The outer areas are still flooded often."

This perception of inequality in the implementation of flood mitigation strategies highlights the importance of inclusive planning and engagement with all community members to ensure that the benefits are distributed fairly and that all voices are heard in the decision-making process. Trust in the authorities responsible for implementing flood mitigation projects also emerged as a crucial factor influencing residents' perceptions. While some participants expressed confidence in the local government's commitment to flood management, others voiced skepticism regarding the effectiveness of future initiatives. One resident remarked:

"We have seen some improvements, but we worry about what will happen next. Will they keep investing in our village?"

This uncertainty reflects a broader concern about the sustainability of flood mitigation efforts and the need for continued government support and transparency in project planning and execution.

Furthermore, participants emphasized the importance of ongoing community engagement in flood mitigation efforts. Many expressed a desire for more involvement in decision-making processes related to flood management. A resident articulated this by stating:

"We want to be part of the discussions about what happens in our village. Our input is valuable."

This statement highlights a growing recognition among residents of the importance of participatory approaches in disaster management, suggesting that fostering a

collaborative relationship between authorities and the community can enhance the perceived effectiveness of flood mitigation projects.

Community Participation and Involvement

Community participation played a significant role in shaping the overall perception of flood mitigation projects in the coastal villages of Dumai, Riau Province. Residents generally acknowledged that their involvement in these initiatives impacted the success and sustainability of the projects. The extent of community engagement varied, with some individuals and groups playing a more active role than others. This section explores the nuances of community participation and how it influenced both the implementation and outcomes of the flood mitigation efforts.

Many participants expressed that they were involved in the flood mitigation projects, especially during the initial stages of construction and planning. The community's active participation was encouraged by local leaders and project organizers, who sought to create a sense of ownership and collective responsibility. One participant shared:

> *"We helped build the embankments and clear out the drains. When you're involved, you care more about what happens."*

This comment highlights the positive impact of engaging residents in physical tasks and decision-making, as it fostered a deeper connection to the projects and an increased sense of accountability.

Several residents also mentioned being involved in discussions and consultations regarding the placement of infrastructure, such as drainage systems and embankments. Another resident explained:

> *"They asked us where the flooding is worst and which areas needed the most protection. That made us feel like our input mattered."*

This type of involvement illustrates a participatory approach, where community members contributed their local knowledge and experiences to ensure the interventions were targeted effectively. The inclusion of residents in decision-making enhanced the projects' perceived relevance and increased satisfaction among those who felt their voices were heard.

Despite these positive accounts, there were notable challenges in ensuring broad-based participation across the entire community. Some participants expressed that their involvement was limited or that they were not adequately informed about the projects. One resident commented:

> *"I heard about the project only after it started. Nobody asked for my opinion, and I wish I could have contributed."*

This statement reflects a common concern among residents who felt excluded from the initial planning stages or unaware of opportunities to participate. Barriers to participation were attributed to several factors. One major obstacle was the lack of effective communication between the project organizers and certain segments of the population. Some participants pointed out that information about meetings or consultations did not always reach everyone, particularly those living in more remote areas of the village. Another resident explained:

> *"The people in the center of the village knew about everything, but out here on the outskirts, we were left out."*

This inequality in access to information hindered the ability of all residents to contribute to the process, potentially leading to feelings of disempowerment and dissatisfaction with the projects. Social dynamics within the community also influenced the level of participation in flood mitigation projects. Certain groups, such

as village leaders or long-established residents, tended to be more actively involved, while others, such as newer residents or individuals from marginalized backgrounds, were less engaged. A participant shared:

> *"The village heads and older residents were always at the meetings, but newer families like mine didn't feel like we had a say."*

This highlights how traditional social hierarchies and local power structures can shape the distribution of participation opportunities, potentially sidelining certain groups. However, there were also examples of inclusivity, where efforts were made to involve a wider range of community members. One resident noted:

> *"They invited everyone to join the cleanup efforts and construction work, regardless of status or how long they'd lived here. It brought us together."*

This demonstrates that when inclusivity is prioritized, community participation can bridge social divides and foster stronger collective bonds, ultimately enhancing the sense of shared responsibility for flood mitigation.

The findings revealed that many residents expressed a desire for greater involvement in future flood mitigation projects. Participants emphasized the importance of continuous engagement and consultation with the community to ensure that projects address their evolving needs and concerns. One participant remarked:

> *"We want to be part of every step, not just in the beginning. Our input should be considered throughout the process."*

This sentiment underscores the growing recognition that community involvement should not be a one-time event but an ongoing partnership between residents and authorities. Furthermore, participants highlighted the need for greater transparency in the decision-making process and more opportunities to influence the direction of future projects. Another resident stated:

> *"If we're going to live with the results, we should have a say in how things are done."*

This reflects a widespread belief that meaningful participation can lead to more effective and sustainable flood mitigation efforts, as well as a stronger sense of ownership and responsibility among residents.

