

Managing participatory communication for climate adaptation in The Indonesia Climate Justice Network

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ABSTRACT

Climate change significantly threatens the sustainability of local communities, particularly those whose livelihoods remain closely tied to natural resources. Addressing this issue requires adaptation strategies that are not only scientifically grounded but also rooted in local experiences and cultural values. The present study seeks to examine the role of participatory communication in strengthening the adaptive capacity of communities confronting climate risks. This research is centered on the INCLINE Workshop (Indonesian Climate Justice Network) convened in Bali in March 2025, which involved participants from diverse backgrounds, including coastal, upland, and farming communities. Employing a qualitative case study design, the study applied thematic analysis to documents generated during the workshop, such as discussion records, issue mapping outputs, and community action plans. The findings reveal that local communities tend to interpret climate change through lived realities rather than technical terminology for instance, shifts in planting seasons, water scarcity, or the decline of traditional resources. Participatory communication emerges as an effective mechanism for fostering critical awareness, cultivating ecological solidarity, and encouraging grassroots adaptation practices. Examples include bamboo conservation initiatives, integrated waste management, and the revitalization of traditional food systems that support both resilience and cultural continuity. However, there are barriers such as limitations in village regulations, unequal access to information, and the exclusion of women in decision-making processes. The study's conclusions emphasize that contextual, horizontal, and dialogic communication is a crucial foundation for fair and sustainable climate adaptation strategies.

Keywords: Participatory communication; climate change; community capacity; climate justice; INCLINE-Ika

Manajemen komunikasi partisipatif untuk adaptasi iklim pada Jaringan Keadilan Iklim Indonesia

ABSTRAK

Perubahan iklim menjadi tantangan besar bagi keberlanjutan komunitas lokal, terutama yang kehidupannya bergantung pada sumber daya alam. Strategi adaptasi yang efektif memerlukan pendekatan komunikasi yang mampu menghubungkan pengetahuan ilmiah dengan pengalaman serta nilai-nilai lokal. Tujuan penelitian ini adalah menganalisis bagaimana komunikasi partisipatif dapat memperkuat kapasitas adaptasi komunitas lokal dalam menghadapi perubahan iklim. Studi ini berfokus pada Workshop INCLINE (Jaringan Keadilan Iklim Indonesia) yang diselenggarakan di Bali pada Maret 2025, dengan peserta dari komunitas pesisir, pegunungan, dan pertanian. Metode yang digunakan adalah studi kasus kualitatif dengan analisis tematik. Data penelitian diperoleh dari dokumen dan materi workshop yang memuat catatan diskusi, pemetaan isu, dan rencana aksi komunitas. Hasil penelitian menunjukkan bahwa komunitas memahami perubahan iklim melalui pengalaman nyata dan bahasa lokal, bukan melalui istilah ilmiah teknis. Komunikasi partisipatif efektif dalam membangun pemahaman kritis, memperkuat solidaritas ekologis, serta mendorong inisiatif adaptasi berbasis komunitas seperti konservasi bambu, pengelolaan limbah, dan revitalisasi pangan lokal. Namun, terdapat hambatan berupa keterbatasan regulasi desa, ketidakmerataan akses informasi, dan pengucilan perempuan dalam pengambilan keputusan. Simpulan penelitian ini menegaskan bahwa komunikasi yang kontekstual, horizontal, dan dialogis merupakan fondasi penting strategi adaptasi iklim yang adil dan berkelanjutan.

Kata-kata kunci: Komunikasi partisipatif; perubahan iklim; kapasitas komunitas; keadilan iklim, INCLINE-Ika

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INTRODUCTION

Climate change has become a global challenge with far-reaching impacts on ecosystems, economies and people's well-being. *The Intergovernmental Panel on Climate Change* report confirms that rising global temperatures, changing rainfall patterns, sea level rise, and intensification of extreme weather events are exacerbating social ecological vulnerabilities, especially in developing countries (Intergovernmental Panel on Climate Change (IPCC), 2023). Indonesia, as a tropical archipelago, has experienced significant impacts in the form of major floods, prolonged droughts, decreased agricultural productivity. In the highland area of Lake Toba, rice farmers face the challenge of changing growing season patterns and erratic weather, requiring adequate knowledge and adaptation strategies to maintain the sustainability of their farming businesses (Ismail et al., 2025). Meanwhile, in small island communities such as Mepar and Baran, perceptions of climate change risk are strongly influenced by direct experience of sea level rise and weather changes, which affect local adaptation strategies (Tezar & Setiadi, 2023).

Effective climate change adaptation policies require the active involvement of local communities, as participatory designed strategies have been shown to better suit local

contextual needs. The Climate Village Program (ProKlim), for example, adopts a Smart Village approach that involves communities directly in risk identification, adaptation planning, and implementation of solutions that leverage technology and community networks. This approach increases the community's resilience capacity to climate change and supports long-term sustainability (Ariyaningsih & Shaw, 2023). Climate change adaptation policies need to be designed inclusively to address the complexity of local challenges, particularly in communities facing hydrometeorological and environmental risks (Almalita & Dwivayani, 2023). One effective approach is through community based collaboration, where communities, institutions and the private sector jointly implement adaptation measures in everyday life, such as blocking canals, conducting fire patrols and emergency response actions to reduce the risk of peatland fires on the east coast of Sumatra (Ramdani & Mustalahti, 2023). At the urban level, studies in Bandung and Makassar show that a multi risk governance approach combining cross sector coordination, resilient infrastructure investment and community collaboration is a key to increase resilience and deliver equitable adaptation responses (Abdillah et al., 2025).

