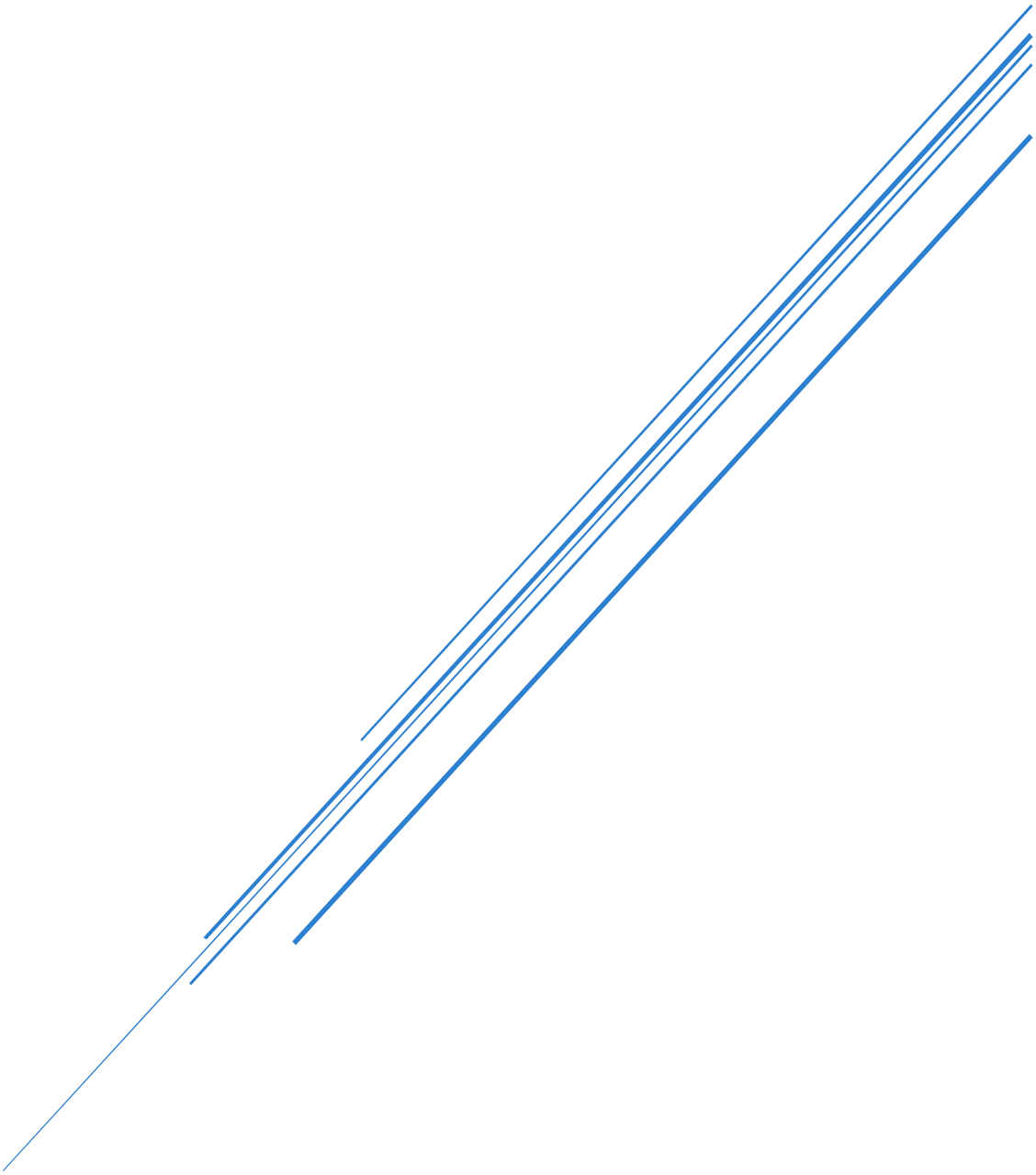
POLICY BRIEF

Strengthening Climate Resilient Health System in Indonesia



JOINT LEARNING NETWORK
COUNTRY CORE GROUP INDONESIA

EXECUTIVE SUMMARY

Indonesia is among the countries most vulnerable to the impacts of climate change due to its geographic, demographic, and socio-economic characteristics. Increasing temperatures, extreme weather events, sea level rise, and shifting disease patterns are placing growing pressure on the national health system. While Indonesia has made progress in climate and health policy integration, significant structural and operational challenges remain. This policy brief examines key barriers to building a Climate Resilient Health System (CRHS) in Indonesia and proposes strategic policy directions to strengthen resilience, equity, and sustainability.