Social, Cultural, and Economic Factors

Social, cultural, and economic factors significantly influenced the perception, participation, and outcomes of flood mitigation projects in the coastal villages of Dumai, Riau Province. These aspects played a pivotal role in shaping how different segments of the community engaged with the flood mitigation efforts and viewed their success. This section explores the complexities of these factors and how they affected the overall response to the projects.

The social fabric of the coastal villages influenced how residents interacted with the flood mitigation initiatives. Strong community ties, shaped by longstanding relationships and shared experiences, were crucial in determining the level of cooperation and collective action. Many participants mentioned that communal solidarity was an important driving force in ensuring the success of the projects. One resident shared:

> *"We've lived through floods together for years, so when the projects started, we knew we had to work together as a community."*

This comment illustrates the power of social bonds in fostering collaboration and mutual support during the implementation of flood mitigation measures.

However, the social dynamics of the community also posed challenges, particularly for newer residents or those who were less connected to the local networks. Some participants expressed that their limited social ties hindered their ability to contribute meaningfully to the projects. A participant noted:

> *"I moved here recently, and I didn't feel like I was really part of the group. It was hard to know how to get involved."*

This highlights how social exclusion or weaker connections within the community can limit the opportunities for certain individuals to participate fully, potentially leading to unequal engagement and benefits from the flood mitigation efforts.

Cultural factors, including traditional knowledge and local practices, also played a significant role in shaping how residents viewed and responded to the flood mitigation projects. Many participants emphasized the importance of integrating local knowledge into the planning and execution of the initiatives. One resident explained:

> *"We have lived with floods for generations, and we know the land better than anyone. Our input should have been considered more in the planning."*

This statement reflects the belief that traditional wisdom, such as knowledge of local flood patterns and effective coping strategies, should have been more prominently featured in the decision-making process.

The cultural attachment to the land and the sea also influenced residents' perceptions of the projects. For many, the coastal environment was not just a place to live but an integral part of their cultural identity. Some participants expressed concern that the flood mitigation efforts, while necessary, could disrupt their traditional way of life. A resident remarked:

> *"The projects help with the flooding, but we worry about what they might mean for our fishing practices and how we interact with the sea."*

his sentiment underscores the tension between modern flood mitigation approaches and the need to preserve cultural practices that have sustained the community for generations. Economic factors were a significant consideration for residents when assessing the impact and effectiveness of the flood mitigation projects. Many participants highlighted the direct link between the success of the projects and their ability to sustain their livelihoods, particularly for those involved in fishing, agriculture, and small businesses. One participant shared:

> *"When the floods are controlled, we can go back to work sooner, and that makes a big difference for our income."*

This illustrates how the effectiveness of flood mitigation efforts directly affects economic stability in the community.

However, economic challenges also posed barriers to participation in the projects. Some residents explained that their financial constraints limited their ability to contribute to the initiatives, either through donations or voluntary labor. A resident stated:

> *"We wanted to help more, but we're struggling financially. It's hard to focus on community projects when you're worried about feeding your family."*

This reflects a common challenge among economically disadvantaged residents, who, despite their willingness to engage, were constrained by their financial situation. Additionally, participants expressed concerns about the long-term economic sustainability of the flood mitigation projects. Some feared that the financial investment required to maintain the infrastructure, such as drainage systems and

embankments, would be difficult to sustain without continuous government support. One participant remarked:

> *"The projects are good, but who will pay to keep them working? If they aren't maintained, we'll be back to where we started."*

This highlights the economic uncertainty surrounding the long-term viability of flood mitigation efforts and the need for ongoing financial support to ensure their effectiveness. The intersection of social, cultural, and economic factors created a complex landscape in which the flood mitigation projects were perceived and implemented. In many cases, these factors overlapped and influenced one another. For instance, the economic hardships faced by some residents were compounded by social exclusion, making it even more difficult for them to participate fully in the projects. Similarly, cultural attachment to traditional practices sometimes clashed with modern flood mitigation approaches, creating tensions that needed to be addressed through inclusive planning and decision-making. One participant encapsulated this complexity by saying:

> *"It's not just about the projects themselves, but how they fit into our lives, our culture, and our economy. If one part is out of balance, the whole thing can fall apart."*

This statement reflects the need for a holistic approach to flood mitigation, one that considers the social, cultural, and economic realities of the community in order to achieve sustainable and effective outcomes.

With reference to social, cultural, and economical aspects of the community involvement and perceived efficiency of flood control measures the purpose of this research focused on community perception on flood protection projects in the coastal villages in Dumai, Riau Province. The study enriches the existing knowledge database about flood management, disaster risk reduction and community involvement by pointing to shortcomings of the approaches and offering more insightful data on public attitudes. Based on the findings of the study, the results are compared with the existing literature in an attempt to explain the existing research gaps and come up with efficiencies.