Understanding of climate change from local communities is an essential foundation for designing effective adaptation strategies

that meet local needs. In depth studies in West Kalimantan show that communities proactively recognize environmental stressors such as changes in rainfall, land degradation and declining agricultural yields. They also develop adaptive strategies in the form of crop diversification, agroforestry practices, and strengthening local social networks, all integrated in the concept of a *climate-smart landscape* that not only reduces ecological vulnerability, but also improves community welfare in a sustainable manner (Widayati et al., 2021).

Direct communication participation is proven to strengthen the adaptive capacity of local communities in the face of climate change. Studies from *Habitat* show that communication approaches that engage farmers through group discussions, training and practice based knowledge transfer help strengthen self reliance, improve understanding of weather dynamics and support the implementation of local adaptation strategies. Such approaches not only strengthen responsiveness to climate change, but also strengthen social capital and a sense of ownership over the adaptation policies being implemented (Abdullah et al., 2023).

The vulnerability of Indonesian communities to climate change depend on geographical, social and economic conditions. The need for *climate justice* arises when

communities that contribute the least emissions bear the brunt of impacts, demanding a fair and inclusive distribution of adaptation benefits (Putri & Wibowo, 2025). Studies in urban areas such as Bandung and Makassar emphasize the importance of integrated and equity-based multi-risk governance in strengthening community resilience (Abdillah et al., 2025).

Meanwhile, the growing civil society movement and climate justice activism in Indonesia also shows a critical role in pushing climate justice narratives with the involvement of local actors, reflecting the importance of *justice activism* in filling the void of socially sensitive adaptation policies (Tomsa, 2025).

The IKa workshop applied a participatory environmental communication approach that utilized methods such as *focus group discussions* (FGDs), community asset mapping, and interregional experience exchange. The study in West Kalimantan highlights how communities proactively recognize climate stressors, such as changes in rainfall patterns and ecosystem degradation, and develop integrated adaptation strategies such as crop diversification, agroforestry and institutional collaboration all towards the concept of *climate-smart landscape* (Widayati et al., 2021). A similar approach also applied in the national *Climate Village Program Plus (ProKlim Plus)* program, where the participation of local communities in dialogue,

planning, and implementation of adaptation policies has proven to be key to success, especially in regions such as East Kalimantan. Active community involvement increases program legitimacy, strengthens social capital, and creates more relevant and sustainable adaptation (Wiati et al., 2022).

The participatory approach adopted by IKA is in line with recent empirical findings the process of co-production of knowledge through FGDs, asset mapping, and inter-community learning can strengthen adaptive capacity and legitimize actions at the local level. Studies in West Kalimantan show how community participation in formulating priorities, revitalizing agrarian practices, and strengthening social networks form a more resilient adaptation landscape (Widayati et al., 2021). Meanwhile, a study on cross-actor daily collaboration to deal with peatland fires in coastal Sumatra confirmed that community, government and private sector networks built through dialogue forums and joint actions are key to equitable risk reduction (Ramdani & Mustalahti, 2023).

Despite the strong adaptive capacity of local communities, the scientific literature in Indonesia is limited in addressing their perspectives and knowledge in depth. Most research still focuses on technical aspects or macro policies, while local dynamics are

often overlooked. Studies in Bugis-Makassar communities highlight the importance of integrating traditional knowledge with modern science in climate adaptation strategies, such as the use of natural indicators to predict planting seasons (Limpo et al., 2022). On the other hand, research on lowland rice farmers shows that a co-production of knowledge process where local and scientific knowledge are synthesized together through collaboration is able to produce more relevant and sustainable adaptation solutions (Arifah et al., 2023).

This research aims to fill a gap in the literature that has rarely highlighted local communities' perceptions and adaptive actions to climate change through a participatory communication approach. Studies in Bugis-Makassar communities show that combining traditional knowledge with modern science in deliberative forums such as *Tudang Sipulung* strengthens the accuracy of agricultural decisions and increases adaptability to climate variability (Limpo et al., 2022). In addition, in South Sumatra Province, the implementation of the Climate Village Program (*ProKlim*) shows that communities actively involved in community based adaptation programs not only understand climate issues more deeply, but also implement tangible mitigation measures through cross stakeholder collaboration within a climate adaptation and mitigation framework

(Yunindyawati et al., 2025).

RESEARCH METHOD

This research uses a qualitative approach with a case study design, which is considered most appropriate for exploring in-depth the perceptions and responses of local communities to the challenges of climate change within a complex and diverse social context. A qualitative approach provides the flexibility to understand the social dynamics, meanings, and communication processes that occur within communities naturally, without variable manipulation or experimental intervention. The case study design was chosen because it allows researchers to thoroughly explore the phenomenon under study in a real world context and with high narrative depth (Creswell & Poth, 2018).

This observation unit refers to the INCLINE (Indonesia Climate Justice Network) Workshop held by Indonesia for Humanity (IKa) in March 2025 in Denpasar, Bali. Twenty participants represented local communities from various regions in Indonesia vulnerable to the impacts of climate change as listed in Table 1. Subjects were selected purposively, based on their active involvement in the forum, their diverse geographic regions, and their diverse climate experiences. This selection allowed

for the exploration of diverse perspectives that reflect the real-world conditions of grassroots communities facing climate change.

The type of data used in this study is qualitative secondary data sourced from official INCLINE-IKa Workshop documents, including activity implementation reports, group and plenary discussion minutes, facilitator notes, and community work results. The use of this secondary data provides an opportunity to understand the natural dynamics that took place during the workshop without direct intervention, while enriching the context through collective reflection from the various communities involved (Morgan, 2022).

Data collection was carried out through qualitative document analysis, namely a systematic review of written materials produced during and after the workshop. This process enables researchers to identify local narratives regarding the impacts of climate change, adaptation strategies developed, and patterns of participatory communication established in discussion forums. This approach is important because it not only records final outcomes but also documents the social interactions that shape shared understanding among participants (Morgan, 2022).