This policy brief was developed through a series of three consultative workshops conducted at both national and sub-national levels. The first workshop was held in Jakarta at the national level, involving relevant line ministries and key stakeholders to establish strategic directions and policy alignment. The second workshop took place on December 9th in Bogor City, West Java Province, with 30 participants representing 12 local government agencies and 9 sub-districts. The third workshop was conducted on December 10th in Yogyakarta Province, involving 32 participants from 14 local agencies and 4 sub-districts. These sub-national workshops provided an important platform for local actors to share operational experiences, challenges, and practical innovations.

The difference in dominant issues between the national and subnational levels reflects their distinct roles within the governance system. At the national ministry level, the primary focus is on policy formulation, strategic planning, and resource allocation. Ministries are responsible for setting national priorities, designing regulatory frameworks, and securing funding from state budgets and international sources. As a result, discussions tend to concentrate on policy coherence, budget ceilings, financing mechanisms, and alignment with national development plans. These institutions operate at a macro level, where success is often measured by policy adoption and funding mobilization rather than direct behavioral outcomes.

At the regional and local levels, governments interact more closely with communities and are responsible for implementation and service delivery. Here, the effectiveness of national policies depends heavily on public understanding, acceptance, and participation. Local governments frequently encounter low public awareness, limited risk perception, and behavioral resistance as the main barriers to implementation. Without sufficient community engagement, policies related to climate, health, or disaster preparedness struggle to translate into concrete actions, regardless of how well they are designed or funded at the national level.

This gap also reflects differences in capacity, incentives, and time horizons. National actors often work within long-term strategic frameworks and formal planning cycles, while local authorities face immediate operational challenges and social realities. Public awareness becomes a priority at the local level because it directly affects program uptake, compliance, and sustainability. Bridging this divide requires stronger vertical coordination, clearer policy communication, and investment in community-centered approaches that connect national policy intent with local action and behavioral change.

BACKGROUND AND CONTEXT

Climate change is increasingly recognized as a major determinant of population health. In Indonesia, climate-related hazards such as floods, droughts, heatwaves, forest fires, and vector-borne disease outbreaks have intensified in frequency and severity. These hazards disproportionately affect vulnerable populations, including low-income households, coastal communities, small island residents, indigenous groups, and those living in remote areas.

Indonesia's national development priorities have historically focused on poverty reduction and education because these areas are viewed as the most immediate and tangible foundations for social stability, economic growth, and political legitimacy. As a middle income country with a large population and significant regional disparities, Indonesia continues to face structural challenges such as income inequality, unemployment, and uneven access to quality education. Addressing poverty and human capital development delivers visible short- to medium-term outcomes, aligns closely with electoral cycles, and directly responds to public expectations. In contrast, climate change is often perceived as a long-term, indirect, or cross-cutting risk, making it less politically salient compared to urgent socio-economic needs.

In addition, climate issues in Indonesia have traditionally been framed as environmental or sectoral concerns rather than as core development and welfare challenges. This framing has resulted in climate action being mainstreamed only partially across national planning and budgeting systems. Limited fiscal space, competing development priorities, and fragmented institutional mandates further constrain the elevation of climate change as a primary national agenda. However, as climate impacts increasingly undermine poverty reduction gains, education outcomes, and public health, there is growing recognition that climate resilience must be repositioned not as a separate issue, but as an integral component of sustainable development and human well-being.

