

Key Action Areas for Addressing Extreme Heat in the Asia-Pacific: Lessons from Regional Platforms

Co-Editors: Asma Saleem, Takeshi Komino, and Mihir R. Bhatt



Photo: AIDMI.



southasiadisasters.net

South Asia's premier publication on disasters, climate and humanitarian action since 2005



OVERVIEW

Combating Extreme Heat in Asia-Pacific: APMCDRR 2024 as a Catalyst for Resilience and Disaster Risk Reduction

By *Asma Saleem*, Deputy Regional Representative for Asia and the Pacific, ICVA

Extreme heat is rapidly emerging as one of the most severe climate-related threats in the Asia-Pacific region, with increasing frequency, intensity, and duration of heatwaves causing widespread health, economic, and environmental challenges. Rising global temperatures, driven by climate change, have exacerbated the urban heat island effect, disrupted agricultural productivity, and disproportionately impacted vulnerable populations, including the elderly, pregnant women, children, and outdoor workers.

The Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) 2024, with its theme “Accelerating Resilience and Innovation in Disaster Risk Reduction”, provides a critical platform for addressing extreme heat through collaborative policy action and regional cooperation. APMCDRR serves as a key mechanism for promoting locally led disaster risk reduction (DRR) strategies, fostering multi-stakeholder collaboration, and ensuring joint resource mobilization to enhance climate adaptation and strengthen resilience among at-risk communities.

Recent studies confirm that extreme heat events in Asia-Pacific have intensified due to climate change, with record-breaking temperatures exceeding 50°C in some regions. Countries like India, Bangladesh, the Philippines, and Pakistan have reported a significant increase in

heat-related mortality rates in recent years. According to the IPCC Sixth Assessment Report (2021), heatwaves are expected to increase in frequency and severity, disproportionately affecting low-income and coastal communities that lack access to cooling infrastructure.

APMCDRR 2024 presents a unique opportunity for Asia-Pacific countries to strengthen DRR strategies by implementing scalable and community-driven solutions to combat extreme heat. Through inclusive multi-stakeholder dialogues, capacity-building initiatives, and policy coordination, the conference promotes locally led adaptation efforts and stronger partnerships between governments, humanitarian organizations, NGOs, civil society, think tanks, and academia. The focus must be on integrating traditional knowledge with scientific innovation and ensuring that adaptation measures are tailored to the needs of vulnerable populations.

With financial resources for climate adaptation becoming increasingly limited, collaborative financing models and pooled resources are essential for scaling up DRR efforts across the Asia-Pacific region. Cross-sector partnerships between governments, humanitarian agencies, local NGOs, and private sector stakeholders can unlock new funding opportunities and maximize the impact of existing financial resources. APMCDRR 2024 can serve as a catalyst to:

- Strengthen regional cooperation through shared learning, knowledge exchange, and the development of regional heat resilience frameworks.
- Foster multi-stakeholder investment in climate adaptation solutions that align with local needs and community priorities.
- Advocate for increased donor commitments to support locally led DRR initiatives and long-term resilience programs.

As extreme heat becomes the “new normal,” urgent and coordinated action is necessary to protect vulnerable populations across the Asia-Pacific region. APMCDRR 2024 underscores the importance of empowering local actors, leveraging regional partnerships, and mobilizing joint resources to build long-term resilience against climate change. By integrating locally driven solutions with evidence-based policy frameworks, the Asia-Pacific region can strengthen its disaster preparedness and mitigate the devastating effects of extreme heat.

Through collaborative regional efforts and commitments made at APMCDRR, the Asia-Pacific region has a unique opportunity to turn climate challenges into action-oriented solutions, ensuring safer and more climate-resilient communities for future generations.

INTRODUCTION

ADRRN Insight into Extreme Heat: An Emerging Priority for Disaster Risk Reduction in Asia

By Takeshi Komino, ADRRN Chairperson, Japan

In 2024, Asian Disaster Reduction and Response Network (ADRRN) led the drafting of '2024 CSO Commitment to Action: Addressing Hotspots of Vulnerabilities to Advance SFDRR Implementation' for the occasion of Asia Pacific Ministerial Conference for DRR (APMCDRR) 2024. The commitment to action evolved around the theme of 'Community Resilience at the Center', 'Capacity Sharing for Tangible Change', 'Policy Coherence for Local Action', 'Partnerships and Collaboration for Solving the Unsolved', and 'Monitor Progress and Addressing Gaps'. Prior to the drafting, ADRRN commissioned a survey which revealed key gaps the region faces in the pursuit to enhance resilience against ever-rising disaster risks, often exacerbated by underlying risk factors that lead to hotspots of vulnerabilities.