The collected data was then analyzed using thematic analysis, which involves systematic stages: intensive reading of all documents,

Table 1. List of Participants of the 2025 INCLINE-IKa Workshop in Bali

No	Nama Peserta	Position/Affiliation	Region
1	Baizar Zulmi	RUBEK PASI (Environmental and Restoration Activist)	Aceh Singkil, Aceh
2	Hermansyah	Head of Gosong Telaga Utara Village	Aceh Singkil, Aceh
3	Faiz Naufal D.R.	Yayasan Wangsakerta	Cirebon, West Java
4	Saripin	Digital Village Coordinator, Citemu Village	Cirebon, West Java
5	Danang Setiawan	Head of Pundungan Village	Klaten, Central Java
6	Muslim Afandi	Secretary General, Pusur Institute	Klaten, Central Java
7	Raudlatun	Perempuan Kobher	Sumenep, Madura, East Java
8	Moh. Suaryadi Hasan	Secretary of Matanair Village	Sumenep, Madura, East Java
9	Bagus Ademillah F.	Lembaga Olah Hidup	Sumbawa, West Nusa Tenggara
10	Jufrianto M.	Secretary of Balebrang Village	Sumbawa, West Nusa Tenggara
11	Ida Ayu Dwitasari	Research and Mapping Staff, Yayasan Wisnu	Bali
12	Guntur Juniarta	Representative of Tigawasa Village	Buleleng, Bali
13	Nur Laila Salidin	Liang Village Staff	Ambon, Maluku
14	Vivi Marantika	Maluku Association for Humanity (HUMANUM)	Maluku
15	Yohanes Kopang L.	Head of General Affairs of Pajinian Village Government	West Adonara, Flores
16	Brian Benedicto	Program Manager, Yayasan Agro Sorghum Flores (Yasores)	West Adonara, Flores
17	Maria Mervina N. Mey	Pelita Harapan NGO	Lembata, East Nusa Tenggara
18	Maria Monika Poring	Secretary of Katakeja Village	Lembata, East Nusa Tenggara
19	Agustina Wonga Bela	PAPHA Indonesia	Sikka, Maumere, East Nusa Tenggara
20	Ardianus Dala	Done Village Secretary	Sikka, Maumere, East Nusa Tenggara

Source: Compiled from the results of the INCLINE-IKa Workshop and Activity Minutes (2025)

coding relevant sections, grouping codes into themes, reviewing and naming the main themes to align with the research focus. This analysis aligns with methodological guidelines emphasizing the importance of clarity and consistency in the interpretation process (Kiger & Varpio, 2020; Nowell et al., 2017).

Data validity is maintained through document source triangulation, which involves comparing information from reports, minutes, and facilitator notes to verify the consistency of findings. This approach has been shown to enhance the reliability and credibility of qualitative research results (Shea, 2022).

Additionally, an audit trail was applied to the coding and interpretation processes to ensure transparency and enable reproducibility of the analysis (Nowell et al., 2017).

The ethical aspects of the research were maintained through the use of data that had been published internally within the INCLINE network with written permission from the organizers. The researchers ensured that the participants' identities were represented professionally and ethically, without manipulation or distortion, and that all quotations, institutional names, and geographical contexts were presented factually while respecting the integrity of the communities involved.

RESULTS AND DISCUSSION

The understanding from local communities of climate change is rarely expressed in technical terms such as global warming, carbon emissions, or greenhouse gases. For rural, coastal, and mountain communities, climate change is more tangibly felt through daily experiences such as increasingly unpredictable planting seasons, reduced water availability in fields and rivers, decreased crop yields, and adjustments in traditional practices. Empirical evidence from the Lake Toba region shows that farmers formulate adaptation decisions primarily based on direct observations of

weather anomalies and water cycles, rather than technocratic discourse (Ismail et al., 2025). In West Kalimantan, community perceptions of climate stressors like extreme seasons, fires, and saltwater intrusion were identified through group discussions and adaptive practices rooted in local experience (Widayati et al., 2021). Recent research also highlights differences in perceptions across social roles and gender, showing how life experiences shape how communities interpret and respond to environmental change (Voronkova et al., 2025). Therefore, an effective environmental communication framework must prioritize the language of experience and participatory spaces, where local knowledge forms the basis for developing adaptation strategies relevant to communities (Ramdani & Mustalahti, 2023). Table 2 presents the matrix of community understanding and response to climate change.

In Balebrang Village, West Nusa Tenggara, the experience of Jufrianto M., the Village Secretary, serves as a concrete example of how climate change is shaking the community's economic base. The village has historically relied on forest honey as its primary income. However, in recent years, the community has begun to lose forest cover, the habitat of honeybees. "Our forest used to be dense, with shady trees providing shelter for bees. But now, nearly 14 hectares are being lost each year

Table 2. Matrix of Community Understanding and Response to Climate Change

No	Location/Region	Understanding Climate Change	Community Response
1	Balebrang, West Nusa Tenggara	Climate change is causing the loss of forests and honeybees, considered a livelihood crisis	Greening movement, construction of embankments to prevent landslides
2	Tigawasa, Bali	The loss of bamboo has an impact on water scarcity and disruption to traditional ceremonies	Replanting bamboo as an effort to conserve and restore cultural values
3	Liang, Maluku	Rising sea levels and abrasion are seen as threats to the safety and health of children.	Mutual cooperation to build embankments and maintain water channels
4	Matanair, Madura	Unpredictable rainy season causes confusion regarding planting schedules and economic uncertainty.	Adaptation of livelihood strategies and shifting work outside the village
5	Pundungan, Klaten	Awareness that environmental damage upstream has an impact downstream	TPS3R development and integration with agriculture; cross-regional advocacy
6	East Flores, East Nusa Tenggara	Limited water is understood as a challenge that is not suitable for current national food systems	Revitalization of local crops and criticism of top-down policies
7	Sumenep, Madura	Environmental change is understood as a space for the struggle for women's rights and ecological justice	Waste management education for women and young people, and strengthening social participation
8	Lereng Merapi, Central Java	The decline in water quality is understood to be the result of river exploitation that is disconnected from the unity of the ecosystem.	Organizing citizens for a collective upstream-midstream-downstream approach

Source: Compiled from the results of the INCLINE-IKa Workshop and Activity Minutes, 2025

because the weather is becoming increasingly unpredictable any trees are dying” (Jufrianto, FGD, March 18, 2025).