The concept of a Climate Resilient Health System refers to the capacity of health institutions, workforce, financing mechanisms, and communities to anticipate, prepare for, respond to, and recover from climate-related shocks while maintaining core public health functions. Indonesia has incorporated climate considerations into national development plans and health sector strategies; however, operationalization at scale remains uneven.

CHALLENGES IN CLIMATE RESILIENT HEALTH SYSTEM

This brief highlights six major issues: (1) low public awareness and limited behavioral change, (2) inadequate subnational financing, (3) fragmented cross-sectoral coordination and regulatory gaps, (4) limited data and health information systems, (5) implementation gaps between national and subnational levels, and (6) heightened vulnerability in frontier, outermost, and disadvantaged (3T) areas. Addressing these challenges requires integrated governance, sustained investment, and people-centered approaches that align climate action with health system strengthening.

1. Low Public Awareness and Limited Behavioral Change

Public awareness of climate change as a health risk remains relatively low in Indonesia. Climate change is often perceived primarily as an environmental or economic issue, rather than a direct threat to individual and community health. This perception gap limits community engagement in preventive actions such as heat protection, sanitation improvement, vector control, disaster preparedness, and environmentally sustainable behaviors.

Behavioral change is further constrained by socio-cultural norms, limited access to reliable information, and competing daily economic priorities. Risk communication strategies are often technical, fragmented, or not tailored to local contexts and languages. Without strong community understanding and ownership, climate-resilient health interventions risk being underutilized or unsustainable.

Public awareness and behavioral change in climate-resilient health systems in Indonesia should begin with reframing climate change as a direct and personal health risk rather than an abstract environmental issue. Communication strategies need to clearly link climate impacts—such as heat stress, air pollution, floods, and vector-borne diseases—to everyday health outcomes that communities already experience. Health workers, particularly those at the primary care and community level, should be equipped as trusted messengers to deliver consistent, culturally sensitive messages using local languages and contexts. Integrating climate–health topics into routine health promotion activities, maternal and child health programs, and disease prevention campaigns can significantly increase public relevance and understanding.

Behavioral change efforts should move beyond information dissemination toward practical, action-oriented interventions. Communities need clear guidance on adaptive behaviors such as heat protection practices, water and sanitation management during floods, household-level vector control, and health-seeking behavior during climate-related emergencies. Demonstration projects, community-based early warning systems, and peer-to-peer learning can help translate awareness into sustained action. Behavioral interventions should be designed with an understanding of local socio-economic constraints, ensuring that recommended actions are affordable, feasible, and aligned with daily livelihoods.

To ensure long-term impact, public awareness and behavioral change initiatives must be institutionalized within the health system and supported by multisectoral collaboration. Climate and health literacy should be embedded in school curricula, health workforce training, and local government planning processes. Partnerships with civil society, religious organizations, media, and community leaders are essential to expand reach and credibility. By aligning public awareness efforts with health system strengthening and community empowerment, Indonesia can build a climate-resilient health system that is not only technically prepared but also socially adaptive and sustainable

2. Inadequate Subnational Financing

Decentralization has positioned provincial and district governments as key actors in health service delivery. However, many local governments face fiscal constraints that limit their ability to invest in climate-resilient health infrastructure, emergency preparedness, and adaptive service delivery models. Health budgets at the subnational level are often dominated by routine expenditures, leaving limited fiscal space for climate adaptation initiatives. Climate-related health spending is rarely tagged or tracked, making it difficult to assess adequacy and effectiveness. Furthermore, access to climate finance mechanisms remains limited at the local level due to capacity gaps in planning, proposal development, and financial management.

Addressing inadequate subnational financing for a climate-resilient health sector in Indonesia requires strengthening the integration of climate priorities into local planning and budgeting processes. Provincial and district governments should be supported to systematically incorporate climate risk and health vulnerability assessments into Regional Medium-Term Development Plans and annual health budgets. Introducing climate–health budget tagging at the subnational level would help identify funding gaps, improve accountability, and enable better alignment between national transfers and local needs. Clear technical guidelines and capacity-building support are essential to ensure local governments can translate climate policies into bankable health programs.