Extreme heat has become one of the most severe climate-related threats facing Asia this century. As global temperatures continue to rise, the frequency, intensity, and duration of heatwaves across the region have increased significantly, posing substantial risks to human health, economic stability, and social welfare. In recent decades, we have witnessed an unprecedented rise in extreme heat events, often reaching record-breaking temperatures of 40 to 50°C. This trend is expected to worsen, disproportionately affecting the most vulnerable populations, including those who cannot afford air conditioning or adjust their work schedules to avoid extreme heat risks.

The heat island phenomenon further exacerbates the situation, as more people migrate to cities in search of better opportunities, pushed away from rural lifestyles made unbearable by intensified climate

change impacts. Additionally, pre-monsoon heatwaves have become more frequent and severe across the region.

It is essential to recognize that the effects of extreme heat are particularly harsh on vulnerable populations. The elderly, pregnant women, children, outdoor workers, individuals with disabilities, and those living in informal settlements, such as slums, face the highest risks, often without effective mitigation solutions in place. In densely populated urban areas, where many residents live in buildings with poor ventilation and inadequate cooling systems, the situation is made even worse. Low-income communities often lack access to proper air circulation or cooling facilities, making them disproportionately vulnerable to heat-related illnesses.

The economic impact of extreme heat events is also substantial and growing. Heat stress reduces crop yields and threatens food security across the region, on top of irregular rainfall which became the 'new normal' nowadays. Outdoor workers face reduced working hours and increased health risks, and traditional lifestyle such as nomadic lifestyle is increasingly on strain. There are additional health risks imposed to pregnant mothers, and children are forced to cut down on their schooling due to harsh conditions. Almost everyone is experiencing such loss and damage in their daily lives.

ADRRN recognizes that such disaster risks in our region are increasing, but we are also mindful that the impact of such risks can reduce with appropriate mitigation measures. Many of such mitigation action happen at individual level, but also at communal level. ADRRN prioritizes community-led

adaptations to ever-increasing disaster risks, as the adaptation strategies that incorporate local knowledge and cultural practices are more effective, better tailored to the community needs, making them more practical and sustainable. It also allows optimal integration of local and traditional knowledge with modern science around disaster risks and how we can mitigate the impact. There are lots we can co-learn in the region, as many countries in our region are experiencing similar hazard profiles.

Extreme heat events are becoming more frequent and severe, and we all need to live with this new reality in our lives. We also know that extreme heat often triggers secondary disasters such as droughts, wildfires, and water scarcity, and strategic investments are required to cope with such expected loss and damage. We also know that many heat-related deaths and illnesses are preventable with proper early warning systems and preparedness measures. Networks like ADRRN can play a crucial role in gathering like-minded practitioners to share knowledge and capacities for concrete actions.

The rising threat of extreme heat in our region requires immediate and coordinated action. ADRRN, with its extensive network and regional expertise, is aiming to uplift efforts in addressing this emerging disaster risk. ADRRN is launching community led climate adaptation fund for its members starting in 2025, and will continue to invest in local action and to generate lessons that can be amplified across the region. We hope that this special issue on the 'APMCDRR 2024: Key Areas for Follow-Up Around Climate Actions in the Asia Pacific in 2025' can trigger our knowledge sharing and co-creation of solutions towards collective and scaled impact for the people we all serve. ■

Protection of Coastal Communities from Extreme Heat in Bangladesh

By *Muhammad Taher, Duyog Nivaran, Bangladesh*

Introduction

Several factors, alongside climate change, are responsible for rising levels of heat and heat-related stress among disadvantaged communities living in coastal areas. In Bangladesh, the spread of urbanization, industrial growth, and deforestation in the coastal belt are believed to be key contributors to this phenomenon. Over the past decade, the country has experienced significant infrastructural development in coastal districts, including factories, power plants, cyclone centers, roads, and numerous new buildings. The combined effects of these actions are causing heat stress in these areas, leading to serious economic and public health concerns, particularly for vulnerable groups. However, we believe that the situation can be significantly improved by raising awareness and adopting green, nature-based solutions (NBS) following an Early Warning System (EWS) approach, as explained below.