Climate change is not just about statistics on rising global temperatures, but about survival. This testimony demonstrates how ecological changes impact household economic resilience. The concept of vulnerability is understood as a predisposition to adverse impacts that includes sensitivity and limitations in capacity to cope and adapt (Intergovernmental Panel on Climate Change (IPCC), 2023). In households whose livelihoods depend on ecosystems, disruptions to ecological functions like peat fires or weather

anomalies increase exposure and sensitivity while reducing adaptive capacity, thereby increasing socioeconomic risk.

Empirical evidence in Indonesia shows that small scale fishing households in Lampung experience livelihood vulnerability due to climate variability that triggers income uncertainty (Riantini et al., 2024). Similarly, farming households on peatlands in South Sumatra exhibit a combination of social, economic, and ecological vulnerabilities post-fire that impact livelihood changes (Yazid et al., 2024). Operationally, the socio ecological vulnerability framework emphasizes three

components exposure, sensitivity, and adaptive capacity that need to be addressed simultaneously through interventions based on local livelihoods, rather than solely technocratic approaches (Woroniecki et al., 2023).

A similar experience emerged in Tigawasa, Bali, a traditional village that has relied on bamboo for many aspects of its life. Guntur Juniarta, a local figure, explained that bamboo has ecological, spiritual, and cultural functions integral to the community's daily lives. "If bamboo is gone, not only will water become scarce, but our ceremonies will also be incomplete" (Guntur, FGD, March 18, 2025). From an environmental communications perspective, the loss of ecological elements like bamboo can shake the foundations of a community's social and spiritual meaning. Ecosystems are not just shelters or providers of environmental services, but also living spaces that shape collective identity.

From eastern Indonesia, Vivi Marantika from HUMANUM in Maluku shared her testimony about coastal communities affected by rising sea levels and coastal erosion. "We often can't go out to sea. The water is rising, and even the harbors can't be used. Children are getting sick more often because the air and water are unstable" (Vivi, FGD, March 18, 2025).

This statement illustrates how climate change limits economic mobility, disrupts food

access, and impacts health, particularly for vulnerable groups like women and children, highlighting the inequality of adaptation.

The climate crisis also drives demographic change, as recounted by Moh. Suaryadi Hasan from Matanair Village, Madura. He said that the rainy season now arrives erratically, causing confusion among farmers. "Since 2021, the rains have become unpredictable. Farmers are confused about when to plant. Many have ended up moving to the city for work" (Suaryadi, FGD, March 18, 2025). Changing rainfall patterns have resulted in repeated crop failures, forcing some people to migrate to cities for survival. This is not only an ecological issue but also socio cultural, as population movement contributes to the loss of local knowledge passed down through generations.

In downstream areas like Pundungan Village, Klaten, the challenge stems from spatially unequal waste management. Danang Setiawan, the village head, stated that his village bears the ecological burden of waste disposal from upstream areas. "If the upstream and midstream areas dispose of waste, we, the downstream areas, receive it" (Danang, FGD, March 18, 2025). The community has developed a community based innovation in the form of TPS3R, integrated with livestock farming and rice milling. However, without cross village coordination, the performance of

this initiative is suboptimal. Recent evidence shows that community based waste management is more effective when supported by horizontal networks and collaborative governance that fosters mutual learning (Abdillah et al., 2025; Budiarto et al., 2025). Increasing public participation in waste management requires multi stakeholder collaboration, locally relevant communication frameworks, and horizontal feedback mechanisms to ensure sustainability (Pambudi et al., 2025). The slopes of Mount Merapi also present their own story. Muslim Afandi from the Pusur Institute stated that C mining activities have caused significant river degradation. “Water is becoming increasingly scarce. The river is becoming murky, and the ecosystem is being damaged. We are trying to integrate knowledge between the upstream, midstream, and downstream areas” (Muslim, FGD, March 18, 2025).

This statement demonstrates that some communities are beginning to recognize the importance of a holistic approach to ecosystem restoration, which requires collaboration across spatial boundaries and actors. The narratives above not only reflect community awareness of climate change but also demonstrate diverse, organic responses. In Pundungan Village, the integration of waste management and agricultural systems represents a form of adaptive innovation. However, as Danang

emphasized, “if the upstream continues to dump waste, we will still be overwhelmed.” This suggests that technical innovation cannot stand alone without social agreements and policies across administrative boundaries.

In West Nusa Tenggara, reforestation and embankment construction have become community options in addressing the environmental crisis. Jufrianto noted that tree replanting is being carried out around customary forest areas to restore bee habitat and strengthen water absorption. This step is not only ecological but also symbolic, attempting to rebuild the relationship between humans and nature. Within the framework of adaptive capacity, community actions reflect collective efforts to improve socio ecological resilience. Research shows that adaptive capacity involves more than the accumulation of resources; it includes adaptive potential, which is the ability of socio-ecological systems to change and apply resources in response to environmental uncertainty (Seaborn et al., 2021).

A more cultural context is evident in Tigawasa, Bali, where adaptation efforts are implemented through restoring traditional bamboo cultivation practices. “Bamboo is not just a plant, but a part of our lives” (Guntur, FGD, March 18, 2025). Revitalizing local traditions is a strategy to strengthen identity while adapting to the ecological crisis. This demonstrates that

climate adaptation can also provide a space to celebrate previously marginalized cultural values.