In parallel, Indonesia should expand local access to diversified and innovative financing sources. This includes facilitating subnational engagement with national climate funds, blended finance mechanisms, and international adaptation finance, while simplifying administrative and fiduciary requirements. Strengthening the role of central ministries in providing technical assistance for proposal development, financial management, and monitoring can significantly improve local absorption capacity. Performance-based grants and matching funds linked to climate-resilient health outcomes can also incentivize local governments to prioritize adaptation investments within constrained fiscal environments.

Finally, improving efficiency and sustainability of existing health expenditures is critical. Subnational governments should prioritize climate-smart investments that reduce long-term costs, such as resilient health facility infrastructure, renewable energy for health services, and preventive public health interventions. Strengthening coordination across sector particularly with disaster management, water and sanitation, and environmental agencies can enable cost-sharing and reduce duplication. By combining stronger planning, diversified financing, and efficient spending, Indonesia can progressively close the subnational financing gap for climate-resilient health systems.

3. Fragmented Cross-Sectoral Coordination and Regulatory Gaps

Climate resilience in health requires coordinated action across sectors such as environment, water and sanitation, housing, disaster management, energy, and transportation. In practice, coordination remains fragmented, with overlapping mandates, unclear roles, and limited accountability mechanisms. Regulatory frameworks related to climate change and health are still evolving and often lack enforceability at the operational level. Health

considerations are not consistently mainstreamed into climate policies, while climate risks are not systematically integrated into health regulations, standards, and accreditation systems. This fragmentation reduces policy coherence and limits the effectiveness of multisectoral action.

To address fragmented cross-sectoral coordination and regulatory gaps at the national level, Indonesia should strengthen formal governance mechanisms that position health as a core component of climate policy. This includes establishing or reinforcing an inter-ministerial coordination platform with a clear mandate to integrate health considerations into climate adaptation, disaster risk reduction, energy, water, and urban development policies. Harmonizing regulations by embedding climate resilience and health standards into national laws, sectoral regulations, and accreditation frameworks would improve policy coherence and enforceability. Clear roles, shared indicators, and accountability mechanisms are essential to move coordination beyond ad hoc collaboration toward sustained multisectoral action.

At the subnational level, coordination should be operationalized through integrated planning and implementation frameworks that align local health offices with environmental, disaster management, public works, and social sectors. Local governments need practical tools such as joint planning guidelines, shared data platforms, and standardized operating procedures for climate-related health risks. Regulatory flexibility should be provided to allow local adaptation while maintaining national standards. Strengthening leadership, incentives, and capacity at the local level will ensure that cross-sectoral coordination translates into effective action, bridging policy intent at the national level with implementation on the ground.

4. Limited Data and Health Information Systems

Robust data and information systems are essential for anticipating climate-related health risks, guiding resource allocation, and monitoring system performance. In Indonesia, data on climate-sensitive diseases, environmental exposures, and health system vulnerabilities are often incomplete, delayed, or siloed across institutions. Early warning systems linking climate data with health surveillance are still limited in coverage and functionality. Interoperability between health, meteorological, and disaster information systems remains weak. At the local level, human resource and technological constraints further limit data quality and utilization for decision-making.

To address limited data and health information systems in building a climate-resilient health system in Indonesia, a national climate–health data integration framework should be established as a priority. This framework should link health surveillance systems with climate, environmental, and disaster data through standardized indicators, interoperable platforms, and clear data governance arrangements. Integrating data from health facilities, meteorological services, and disaster management agencies would enable more accurate risk mapping, trend analysis, and anticipatory action. National leadership is essential to set data standards, ensure interoperability, and protect data quality and privacy while allowing flexible use at subnational levels.

At the subnational level, strengthening local capacity for data collection, analysis, and use is critical. Investments should focus on improving routine reporting of climate-sensitive diseases, environmental exposures, and service disruptions, particularly in high-risk and 3T areas. Simplified digital tools, standardized dashboards, and targeted training for health officers can improve data timeliness and usability. Linking local health information systems with early warning mechanisms will enable districts to translate climate signals into preparedness and response actions, rather than treating data as a purely administrative requirement.