During the recently concluded Asia Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR 2024) in Manila, the importance of EWS was emphasized in a number of deliberations to “accelerate disaster risk reduction.” In this brief note, we propose using the EWS framework to address concerns related to heatwaves. While it is based on the experiences of Bangladesh, it should also reflect issues and situations across the Asia-Pacific region due to their many similarities.

An Under-reported Disaster

Unlike other hazards in coastal areas, the increasing level of oppressive heat receives relatively less attention compared to cyclones and floods. When asked to share their assessments of the most striking examples of climate change, local residents often mention the rise in temperature during the summer months and its effects on their lives. Beyond its impact on health and hygiene, heat stress degrades the overall quality of life, including economic productivity. Yet, there seems to be limited understanding and concern about this phenomenon among people and authorities. Consequently, the desired level of focus on mitigation and adaptation remains inadequate. This slow onset and persistent menace of heat causes immense suffering to people, many of whom find it difficult to avert heat-related stresses.

In the coastal region, limited access to potable water and inadequate tree coverage make life extremely challenging, especially when compared to other parts of the country. Residents struggle with intense heat and high humidity, particularly during the Bengali months of Boishakh (April-May) to Kartik (September-October). This oppressive weather often disrupts work, especially for those who rely on fishing and agriculture. Additionally, some individuals report that heat stress negatively impacts their livelihoods, affecting their field crops and livestock. Many people in coastal areas rely on rearing livestock (like buffalo and

cattle), in addition to fishing and producing field crops. The lack of water and oppressive heat throughout much of the year reduces the productivity of these essential livelihood assets.

EWS Approach to Address Heat

By adapting the Early Warning Systems approach, we can address the problem by focusing on improving knowledge and information about heat stress, forecasting heat spikes based on data analysis, disseminating actionable warnings in a timely manner, and assisting all stakeholders (including concerned authorities) in preparing to respond to these warnings. Like an effective EWS system, we need to coordinate heat response actions in an organized manner. Below are the three key steps (following the four key elements of EWS) we suggest for this purpose:

1. **Enhancing Knowledge and Awareness:** We know that adaptation measures to combat climate change impacts can play a vital role in mitigating various aspects of climate risks. However, people's understanding of increasing heat stress and its connection to human actions is often unclear. Therefore, we need expert advice on the causes of rising heat, its impact on health and productivity, and how we can protect ourselves (both humans and animals) from exposure to extreme heat. We also need to identify effective solutions that individuals and institutions can adopt.

2. **Data Monitoring and Forecasting:** Based on monitoring results of heat data, we need to analyze and make forecasts about heat spikes and their possible consequences. We require well-developed heat forecasting and information dissemination mechanisms to inform and educate people about the different aspects of heat hazards. Developing and producing Information, Education, and Communication (IEC) materials will help disseminate knowledge on how various locally available and appropriate technologies can be introduced to cope with the situation. For this purpose,

organizing awareness-raising meetings with community groups may be necessary.

3. **Coordinated Response Planning:** Lastly, we need to unify our efforts regarding how we respond personally and institutionally to mitigate and reduce heat risks. In other words, government agencies and NGOs should prepare their “preparedness” plans to respond to the warnings received—both during and before hazards strike. The goal should be to provide people with relief from oppressive heat while also helping to establish a balanced ecological order in coastal areas. We conclude this

note with the following recommendations:

- Adopt mandatory nature-based solutions (NBS) for all infrastructure-building programs.
- Launch a massive reforestation program to increase tree coverage and establish coastal green belts.
- Create low-cost heat shelters (cooling centers) for people and animals in remote areas.
- Ensure the provision of drinking water in marketplaces and remote areas. ■

Key Local Resources on Cooling Extreme Heat

Southasiadisasters.net Publications

Since 2018 AIDMI is capturing local and regional emerging knowledge and experience around extreme heat cooling through its publication that reaches over 20 thousand. Following seven issues are most relevant.