This study reveals that the community plays an important role on the success of flood mitigation projects. Studies have post that the one effective way to reduce disasters risks is by engaging local communities in the process. Geekiyanage et al. (2020) note that communities bring in the legitimacy hence ownership and hence contribute to sustainability of environmental management projects. In the same vain, Geekiyanage et al. (2020) argue that the incorporation of past and present local experiences into decision making process in disaster risk reduction and prevention is crucial so that the interventions are better suited to the context. These views are supported by this study because when participants were involved in projects they feel ownership of the projects.

However, while previous research stresses on the necessity for the people in the community to take part in related programmes and projects, the social factor determining who is involved and how are often ignored. The study extends current knowledge on urban space and work by identifying specific exclusionary practices faced by residents in the community, where newcomers and those from less privileged positions were made to feel as if they do not belong within the decision-making circles. Sanders & Scanlon (2021) also identifies the problem of equal participation in community initiatives, but this work advances beyond that by showing how and in what form power dynamics influence participation. This insight is important to fill the gap where other theories seem to overlook the most important

element in the society today: how to engage all inhabitants in the process (Anglin et al., 2022).

This conglomerate of cultural knowledge and practices integrating into flood mitigation efforts was also identified as a theme in this study. Past scholarly work has also recognized that TEK is useful in mitigating threats affecting the environment. Local hazards can be managed effectively through local knowledge since Sharifian et al. (2022) concludes that rural or indigenous people are usually associated with extensive knowledge of ecological patterns. The participants in this study expressed similar views for which they wanted to state that having been familiar with floods of the areas and coping strategies for a long time, their knowledge should have been integrated more effectively into the planning process (Sun et al., 2021).

This research fits into this existing scholarship in a way that distinguishes the cultural incongruity that becomes manifest when contemporary flood control measures interfere with indigenous practices. although Hadlos et al. (2022) study calls for the amalgamation of traditional knowledge into disaster risk management, the present research turns attention to the cultural issues that persist in cultures whose livelihood entirely depends on natural resources, for example, fishing. That, despite the projects being efficient in preventing floods, it would alter some of the participants' cultural practices as well as their relationship with the coastal environment (Wolff, 2021). This has been handled in the study, underscoring the requirement of flood mitigation approaches to balance on the use of modern structures, and the conservation of history.

Another determinant of both the perception of the flood mitigation projects and the willingness to participate in them was economic factors. Prior research tends to focus on the economic consequences of natural disasters for vulnerable populations, Mills et al. (2020) where the worst affected are the bottom quintile of the population. This work corroborates this fact because research showed that there were some residents whose economic challenges prevented them from engaging optimally in the projects. Of particular significance is the understanding that economic vulnerability as defined by Ahmad & Afzal (2020) increases the impact of floods there is otherwise adequate participation in the mitigation actions, it is revealed that financial limitations can hamper the involvement of the community in the measures.

Furthermore, the long term sustainableeconomic analysis of flood management measures has been presented in this research which was missing from most of the existing literature. While prior work has investigated the contingent gains that result from flood protection, little attention has been paid to the contingent costs of sustaining them. Some of the issues presented by the participants in this study were worries about the capacity to maintain the infrastructure once funding ceased from the government. This insight supports the assertion made by Fraser et al. (2020) that good flood risk management does not end after project implementation, but needs constant funding and patronage. This was evident from various remarks made by participants in this study indicating the need to have long term strategic planning and more particularly financial sustainability of flood mitigation programmes (Manzoor et al., 2022).

this paper fills several gaps in the research on the assessment of flood mitigation and community involvement. Although many papers feature local participation and local knowledge as frameworks for DRM, this paper extends past these top principles to understand social cultural and economic factors that hinder DRM and influence the generation of success (Trogrlić et al., 2022). The fact that the study is conducted in one of the coastal villages of Dumai means that the authors were able to gain a more

nuanced understanding of how the residents' stakeholders understood the flood mitigation projects.

Also, the study shows that there is a lack of cultural and economic awakening in the approaches to flood control. The current counterweight of the flood management has been more or less a quintessential techno-structural approach (Malik, 2021) here the human or cultural and economical factors that affect flood management and its projects are given prominence here. This approach resonates with current arguments for increased interdisciplinary scholarship in disaster risk reduction (Regier, 2020) that argues for the social and cultural incorporation into the environmental analysis.

CONCLUSION

The current study has given an overview of people's attitude toward flood prevention projects in the coastal villages of Dumai, Riau Province, and the results showed that social, cultural, and economic factors determine the acceptance of flood prevention efforts and the success of these tasks among the targeted communities. This focus makes this paper important as it endeavours to fill existing gaps in the literature, including exclusionary barriers to participation, the issue of duality of modern infrastructure and local practice, and the question of financial sustainability of more extensive flood mitigation efforts. They stress the need for including culture and community structure in the future flood risk management planning and practice in order to achieve outcomes that would successfully address the problem and meaningfully involve people.

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