Finally, data integration must be embedded into decision-making and accountability processes to ensure sustainability. Climate–health analytics should inform planning, budgeting, and performance monitoring at both national and local levels. Establishing feedback loop, where data is routinely reviewed, shared across sectors, and used to adjust interventions, will strengthen adaptive management. By shifting from fragmented reporting to integrated, action-oriented information systems, Indonesia can significantly enhance its capacity to anticipate climate risks, protect health services, and reduce climate-related health impacts.

5. Implementation Gaps Between National and Subnational Levels

National policies and strategies on climate change and health are not always translated effectively into local action. Differences in institutional capacity, leadership commitment, and contextual priorities contribute to uneven implementation across regions. Guidelines and action plans may be perceived as top-down, with limited flexibility for local adaptation. Monitoring and evaluation mechanisms are often insufficient to identify bottlenecks and provide feedback for continuous improvement. As a result, promising national initiatives may fail to achieve intended impact at the community level.

To address implementation gaps between national and subnational levels in strengthening climate-resilient health systems in Indonesia, national policies and guidelines must be designed to be more adaptive and operationally relevant for local contexts. This includes translating high-level strategies into practical implementation packages with clear roles, minimum service standards, and flexible options that allow provinces and districts to tailor actions based on local climate risks and capacities. Strengthening continuous technical assistance through mentoring, peer learning, and regional support can help subnational governments operationalize national priorities more effectively and reduce disparities in implementation quality.

In parallel, stronger accountability and incentive mechanisms are needed to align national objectives with local action. Performance-based financing, conditional grants, and recognition schemes linked to climate-resilient health outcomes can motivate subnational governments to prioritize implementation. Improved monitoring, evaluation, and feedback systems should be established to track progress, identify bottlenecks, and enable timely policy adjustments. By reinforcing adaptive guidance, sustained capacity support, and outcome-oriented incentives, Indonesia can bridge the national–subnational divide and ensure that climate-resilient health policies translate into tangible improvements at the local level.

6. Vulnerability of Frontier, Outermost, and Disadvantaged (3T) Areas

Communities living in frontier, outermost, and disadvantaged (3T) areas face compounded vulnerabilities to climate change. Geographic isolation, limited infrastructure, health workforce shortages, and weak supply chains constrain access to essential health services, particularly during climate-related emergencies. Climate hazards such as sea level rise, extreme weather, and ecosystem degradation pose existential threats to small islands and remote regions. Health facilities in these areas are often not designed to withstand climate shocks, and emergency response capacity is limited. Without targeted strategies, climate change risks exacerbating existing health inequities.

Addressing the vulnerability of frontier, outermost, and disadvantaged (3T) areas in building a climate-resilient health system in Indonesia requires differentiated and equity-focused strategies. National health policies should explicitly recognize 3T areas as high-priority zones for climate adaptation due to their geographic isolation, exposure to climate hazards, and limited health system capacity. Climate–health vulnerability assessments should be systematically conducted to inform targeted planning, ensuring that interventions reflect local risks such as sea level rise, extreme weather, drought, and ecosystem degradation rather than applying uniform national solutions.

Strengthening resilient health infrastructure and service delivery is critical in 3T areas. Health facilities should be designed or retrofitted to withstand climate shocks, including floods, storms, and heat stress, while ensuring continuity of essential services during emergencies. Investments in renewable energy, water security, and climate-resilient supply chains can significantly reduce service disruptions. Flexible service delivery models—such as mobile clinics, telemedicine, and community-based health services—are particularly important to overcome geographic barriers and maintain access during climate-related events.

Human resource strategies must also be adapted to the realities of 3T regions. Targeted incentives, career pathways, and supportive supervision are needed to attract and retain health workers in remote and climate-vulnerable areas. Training should emphasize climate-related health risks, emergency response, and community engagement. Empowering local health workers and community volunteers as first responders can strengthen early detection, preparedness, and response capacity, especially when external support is delayed.