1. **Evaluating Extreme Heat Projects and Programs: Key Lessons** (Issue No. 214, October 2024) [link](#)
2. **Accelerating Extreme Heat Responses: Perspectives from India** (Issue No. 213, August 2024) [link](#)
3. **Extreme Heat Adaptation and Mitigation Programming: Lessons from Affected Populations** (Issue No. 212, July 2024) [link](#)
4. **Heatwave Deaths Are Avoidable** (Issue No. 210, May 2024) [link](#)
5. **Urgency of Heatwave Risk Management** (Issue No. 209, March 2024) [link](#)
6. **Building Adaptation and Resilience to Heatwaves** (Issue No. 204, January 2023) [link](#)
7. **Rising Risk of Heatwaves in Asia** (Issue No. 174, October 2018) [link](#)

Knowledge Products

Though knowledge about and around extreme heat is substantial, most of it is scientific and programme driven. What do local affected people and institutions think and reflect? For this purpose, AIDMI co-creates knowledge.

1. **Localization and Adaptation by Communities: Focus on Extreme Heat** [link](#)
2. **Building Resilience for Cotton Farmers in India: Evidence from Gujarat and Maharashtra** (IIED Report, September 2024) [link](#)
3. **Guidelines for Schools to Combat Heatwaves** (Available in multiple languages, April 2024) [link](#)
4. **Local Heatwave Action Planning** (December 2023) [link](#)
5. **Advisory for Protection Against Expected Heatwaves** (Available in seven languages, March 2023) [link](#)
6. **Adapting Humanitarian Action to Climate Change** (ALNAP Lessons Paper, 2021) [link](#)
7. **Urban Resilience in South Asia** (Experience Learning Series No. 77, March 2021) [link](#)

These experience based essential local resources aim to provide inclusive, scalable, and equitable solutions to one of the most pressing climate challenges, extreme heat. For further engagement, contact Manish Patel at knowingrisk@aidmi.org.

Nothing About Us Without Us: Centering Children and Young People in Climate Action and Heat Governance

By Susmita Choudhury, James Balzer, Hikmah Ubaidillah, Husnul Maad, Keeva Duffey, Russell Dowling, Khadiga Alsharif, and Amelia Andrews, Asia Region, ChildFund International

2024 marked the hottest year ever recorded, exceeding the critical 1.5°C threshold set by the Paris Agreement. A review by the International Federation of Red Cross and Red Crescent Societies (IFRC), 2020, reveals that extreme weather and climate-related disasters have claimed over 410,000 lives in the past decade.

In Asia and the Pacific, heatwaves are especially lethal in regions with high humidity levels. Extreme heat poses severe risks to human health, especially for vulnerable populations such as children, young people, and women. Around 1 billion children reside in one of the 33 countries categorized as "extremely high-risk" due to climate impacts. Data specific to Indonesia highlights significant

risks for children and youth and ranks 46th out of 163 countries, classifying it as a high-risk nation for children. With cascading effects often overlooked, the impact of rising temperatures extends far beyond immediate health concerns, affecting everything from mental health to education and child protection. Addressing extreme heat with an inclusive, long-term approach is crucial, particularly when involving the younger generation in climate governance.

