



Policy Brief

The Role of Digital Participatory Governance Platforms in Enhancing Risk-Informed Development: Lessons from Surabaya, Indonesia

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Key Recommendation

- Surabaya's experience of adopting new technological advancement in their participatory planning process has been one of the innovative solutions in improving public services delivery as well as enhancing wider community participation. However, issues related to inclusivity and translation into risk-informed development planning are regarded as primary obstacles to expand such initiatives.
- To address this, there are several measures needed, targeting each stakeholder in Surabaya. The community members have to improve their knowledge and capacity within the context of heightened disaster and climate risks. The local government of Surabaya must intensify their efforts in promoting greater inclusion to access these various digital platforms as well as in enhancing data protection and privacy measures.
- The national government can help to align the regulatory framework, particularly in relation to planning law and disaster management law and make sure that it is coherent until local level. The international researchers and practitioners community may contribute in knowledge production and exchange to improve the ability of digital platforms in developing risk-sensitive development planning.

Background

The necessity of incorporating disaster risk reduction and climate adaptation into development planning is escalating, alongside growing socio-economic and environmental challenges stemming from climate effects, such as rising sea levels, flooding, extreme temperatures, and diverse climate-related hazards. This corresponds with the advocacy of risk-informed development, as seen in multiple international governance frameworks, including the Sustainable

Development Goals (SDGs), the Paris Agreement, and the Sendai Framework for Disaster Risk Reduction (SFDRR). Despite facing various challenges in its integration, active community engagement and participation are effective strategies to overcome these obstacles (Sagala et al., 2021).

The increasing use of digital platforms in urban development planning offers potential synergies with community-based adaptation

and risk mitigation (Qiu et al., 2022). They promote participation by overcoming constraints of time, location, and physical mobility, facilitating real-time data gathering and processing, hence improving risk assessment precision and expediting reaction times (Wilson & Jones, 2020). In this context, the utilisation of digital participation platforms may enhance the risk sensitivity of development planning by fostering community interaction.

Surabaya is among the first cities in Indonesia to use digital platforms, notably through e-Musrenbang. Given its characteristics that are highly exposed to hazards such as coastal flooding, land subsidence, and sea level rise, the utilisation of the digital platform has the potential to improve the integration of hazard and climate change aspects in Surabaya's regulations and planning documents. Nonetheless, other challenges persist, particularly around inclusivity, technological application, and the translation into policy formulation. This policy brief outlines potential enhancements using digital platforms that could improve the risk sensitivity of development plans in Surabaya.

Introduction of Digital Participatory Governance in Surabaya

The introduction of *e-Musrenbang* in Surabaya as a digital tool to enhance participatory planning and consensus-building within development planning that convenes members of the public in intensive deliberation began in 2009. The newer digital form known as e-Musrenbang provides a platform for online participation in decision-making across scales from the neighbourhood to the city level. It has been designed with the objective of facilitating the expression of community aspirations concerning their surrounding development (Anindito et al., 2022). To do so, community members are frequently invited to formal meetings to debate the proposed programmes before they are submitted to a digital platform. In addition to the e-Musrenbang platform, the role of other digital platforms in the Bulak District of Surabaya that have a bearing on the risk sensitivity of planning is also taken into account. These include locally-developed

platforms such as Sapawarga, Wargaku, as well as national planning platforms provided by the National Disaster Management Agency (*Badan Nasional Penanggulangan Bencana/BNPB*).

Despite being the pioneer in the utilisation of information and communication technology (ICT) in the local governance system, the e-Musrenbang platform in Surabaya, has been doubtful to encourage greater participation of many community members that were previously excluded in the formal planning processes. The deployment of the *e-Musrenbang* platform to enhance risk sensitivity in local development plans continues to encounter considerable challenges, particularly with regard to inclusivity and the translation of community participation into policy. The primary concern regarding inclusivity can be attributed to the exclusive access held by Lembaga Pemberdayaan Masyarakat Kelurahan (LPMK), the board of village representatives, to submit proposals to the *e-Musrenbang* platform. Although the proposals were previously discussed at the sub-district and district forums with various community representatives, including women's groups, it is unclear whether the input gathered during these discussions is adequately reflected in the final submitted proposals.

The absence of a comprehensive disaster and climate change plan in Surabaya presents a significant challenge in translating community proposals into effective local policies. Although e-Musrenbang permits community input, the local government work plan (*Rencana Kerja Pemerintah Daerah/RKPD*) prioritisation process frequently results in the dilution of these initiatives. Despite government interventions to reduce and mitigate the impact of disaster and climate risks such as sea walls, community-driven proposals through *e-Musrenbang* predominantly focus on infrastructure and disaster management and do not always directly address climate risks. This emphasises the necessity for a more integrated and risk-informed approach to local development planning.