On the coast of Liang Village, Central Maluku, mutual cooperation (*gotong royong*) is a key force in addressing the threat of abrasion. Nur Laila Salidin explained that the community collectively maintains the coastline and builds barrier structures using traditional methods. “We bring together residents to protect the village from abrasion” (Nur, FGD, March 18, 2025). This strategy reflects the importance of social cohesion. In situations with minimal structural support from the government, horizontal solidarity is key to sustainability.

Meanwhile, in East Flores, a local food approach is a form of resistance to top-down agricultural policies deemed out of context. Brian Benedicto of Yasores stated that national programs like the rice-corn-soybean (PAJALE) system waste water and are unsuitable for the local climate. “We started planting sorghum and millet” (Brian, FGD, March 18, 2025). This is an expression of food sovereignty that also serves as an adaptation strategy to climate change and national food dependence.

A socially engaged response is also evident in the Perempuan Kobher community movement in Sumenep, Madura. Raudlatun, one of the activists, explained that they organize women to manage household waste and discuss

environmental rights. “We teach women how to manage waste and start talking about the right to life and the environment” (Raudlatun, FGD, March 18, 2025). Climate change, in this context, serves as a gateway to strengthening women’s roles in decision-making and social transformation.

Ultimately, the Pusur Institute’s integrative approach to river management provides an important lesson. “If it’s not intact, water problems remain” (Muslim, FGD, March 18, 2025). They strive to foster dialogue between stakeholders across villages, include school communities and farmer groups, to ensure the sustainability of water resources. This model underscores the importance of collaborative governance and interregional communication as part of a systemic adaptation strategy.

The experiences of local communities across Indonesia demonstrate that understandings of climate change do not always align with global scientific terminology. However, this does not make their experiences any less valid. On the contrary, these experiences enrich our perspective on climate change as a multidimensional crisis: ecological, social, economic, and cultural. The emerging responses are not homogeneous but vary according to their respective local contexts. Within environmental communication, these narratives must be placed at the center of national climate planning.

Without listening to and understanding the local roots of change, any adaptation strategy will be vulnerable to failure not due to a lack of technology, but a lack of meaning.

Climate change is not only an ecological challenge, but also a social, political, and communication crisis. In an archipelagic nation like Indonesia, with its vast geographic and social diversity, responses to climate change cannot be uniform. Instead, understanding and adaptation strategies need to be firmly rooted in the local context and shaped through inclusive processes. This is where participatory communication plays a crucial role. This approach aims not only to convey information about climate change but also to open spaces for dialogue, share experiences, and build collective capacity for action.

The INCLINE-IKa workshop serves as a concrete example of how participatory communication can be a strategic tool. This activity went beyond simply inviting communities to “receive” knowledge, encouraging them to become producers of meaning and solutions. Through methods such as group discussions, climate change cards, and vulnerability mapping, the workshop created a meaningful two way learning process. This enabled communities to articulate their experiences, unpack existing structures of vulnerability, and develop adaptation measures

relevant to local conditions.

One of the prominent approaches of workshop was mapping community assets using a pentagonal framework encompassing five categories: natural, human, social, physical, and financial. When participants were asked, “What do we have to survive when extreme weather strikes?”, they began to realize that community resilience depends not only on infrastructure or external assistance, but also on social networks, local knowledge, and mutual cooperation. One participant from Klaten noted that although her village has a TPS3R waste facility and a community rice mill, they are still highly dependent on upstream governance. “We realize that no matter how strong our management system is, if those upstream don’t help maintain it, we will still be impacted” (Danang, FGD, March 18, 2025).

This statement emphasizes a systemic perspective in understanding climate issues. Communities recognize that adaptation is no longer solely an internal village matter, but an issue that transcends social and geographical boundaries. Within adaptive capacity theory, participatory communication serves to expand the space for negotiation and collaboration between communities, emphasizing that resources and risks are interconnected. Recent studies confirm that adaptive capacity encompasses the collective ability to manage

these interconnections, balancing adaptation potential and real responses to environmental change (Seaborn et al., 2021).

Communication becomes a tool for synthesizing fragments of experience into a collective understanding. Furthermore, the workshop intentionally brought together communities from various regions, from the mountains of Bali, the coast of Maluku, to the agricultural plains of Central Java. With this diverse geographic context, the exchange of knowledge between communities was an enriching process. For example, when participants from Liang, Maluku, recounted how coastal erosion forced them to relocate their homes, participants from Matanair, Madura, responded with stories of erratic rainfall and drying water sources. In moments like these, an awareness of the interconnectedness of their conditions emerged.

Within environmental communication theory, personal narratives serve as a medium for building ecological solidarity. When communities realize that their experiences are not isolated events but part of a larger climate crisis, it opens up opportunities for collaboration, advocacy, and collective action. Participatory communication in this domain is not merely about conveying messages but about creating a space to connect shared experiences, build collective awareness, and design adaptive

initiatives rooted in lived narratives (Roig, 2025).

However, the success of participatory communication is also determined by the facilitator's ability to develop language, media, and discussion spaces appropriate to the participants' socio cultural context. According to the workshop facilitators, the main challenge stems from gaps in understanding climate technical terms. Concepts such as "mitigation," "ecosystem-based adaptation," or "NDC" often sound unfamiliar. Therefore, the facilitator team actively used local language and visual aids like images of trees or leaky buckets as metaphors to explain these abstract concepts.

This approach emphasizes that the success of participatory communication is highly dependent on the local context. Communication must build bridges between global science and everyday experiences. When narratives of climate change are linked to stories of failed bamboo harvests or dry dams, the issue becomes more powerful and encourages community action. This also underscores the principle of meaningful participation in development communication that is, it only occurs when communities can connect issues to their own lived experiences. Contemporary studies in Ghana show that development services that employ participatory communication are more effective when the process is inclusive and relevant to local

communities (Odoom et al., 2024).