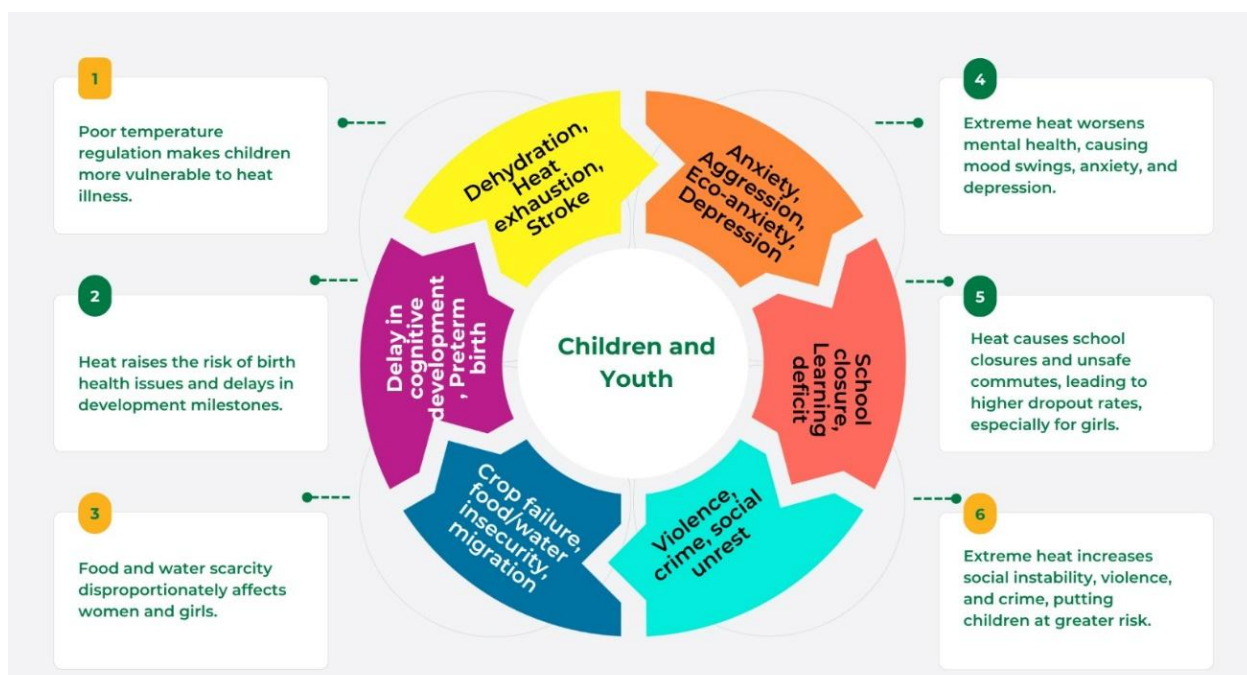
The Hidden Impacts of Extreme Heat on Children and Youth

Extreme heat effects are not limited to direct health outcomes of children and young people such as dehydration, heat exhaustion, and heatstroke but also compounded by

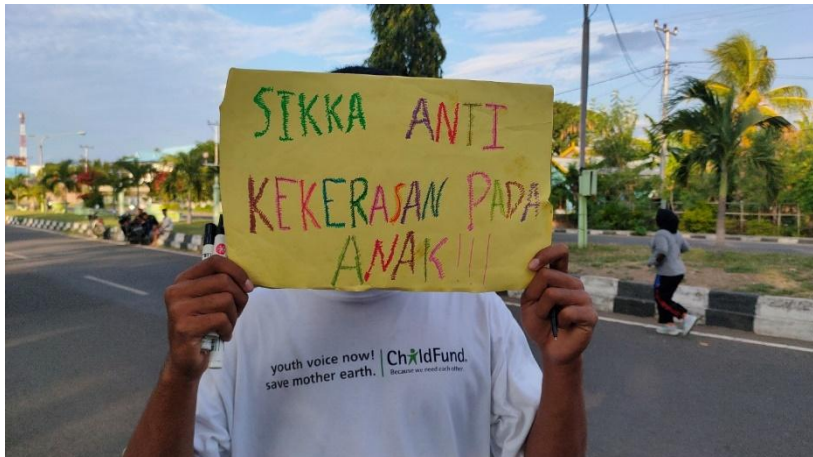
long term consequences often overlooked. Research highlights significant risks to child development, including health, safety, education, and livelihoods around the ecosystem of a child. Addressing these challenges requires a multi-sectoral approach to protect children's rights and promote their well-being. By understanding and addressing the intersecting issues of physical safety, mental health, gender, socioeconomic inequities, and family dynamics, it is possible to mitigate the effects of extreme heat on children and youth.

Integrating Youth into heat governance and climate action

Involving young people in climate governance is essential for achieving "thermal justice"[1] - ensuring the



Infographic: The Health and Societal Impacts of Heat Exposure on Children and Youth.



Poster with the words "Sikka Against Violence in Children" made by young people from the Youth Voice Now Project during the long march on Youth Pledge Day, October 28, 2022.

benefits of heat adaptation policies are equitably shared across generations – meaning all generations in the present and the future. Deliberative youth engagement is crucial to shaping policies ensuring structural changes, through processes of “downstream deliberation.”[2] Young people must not only be seen as stakeholders but also as key drivers of change in addressing the impacts of extreme heat.