Finally, governance and financing mechanisms should be tailored to sustain long-term resilience in 3T areas. Dedicated funding windows, simplified administrative procedures, and stronger national support are essential to overcome local capacity constraints. Cross-sector collaboration with disaster management, transportation, energy, and communication sectors is crucial to address structural vulnerabilities beyond the health sector alone. By combining targeted investments, adaptive service models, and sustained national commitment, Indonesia can reduce climate-related health inequities and ensure that populations in 3T areas are not left behind.

Consolidated Roadmap and Plan of Action Matrix

Strategic Priority	Timeframe	Key Actions	Lead Actors	Expected Outputs
Health-focused climate risk communication	Short-term (1–2 yrs)	Develop national climate–health communication framework; train primary health workers as communicators; integrate messages into routine health promotion	Ministry of Health, Provincial/District Health Offices, NGOs	Increased public awareness; standardized climate–health messaging
	Medium-term (3–5 yrs)	Integrate climate–health literacy into school curricula and health workforce training; community-based early warning dissemination	MoH, Ministry of Education, Local Governments	Improved health literacy; community preparedness
	Long-term (5–10 yrs)	Institutionalize climate–health risk communication in national health promotion systems	MoH, National Communication	Sustained behavioral change and risk-informed communities
Subnational financing for climate-resilient health	Short-term (1–2 yrs)	Introduce climate–health budget tagging; technical assistance for local planning	MoH, Bappenas	Clear tracking of climate–health expenditures
	Medium-term (3–5 yrs)	Performance-based grants; access to national and international climate finance	MoH, Local Governments, Donors	Increased and diversified subnational funding
	Long-term (5–10 yrs)	Institutionalize earmarked transfers for climate-resilient health	Parliament	Sustainable domestic financing mechanisms
Multisectoral governance and regulatory coherence	Short-term (1–2 yrs)	Establish inter-ministerial coordination platform; regulatory gap analysis	MoH, Bappenas, Sectoral Ministries	Clear mandates and coordination mechanisms
	Medium-term (3–5 yrs)	Harmonize sectoral regulations; joint planning and	National & Local Governments	Improved policy coherence and collaboration

Strategic Priority	Timeframe	Key Actions	Lead Actors	Expected Outputs
		accountability at local level		
	Long-term (5–10 yrs)	Institutionalize multisectoral governance with monitoring frameworks	National Government	Sustained whole-of-government approach
Integrated climate–health data systems	Short-term (1–2 yrs)	Strengthen climate-sensitive disease surveillance; pilot data integration	MoH, Meteorological Agency, Local Govts	Improved data availability and quality
	Medium-term (3–5 yrs)	Scale interoperable climate–health information systems; build local analytic capacity	MoH, Data Agencies	Functional early warning and decision-support systems
	Long-term (5–10 yrs)	Institutionalize anticipatory action and adaptive data use	National & Local Governments	Data-driven climate-resilient health planning
Bridging national–local implementation gaps	Short-term (1–2 yrs)	Develop adaptive national guidelines; strengthen technical assistance	MoH, Provincial Govts	Improved local implementation capacity
	Medium-term (3–5 yrs)	Introduce performance-based incentives; strengthen M&E systems	MoH	Better alignment between policy and practice
	Long-term (5–10 yrs)	Embed adaptive management and learning mechanisms	National & Local Governments	Consistent and scalable implementation
Prioritizing 3T areas	Short-term (1–2 yrs)	Conduct climate–health vulnerability assessments; pilot tailored services	MoH, Local Govts	Evidence-based targeting of 3T areas
	Medium-term (3–5 yrs)	Invest in resilient infrastructure, workforce incentives, mobile services	MoH, Local Govts	Improved access and service continuity
	Long-term (5–10 yrs)	Institutionalize differentiated policies and financing for 3T regions	National Government	Reduced health inequities and improved resilience

CONCLUSION

Climate change presents a systemic risk to Indonesia's health system, but also an opportunity to strengthen it in more equitable, adaptive, and sustainable ways. Addressing persistent challenges ranging from public awareness and financing to governance, data, and regional inequities requires sustained political commitment and coordinated action across all levels of government and society. A climate-resilient health system is essential to protect current and future generations and to ensure that no one is left behind in the face of a changing climate.