The impact of this participatory approach extends beyond improving community climate literacy, leading to the emergence of new initiatives. In some areas, like East Flores and Klaten, participants began developing local adaptation plans based on community practices, such as strengthening local food crops, expanding the TPS3R network, and creating community-based training modules. Elsewhere, such as in Sumenep, the workshops became a starting point for women's communities to expand their roles beyond household waste management to broader environmental and right-to-life advocacy. "Until now, we've only received programs. Now we want to create our own" (Raudlatun, FGD, March 18, 2025).

This statement reflects a significant epistemological shift: communities see themselves not merely as recipients of policy, but as actors with the right and capacity to determine the direction of change. In this context, communication serves as a micro political arena for negotiation, strategy formulation, and collective action. This transformation is the essence of empowerment, where communication is no longer an instrument of outreach but becomes a vehicle for strengthening the community's bargaining position within social power structures.

As a space that brings together experience

and strategy, the workshop also produced new forms of experience based leadership. Several participants previously inactive in village activities began to be trusted as community liaisons on climate issues. This signifies a regeneration of values based leadership, growing from the bottom up and driven by real experiences, not just formal structures. In the long term, this pattern is crucial for the sustainability of the community's response to climate change.

Participatory communication plays a crucial role in responding to climate change at the community level. This approach creates space for knowledge exchange, articulation of experiences, resource mapping, and formulation of locally relevant collective strategies. In the INCLINE-IKa Workshop, participatory communication not only enhanced technical understanding but also built critical awareness, ecological solidarity, and collective capacity. It demonstrates that sustainable climate adaptation must start from the bottom up from narratives, experiences, and the community's ability to determine their own path in facing the ongoing crisis.

While local communities demonstrate diverse understandings and responses to climate change, their adaptation processes are not free from fundamental structural, cognitive, and cultural challenges. These challenges, revealed

Table 3 Matrix of Challenges Faced by Communities in Adapting to Climate Change

Challenge Categories	Narrative Description of the Field	Theoretical / Conceptual Implications
Differences in perception of the causes of climate change	People understand climate change through natural signs (cloudy rivers, crop failures, abrasion), not technical terms like “carbon emissions” or “greenhouse gas”.	Mismatch between local and global narratives (Cox, 2013); the need for dialogic communication
Lack of village regulations (Perdes)	Local adaptation initiatives like reforestation or emergency embankments lack a strong legal basis. They are vulnerable to changing direction if leadership changes.	Adaptation requires local institutions (Adger, 2006)
Technical terms not understood by the community	Concepts like “mitigation” and “resilience” confuse residents, even though they have adapted through everyday experiences.	Technocratic vs. participatory communication gap (Servaes, 1999)
Limited access to information & communication	Remote areas struggle with internet access, signal reception, or participation in centralized training. This results in delays in policy response.	Digital and information inequality amplifies social vulnerability
Inequality of social participation	Women and indigenous groups are often excluded from decision-making processes, even though they are heavily impacted and have important local knowledge.	Power asymmetry and the importance of social inclusion in adaptation
Social fragmentation in the community	Some residents are environmentally conscious, while others remain unconcerned. Adaptation initiatives have stalled due to a lack of collective understanding and commitment.	Social cohesion as adaptation capital (Adger, 2006)

Source: Compiled from the results of the INCLINE-IKa Workshop and Activity Minutes (2025)

during the workshop, not only highlight knowledge gaps but also indicate the importance of an inclusive policy and communication ecosystem to foster comprehensive community resilience. Furthermore, the challenges faced by communities in adapting to climate change are summarized in Table 3.

One of the most prominent challenges is the differing perceptions about the causes of climate change. For some communities, environmental damage is more associated with direct human interventions like land clearing or mining than with technical terms like “carbon emissions.”

“When asked about climate change, people will mention damaged waterways or murky rivers due to mining. They don’t mention carbon or global temperature. But for us, that’s enough, because it’s a form of experience-based understanding” (FGD, March 18, 2025).

This statement demonstrates a contextual form of ecological understanding, yet remains distanced from the scientific language used in national and global policies. In environmental communication, this semantic gap reflects an epistemological challenge: global narratives based on scientific frameworks are often out of sync with community narratives shaped by

real experiences. This indicates that overly technocratic communication approaches have the potential to marginalize local experiences, even though these experiences form the primary foundation for designing meaningful adaptation strategies (Donald et al., 2022).

The second challenge relates to the lack of institutionalized local policy support, particularly in the form of village regulations (Perdes) that govern adaptive natural resource management. Several activists noted that adaptation efforts are often individual or collective community-based initiatives, without a strong policy framework to ensure sustainability. Vivi Marantika from HUMANUM stated: “We work together to build embankments and educate residents about abrasion, but there is no village legal framework to protect coastal areas. So, if the village head changes, everything could change” (FGD, March 18, 2025).

This issue highlights the importance of institutional support in ensuring the sustainability of community-based adaptation. Adaptation capacity is determined not only by access to resources but also by local policy structures and governance. The third challenge is the barrier to understanding technical concepts of climate change. Although communities have experienced the impacts directly, not all residents understand the terms used in policy documents. Guntur Juniarta

from Tigawasa said: “When people come to give training, sometimes the terms are difficult. We get confused, even though we know the conditions in our village” (FGD, March 18, 2025). This situation demonstrates asymmetric communication, where the messenger fails to translate technical concepts into language that is understandable and locally relevant. Research emphasizes the reciprocal relationship between environmental perceptions and language. Barriers often arise when the language used by outsiders does not correspond to the social reality of the community, hindering dialogue. Recent studies indicate that collective storytelling and community creativity are important approaches in bridging this gap (Roig, 2025). As a result, communities can feel alienated from adaptation programs.