The solutions to extreme heat need to be deliberated and implemented from a bottom-up perspective, as a way to complement top-down governance. This requires active efforts from civil society, who can act as convenors and mediators for participatory policy design involving youth.[3]

For example, Indonesia faces a multitude of barriers to govern extreme heat more effectively. The country faces many social and environmental challenges, compounded by lackluster infrastructure, such as poor-quality housing and ineffective sanitation systems. Among these more immediate challenges, which have more political attention, addressing extreme heat in a focused, long-term

and coherent manner can be difficult. This undermines the capacity for intergenerational fairness to be integrated into extreme heat planning, which is based on a participatory governance approach. The current youth engagement regarding environmental issues is susceptible to efforts from different levels of government that hardly lead to tangible policy improvements.[4] Likewise, the impartiality of youth deliberation is questionable, as governments typically skew their focus groups to youth whose political perspectives align with the incumbent administrations.[5]

An initiative in Indonesia, implemented by local partner Youth Voice Now (YVN) Sikka, offers an inspiring model for integrating youth in climate action. YVN empowers young people to lead action research, advocate for policy change, and collaborate with local governments to drive meaningful solutions. This participatory approach ensures that youth are actively engaged in both identifying issues and influencing decision-making through evidence-based advocacy. YVN forms council of young people to directly contribute to policy decisions and collaborate with government on projects like tree planting and climate advocacy. Their efforts have led to YVN being invited as a Youth Advisory Body to strengthen youth involvement in governance.

The involvement of youth in formal government planning processes, such as the Musrenbang forums, highlights the potential for solutions driven by young people to be included in policy development. This ensures that youth concerns are considered in the efforts to combat extreme heat. The Sikka Government has acknowledged YVN for its effective work in engaging youth in the decision-making process.. They



Youth Mentor from Youth Voice Now Project was involved in tree planting action in Aimitat Village in a series of Earth Day activities, April 22, 2023.

received the Kalpataru Environmental Award for planting 1,000 trees and promoting climate action.

Based on the work of ChildFund International Indonesia and Youth Voice Now (Sikka) meaningful child and youth engagement in heat governance in Asia Pacific should consider:

Integrate Mental Health into Climate Strategies: Policymakers and communities must embed mental health considerations into climate adaptation strategies and policies. This involves mitigating heat-related risks through enhanced support systems for affected children and youth, mental health services, fostering resilience through education and community-based initiatives, and investing in vital infrastructure such as cooling centers and green spaces.

Strengthen Child Protection Measures: Protecting children from the severe effects of heat and climate-related disasters through targeted child protection measures that understand and integrate heat and climate-related child protection risks and stressors while creating child-friendly spaces and providing access to trauma-informed care for children.

Youth-Driven Solutions: Encouraging and amplifying youth led community-based solutions focusing on urban greening and heat-resilient infrastructure. Youth can use media platforms to raise awareness about heat-related risks and prevention strategies, creating a knowledgeable and proactive community.

Collaboration with Governance Bodies: Youth participation in local government planning forums



In 2024, Youth Voice Now received the Sikka District Kalpataru award, to recognize their efforts in youth-led environmental conservation initiatives.

ensures their voices influence policies addressing heat risks, making governance more inclusive and responsive to youth concerns.

Advocacy: Youth participation in policy decisions urging governments to reduce the impacts of extreme heat on vulnerable communities. Advocacy for increasing public financing for heat adaptation measures, strengthening communities' ability to cope with extreme heat and its impacts.

Moving Forward

As we look toward 2025 and beyond, integrating the perspectives of youth into heat governance and climate action in the Asia Pacific region will be essential. Children and young people are among those most affected by the long-term impacts of climate change, yet they also have the potential to drive meaningful and sustainable solutions. By amplifying their voices, we can ensure that climate policies are equitable, inclusive, and truly transformative. ■

References:

1. Ufaira, R, Amir, S, Indraprahasta, G & Nastiti, A (2023). "Living in a Hot City: Thermal Justice Through Green Open Space Provision".

Frontiers in Human Dynamics. 5, doi: 10.3389/fhumd.2023.1237515.