Building a climate-resilient health system in Indonesia ultimately depends on the strength of multisectoral action and the quality of governance that binds institutions together. Climate-related health risks are shaped by decisions in sectors such as environment, disaster management, water and sanitation, energy, housing, and transportation. Without deliberate coordination across these sectors, health policies alone cannot adequately prevent, prepare for, or respond to climate impacts. A whole-of-government approach is therefore essential to address the complex and interconnected nature of climate and health challenges in Indonesia.

Effective multisectoral action requires clear mandates, shared objectives, and institutionalized coordination mechanisms at both national and subnational levels. Integrating health considerations into climate, development, and disaster policies—and vice versa—will improve policy coherence and reduce fragmentation. Joint planning, interoperable data systems, and aligned performance indicators can enable sectors to work toward common outcomes rather than operating in silos. This alignment is particularly important in Indonesia's decentralized system, where coordination gaps often emerge between ministries and across levels of government.

Good governance is equally critical to ensure that multisectoral collaboration translates into tangible results. Transparent decision-making, accountability mechanisms, and inclusive stakeholder participation strengthen trust and policy effectiveness. Adaptive governance—supported by timely data, learning mechanisms, and feedback loops—allows institutions to respond to evolving climate risks and local realities. Strong governance also enhances the efficient use of public resources, ensuring that investments in climate resilience deliver long-term health and development benefits. Strengthening climate-resilient health systems in Indonesia demands a sustained commitment to multisectoral action underpinned by good governance. By fostering coordination, accountability, and adaptive leadership across sectors and levels of government, Indonesia can build a health system that is resilient, equitable, and capable of protecting population health in a changing climate.

Strengthening Indonesia's health system in the face of climate change requires recognizing that resilience cannot be achieved through policies, infrastructure, and financing alone. At its core, a climate-resilient health system depends on the active participation of communities as both beneficiaries and agents of change. Community engagement is essential to ensure that national strategies translate into meaningful action at the local level, particularly in a decentralized and diverse country such as Indonesia. Without strong community involvement, even well-designed policies risk limited uptake, sustainability, and impact.

Communities play a critical role in shaping health-related behaviors that determine vulnerability to climate risks. Daily decisions related to water use, sanitation, heat protection, vector control, and health-seeking behavior are influenced by local knowledge, social norms, and trust in institutions. Engaging communities through culturally appropriate communication and participatory approaches strengthens risk perception and encourages adaptive behaviors. This not only enhances preparedness for climate-related health threats but also reinforces preventive health practices that reduce long-term system burdens.

Effective community engagement also improves the relevance and equity of health system interventions. Local participation enables policymakers and service providers to better understand context-specific risks, needs, and barriers—particularly in underserved and climate-vulnerable areas. Involving communities in planning, monitoring, and feedback mechanisms helps tailor interventions to local realities, increases accountability, and ensures that marginalized populations, including those in frontier, outermost, and disadvantaged regions, are not excluded from climate resilience efforts.

Furthermore, community engagement strengthens system responsiveness during climate-related shocks and emergencies. Community networks, volunteers, and local leaders often serve as the first line of response, facilitating early warning dissemination, rapid information sharing, and continuity of essential services. When communities are empowered and connected to the health system, they enhance collective resilience and reduce reliance on reactive, top-down responses. This adaptive capacity is particularly critical as climate risks become more frequent and unpredictable. Community engagement is not a complementary component but a foundational pillar of a climate-resilient health system in Indonesia. Embedding community participation across policy design, implementation, and evaluation will strengthen trust, improve outcomes, and sustain resilience over time. By placing communities at the center of health system strengthening, Indonesia can better protect population health, safeguard development gains, and ensure that climate resilience is built from the ground up.

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