In order to ensure the continued development of Surabaya, it is equally important that the

city's local authorities prioritise the implementation of measures designed to mitigate the increasing risks posed by disasters and climate change. While e-Musrenbang is constrained in this respect, platforms such as *Sapawarga* and *Wargaku* provide invaluable citizen feedback. However, these platforms lack integration with formal planning processes like the RKPD, as they mainly focus on resolving citizen complaints, which hinders their ability to contribute to risk-informed development. Furthermore, the incorporation of BNPB's disaster data could enhance risk-sensitive planning, but this would require better integration with local initiatives. In order to effectively address Surabaya's urgent challenges, a more comprehensive approach is needed that leverages both citizen-generated data and institutional expertise.

In conclusion, the introduction of digital participatory planning tools in Surabaya presents opportunities for greater inclusion of the local communities as well as enhanced efficiency and effectiveness in planning procedures and mechanisms. While some platforms are better suited for quick responses, others can support longer-term participatory planning. However, challenges persist, particularly in ensuring the quality of community participation can be well translated into a more risk-sensitive local development plan, which will serve as a guidance for all stakeholders.

Policy Recommendation

The following recommendation section is divided into four stakeholders that play crucial roles in participatory planning processes: community members, the Surabaya city government, the national government, and international policymakers. Additionally, we suggest areas and topics for future research based on this study in the final section.

Community Members and Organisations

Community members play an important role in addressing the increased disaster and climate risks from the grassroots level.

1. Improving capacity and knowledge regarding the increased risk of disasters

and climate change

The community must strengthen its capacity and deepen its understanding of disaster and climate change risks. This involves gaining a comprehensive awareness of the specific hazards and vulnerabilities that are most relevant to their local area. Thus, the community can better prepare for, respond to, and recover from potential threats. To achieve this, community members must actively engage in educational programs and awareness campaigns. Such initiatives may include workshops, seminars, training sessions, and outreach activities designed to educate the public on identifying risks, developing emergency plans, and implementing preventive measures. Additionally, these events provide a platform for exchanging knowledge and experiences, fostering collaboration, and building a sense of shared responsibility among community members. The more informed and prepared the community is, the more resilient it will be in facing future disasters and climate challenges.

2. Increasing and sustaining engagement in local planning by familiarising with digital participatory tools

By effectively familiarising residents with the existence and usage of digital participatory platforms, they will be better positioned to engage in planning processes and contribute to decision-making actively. Simulation and training will enable individuals to access the platform and critically assess the information and decisions made. Furthermore, it will allow the community to voice their concerns, provide feedback, and advocate for their neighbourhoods more efficiently. This increased participation will contribute to a more inclusive, transparent, and responsive Musrenbang process in Surabaya, aligning local development plans with the real needs of the community.

3. Bridging communication between the community and local government on disaster risks and climate issues

As a representative of the neighbourhood community, the LPMK plays a pivotal role in facilitating communication between the

community and local government. This responsibility becomes particularly important in addressing disaster and climate risks, which directly affect the safety and well-being of residents. The LPMK should proactively engage with both parties, ensuring that the concerns, needs, and vulnerabilities of the community are effectively conveyed to local authorities. By serving as a bridge, the LPMK can help ensure that government policies, disaster preparedness plans, and climate change the lived experiences inform mitigation strategies of the community.

With regard to *Musrenbang*, as the *e-Musrenbang* platform is currently not widely open to the public, it is essential for the LPMK to take an active role in disseminating information to the community to ensure a more transparent and inclusive *Musrenbang* process. This involves regularly updating the community about the status of proposals submitted through the platform, including which proposals have been accepted, rejected, or are still under review. Moreover, the LPMK should also communicate any discussions or agreements made with local government officials regarding these proposals. This proactive approach will help ensure that the *Musrenbang* process is not only more transparent but also accountable to the public, reducing the risk of favouritism or lack of community participation in decision-making

City Government of Surabaya

The Surabaya city government plays a significant role in advancing the utilisation of digital platforms for better participatory planning and developing risk-sensitive development planning. To do so, there are a number of policies, programmes, and actions that can be considered to improve existing efforts, such as:

1. Aligning and harmonising the regulatory framework

Vertical and horizontal regulatory alignment is essential to enhance the implementation of digital participatory planning platforms such as *e-Musrenbang*. This necessitates the assurance of

consistency between national policies, provincial regulations, and local ordinances regarding disaster risk reduction, climate change adaptation, and participatory planning. By streamlining and harmonising these regulations, local governments will be able to integrate community-driven proposals into their development plans and allocate resources effectively. By ensuring that national policies on disaster risk reduction are reflected in local ordinances, communities are better equipped to identify and address vulnerabilities through participatory processes. Local regulations concerning the implementation of *e-Musrenbang* may also need a review to promote greater inclusivity to include all community members throughout the process. This would enhance the democratic nature of participatory planning, ensuring that all voices are heard and contributing to more equitable and sustainable development outcomes.