These challenges also intersect with the issue of power asymmetry between local actors and external institutions. Several workshop participants noted that in the development process, community voices are often not considered equally. Raudlatun from the Kobher Women’s Community emphasized: “Women are often only involved in the background. Even though we know the most about water, food, and waste. But we are never involved in important meetings” (FGD, March 18, 2025). This statement clarifies that communication barriers also occur in the form of structural

exclusion of vulnerable groups, particularly women.

Furthermore, there are challenges related to limited communications infrastructure, particularly in remote areas. Brian Benedicto from Yasores said: “In our village, the signal is poor. So, when there’s a new program from the central government, we’re often the last to know” (FGD, March 18, 2025). This challenge reflects the marginalized position of communities within the national information system. Lack of information makes it difficult for communities to respond to policies or access government-provided resources. Some communities also face social fragmentation that hinders collective mobilization. Danang Setiawan stated: “Not all residents share the same concerns. Some still litter, while others are becoming more aware. But if we don’t work together, it’s difficult to move forward together” (FGD, March 18, 2025). This fragmentation demonstrates that successful climate adaptation requires strong social cohesion.

Considering all these challenges, it becomes clear that climate adaptation cannot be viewed as a purely technical matter, but also as a matter of communication and social reconstruction. An approach is needed that addresses not only the “what” and “how” but also the “who speaks” and “who is listened to.” In this context, the INCLINE-IKa Workshop played a crucial role

as a meeting place between scientific and local languages. However, to broaden its impact, a more transformative communication strategy is needed, one that reaches the root causes of inequality.

CONCLUSION

Climate change is not merely a technical and ecological issue that can be resolved through-down intervention. Rather, it is a complex and multidimensional socio communicative phenomenon that requires the active involvement of communities at every stage of understanding and response. Findings from the INCLINE-IKa Workshop show that the understanding of local communities about climate change does not stem from global scientific terminology such as carbon emissions or the greenhouse effect, but deeply rooted in their direct experiences, signs of nature, and cultural values embedded in their daily lives. For them, the climate crisis is not abstract data, but a tangible reality felt through unpredictable planting seasons or drying water sources. Therefore, effective and sustainable adaptation strategies must begin with these local narratives, not merely with technocratic macro policy frameworks.

Participatory communication has been proven to play a central role as a bridge connecting global scientific narratives with the social realities of communities. This approach

is more than just one way education, it is a process of facilitating dialogue that enables the articulation of local experiences, the mapping of collective vulnerabilities, and the formulation of contextual adaptation strategies. Through methods such as pentagonal asset mapping in workshops, participants not only identify their shortcomings, but also discover internal strengths that have been overlooked, such as social capital in the form of mutual assistance in Maluku or traditional knowledge in local food management in East Flores. This process shifts the community's paradigm from being the object of policy in becoming active subjects capable of designing their own future. Moreover, when participants from different geographies mountains, coasts, and drylands share their stories, an ecological solidarity across regions is built. The realization that their problems, although different in form, have the same roots, becomes the foundation for a larger collective movement.

REFERENCES

- Abdillah, A., Widianingsih, I., Buchari, R. A., & Nurasa, H. (2025). Adapting to climate change and multi-risk governance: Toward sustainable adaptation and enhancing urban resilience—Indonesia. *Discover Applied Sciences*, 7(1), 81. <https://doi.org/10.1007/s42452-025-06491-7>
- Abdullah, S., Sarwoprasodjo, S., & Hapsari, D. R. (2023). Participatory communication to strengthen farmers' empowerment and adaptation in facing the impacts of climate change. *Habitat*, 34(3), 245–255. <https://doi.org/10.21776/ub.habitat.2023.034.3.22>
- Almalita, R., & Dwivayani, K. D. (2023). Participatory communication of Guntung urban village community Bontang city in compost management. *Jurnal Manajemen Komunikasi*, 8(1), 1–20. <https://doi.org/10.24198/jmk.v8i1.43063>
- Arifah, Salman, D., Yassi, A., & Bahsar Demmallino, E. (2023). Knowledge flow analysis of knowledge co-production-based climate change adaptation for lowland rice farmers in Bulukumba Regency, Indonesia. *Regional Sustainability*, 4(2), 194–202. <https://doi.org/10.1016/j.regsus.2023.05.005>
- Ariyaningsih, & Shaw, R. (2023). Community-based approach for climate Resilience and COVID-19: Case study of a Climate Village (Kampung Iklim) in Balikpapan. *Land*, 12(3), 650. <https://doi.org/10.3390/land12030650>
- Budiyarto, A., Clarke, B., & Ross, K. (2025). Overview of waste bank application in Indonesian regencies. *Waste Management & Research: The Journal for a Sustainable Circular Economy*, 43(3), 306–321. <https://doi.org/10.1177/0734242X241242697>
- Cox, R. (2013). *Environmental communication and the public sphere* (3rd ed.). Sage Publications.
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (4th ed.). Sage Publications, Inc.
- Donald, R., Young, C., & Mach, K. J. (2022). The role of local narratives in emerging climate governance. *Environmental Research: Climate*, 1(1), 015003. <https://doi.org/10.1016/j.eres.2022.01.003>