2. Strengthening and integrating disaster and climate risk information into existing planning documents

Strengthening and integrating risk information into existing planning documents like the RKPDP is crucial to enhancing the effectiveness of local development plans in addressing disaster and climate risks. This involves comprehensive risk assessments, data collection and analysis, risk prioritisation, and the development of mitigation and adaptation strategies. By incorporating risk information into all stages of the planning process, local governments can make more informed decisions and allocate resources effectively to address the challenges posed by climate change and disasters. The national government has also mandated the local government, including Surabaya, to develop its own Local Action Plan for reducing Green House Gasses as well as climate change adaptation and has provided guidelines to develop such documents. The city government of Surabaya can take these measures as ways to incorporate and strengthen exposure to disaster and climate risks data and information that the locals are facing, including integrating the

proposed programmes and actions in the Local Action Plan into their own RKPD.

3. Integrating various or all digital participatory planning and governance platforms

The integration of various digital platforms in Surabaya will increase the ease of use of citizens as users and allow interoperability between all platforms. This will not only make the bureaucracy process more efficient but also improve public service delivery. The local residents of Surabaya can easily access and navigate to all public services, including participatory planning platforms, through one integrated application.

4. Providing disaster, climate and other environmental risks information within the digital platforms

In developing more risk-sensitive development planning, providing relevant disaster and climate risks are critical steps. The main objective is to raise awareness and knowledge about the persisting challenges that they face. For example, the e-musrenbang platform can be further developed to provide the risks of sea level rise for people living in coastal areas, the level of air pollution, and land subsidence rate. Exposing such information until the grassroots level is also an integral effort to build community capacity and resiliency in facing disaster and climate change impacts in Surabaya.

5. Enhancing data protection and privacy measures for all digital platforms

To ensure the security and privacy of personal data collected through digital platforms like *e-Musrenbang*, *Sapawarga*, and *Wargaku*, it is essential to implement robust security measures, develop clear privacy policies, obtain informed consent, and promptly notify users in case of breaches. The big data collected via these digital platforms can then be analysed to provide sufficient information on existing conditions on the ground. Eventually, the data and information can inform policy-making processes to better respond to the growing needs of the local citizens in Surabaya. By strengthening data

protection and privacy measures, local governments can build trust with citizens and ensure their personal data is handled responsibly and securely.

National Government

1. Aligning National and Local Frameworks for Digital Participatory Planning

The national government should focus on harmonising national and local frameworks to improve the deployment of digital platforms like e-Musrenbang across Indonesian cities. This includes coordinating with sectoral planning bodies like BNPB to ensure risk-sensitive development is integrated across all levels of government. The national government should provide clear SOPs and guidelines, including tracking mechanisms within these platforms, allowing citizens to follow the progress of their proposals. These would ensure that digital participation platforms operate under unified standards, improving transparency, inclusivity, and responsiveness across different regions.

2. Synchronising and integrating digital planning platforms across ministries

One of the major obstacles faced by citizens is the fragmented nature of digital platforms, where different ministries and agencies operate separate systems. This creates unnecessary complexity for users, who are forced to navigate multiple platforms to access public services. The national government should prioritise the synchronisation and integration of these platforms so that citizens can access all services and participatory planning tools through a single, unified interface. This will also improve coordination between ministries, leading to better data sharing and decision-making, particularly for risk-sensitive urban planning.

3. Improving digital infrastructure and accessibility in local communities

The national government should invest in improving digital infrastructure, particularly in underserved areas, to ensure equal access to participatory platforms. In Bulak District, issues such as the complexity of the platform interface have hindered participation. Enhancing infrastructure and simplifying platform

usability will make these tools more accessible, encouraging broader community engagement.

4. Providing capacity building for local governments

Many local governments lack the technological capability and digital literacy to implement and utilise participatory platforms like *e-Musrenbang* fully. The national government should invest in training programs to build capacity at the local level, especially with a focus on improving the skills needed to manage digital platforms and engage communities effectively. It will also help bridge the technological divide and ensure that local governments can independently use these tools to gather input from their citizens.

Academic Community and Future Research

International policymakers and researchers should focus on strengthening knowledge exchange on digital inclusion to enhance risk-sensitive development planning. Mobilising resources for emerging cities facing increased disaster and climate risks is crucial. Working with local governments to create supportive policies that promote the use of digital participatory platforms will further enhance these efforts.

Future research should explore digital literacy and the digital divide in participatory planning procedures, components or factors influencing risk-sensitive development planning, and community capacity for planning and building resiliency. These areas of study will provide valuable insights to improve participatory planning processes and outcomes.

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