- doi.org/10.1088/2752-5295/ac7aca
- Intergovernmental Panel on Climate Change (IPCC). (2023). *Climate change 2022 – impacts, adaptation and vulnerability*. Cambridge University Press. <https://doi.org/10.1017/9781009325844>
- Ismail, R., Revida, E., Lubis, S., Kardhinata, E. H., Sutatminingsih, R., Manurung, R., Hafi, B., Harahap, R. H., & Sihotang, D. (2025). Climate change adaptation knowledge among rice farmers in Lake Toba Highland, Indonesia. *Sustainability*, 17(13), 5715. <https://doi.org/10.3390/su17135715>
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE guide no. 131. *Medical Teacher*, 42(8), 846–854. <https://doi.org/10.1080/0142159X.2020.1755030>
- Limpo, S., Fahmid, I., Fattah, A., Rauf, A., Surmaini, E., Muslimin, Saptana, Syahbuddin, H., & Andri, K. (2022). Integrating indigenous and scientific knowledge for decision making of rice farming in South Sulawesi, Indonesia. *Sustainability*, 14(5), 2952. <https://doi.org/10.3390/su14052952>
- Morgan, H. (2022). Conducting a qualitative document analysis. *The Qualitative Report*, 27(1), 64–77. <https://doi.org/10.46743/2160-3715/2022.5044>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1). <https://doi.org/10.1177/1609406917733847>
- Odoom, D., Dick-Sagoe, C., Opoku, E., & Obeng-Baah, J. (2024). Participatory communication in the provision of development services in the Ghanaian decentralised government system: evidence from the Central Region. *Discover Sustainability*, 5(1), 266. <https://doi.org/10.1007/s43621-024-00336-w>
- Pambudi, N. F., Simatupang, T. M., Samarakoon, S. M. K., Mulyono, N. B., Ratnayake, R. M. C., & Okdinawati, L. (2025). Enhancing public participation in plastic waste management for a sustainable circular economy: Insights from Indonesia. *Journal of Material Cycles and Waste Management*, 27(5), 3366–3389. <https://doi.org/10.1007/s10163-025-02294-5>
- Putri, M. A., & Wibowo, T. O. (2025). Internal communication strategies of startup in shaping a productive organizational communication climate. *Jurnal Manajemen Komunikasi*, 9(2), 174–193. <https://doi.org/10.24198/jmk.v9i2.58698>
- Ramdani, R., & Mustalahti, I. (2023). Collaborative everyday adaptation to deal with peatland fires: A case study on the east coast of Sumatra, Indonesia. *Ecology and Society*, 28(3). <https://doi.org/10.5751/ES-14263-280312>
- Riantini, M., Mardiharini, M., Saptana, Sudjarmoko, B., Kasymir, E., Nur'aini, L. G., Anindita, S. H., Syukur, M., Zulham, A., Wardono, B., Ardana, I. K., Indrawanto, C., & Wahyudi, A. (2024). Livelihood vulnerability household fishermen household due to climate change in Lampung Province, Indonesia. *PLOS ONE*, 19(12), e0315051. <https://doi.org/10.1371/journal.pone.0315051>
- Roig, A. (2025). Our future stories: Approaches to collective storytelling and citizen creativity in climate discourse. *Environmental Communication*, 19(2), 337–350. <https://doi.org/10.1080/17524032.2024.2393776>
- Seaborn, T., Griffith, D., Kliskey, A., & Caudill,

- C. C. (2021). Building a bridge between adaptive capacity and adaptive potential to understand responses to environmental change. *Global Change Biology*, 27(12), 2656–2668. <https://doi.org/10.1111/gcb.15579>
- Shea, T. (2022). The potential for qualitative triangulation to mitigate investigative negligence. *Police Practice and Research*, 23(2), 195–211. <https://doi.org/10.1080/15614263.2021.1915786>
- Tezar, T., & Setiadi, R. (2023). Risk perception of small islands community on climate change: Evidence from Mepar and Baran Islands, Indonesia. *Island Studies Journal*, 19(1). <https://doi.org/10.24043/001c.89381>
- Tomsa, D. (2025). Environmental and climate justice activism in Indonesia. *Journal of Contemporary Asia*, 1–20. <https://doi.org/10.1080/00472336.2025.2474003>
- Voronkova, A., Miller, A. E., Praptiwi, R. A., Pratiwi, P. D. L., Sugardjito, J., White, M. P., & Morrissey, K. (2025). Gender differences in perceptions of environmental changes in West Kalimantan, Indonesia: Existing and shifting social roles. *Society & Natural Resources*, 1–18. <https://doi.org/10.1080/08941920.2025.2534958>
- Wiati, C. B., Dharmawan, I. W. S., Sakuntaladewi, N., Ekawati, S., Wahyuni, T., Maharani, R., Hadiyan, Y., Naibaho, Y., Satria, W. I., Ngatiman, N., Abdurachman, A., Karmilasanti, K., Laksmi, A. N., Angi, E. M., & Khadka, C. (2022). Challenges to and strategies for the climate village program plus: A lesson learned from Indonesia. *Sustainability*, 14(9), 5530. <https://doi.org/10.3390/su14095530>
- Widayati, A., Louman, B., Mulyoutami, E., Purwanto, E., Kusters, K., & Zagt, R. (2021). Communities' adaptation and vulnerability to climate change: Implications for achieving a climate-smart landscape. *Land*, 10(8), 816. <https://doi.org/10.3390/land10080816>
- Woroniecki, S., Spiegelenberg, F. A., Chausson, A., Turner, B., Key, I., Md. Irfanullah, H., & Seddon, N. (2023). Contributions of nature-based solutions to reducing people's vulnerabilities to climate change across the rural Global South. *Climate and Development*, 15(7), 590–607. <https://doi.org/10.1080/17565529.2022.2129954>
- Yazid, M., Adriani, D., Riswani, & Damayanthi, D. (2024). household vulnerability due to land and forest fire in peatland areas in South Sumatra. *Land*, 13(5), 642. <https://doi.org/10.3390/land13050642>
- Yunindyawati, Y., Lidya, E., & Azni, U. S. (2025). Community-based climate change adaptation and mitigation through the climate village program (ProKlim) in South Sumatra, Indonesia. *Environment and Ecology Research*, 13(1), 140–150. <https://doi.org/10.13189/eer.2025.130113>