2. Boswell, J. (2016). Deliberating downstream: Countering democratic distortions in the policy process. *Perspectives on Politics*, 14(3), 724-737.
3. Strachwitz, R.G. (2022). Civil Society as an Agent of Change. In: Glückler, J., Meyer, HD., Suarsana, L. (eds) *Knowledge and Civil Society. Knowledge and Space*, vol 17. Springer, Cham. https://doi.org/10.1007/978-3-030-71147-4_3
4. Siagian, C., Sari, W. L., Rahmi, M. A., Kartaadipoetra, F. W., Lisan, I. H., Tiekens, S., Robby, M. B., Matahelemual, G. J., Ufaira, R., Nisa, S. A., & Swarnata, A. (2024). Moving towards just climate governance: Understanding climate change from the standpoint of marginalized children and young people in Indonesia. PUSKAPA-ANU. <https://puskapa.org/en/blog/publication/6375/>
5. PUSKAPA (2023). "Understanding Youth Engagement in Climate and Environmental Issues in Indonesia." Accessed 26 July 2024. <https://puskapa.org/en/blog/publication/6151/>

Cooling Communities: Mercy Corps' Top Priorities for Extreme Heat Action

By *Pratap Maharjan*, Program Manager, and *Kriti Bhujju*, Influencing and Communication Specialist-
Zurich Climate Resilience Alliance, Mercy Corps, Nepal

Extreme heat is emerging as a critical threat across the Asia Pacific, endangering lives, livelihoods, and infrastructure. Nowhere is this more evident than in Nepal's Terai region, a southern plains area where climate change has intensified the frequency and severity of heatwaves. Temperatures here regularly soar above 40°C, compounded by high humidity, creating lethal conditions. Between 2002 and 2010, Nepal's Ministry of Home Affairs recorded 25 heatwaves in the Terai, and recent years have seen a worrying trend: major urban centers in Madhesh and Sudurpaschim provinces report rising numbers of extreme heat days. In May 2024, Dhangadi in Sudurpaschim hit a record 44.1°C. The impacts are unambiguous—disrupted education, strained healthcare systems, and livelihoods destroyed as outdoor work becomes risky. While data gaps obscure the full scale of the crisis, vulnerable groups—women, children, the elderly, and economically marginalized communities—bear the heaviest burden, facing heightened health risks, economic instability, and social inequities.

Government and Global Responses

Recognizing the urgency of the situation, the Nepalese government has begun developing heat preparedness guidelines to address the cascading threats posed by heatwaves. However, effectively tackling these heatwaves requires a systemic integration of health,



Photo credit: Mercy Corps.

economic, and environmental strategies.

Globally, forums such as the Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) have highlighted this issue, emphasizing the importance of equity, data-driven actions, and innovative financing. Discussions at APMCDRR underscored the multifaceted impacts of heatwaves, including increases in gender-based violence and productivity losses. This highlights the need for early warning systems (EWS) that consider various factors like humidity in addition to temperature.

Examples such as Japan's heatstroke alerts illustrate the value of localized, community-specific solutions. Additionally, initiatives like the Asian Development Bank's parametric heat insurance represent progress in integrating heat

resilience into social protection frameworks.

Mercy Corps' Holistic Approach

Mercy Corps Nepal is at the forefront of this battle, blending immediate relief with long-term resilience. In 2024, their *Managing Risk Through Economic Development* (MRED) program established cooling centers, broadcast heat safety messages via radio, and distributed rehydration supplies to laborers. A pioneering heat perception study captured community insights on risks and coping mechanisms, informing a multilingual public service announcement produced with Nepal's National Disaster Risk Reduction and Management Authority (NDRRMA). For 2025, Mercy Corps is scaling efforts across three pillars:

1. **Evidence-Based Policy Advocacy:** Through the Zurich Climate Resilience Alliance Program, household-level

assessments in 21 communities will quantify resilience to heatwave and identify impacts on livelihoods. Findings will guide localized heat action plans, ensuring government policies reflect grassroots realities and resources are allocated accordingly.

2. **Nature-Based Solutions (NbS):** Pilot projects—such as green roofs, urban greening, and tree plantations—will be tested in public buildings like health posts to combat urban heat islands, improve air quality, and showcase NbS scalability.

3. **Community awareness and coping actions:** Mercy Corps will disseminate heat forecasts and protective strategies via localized PSAs, community awareness programs, promote traditional practices like pond restoration and agroforestry, and co-fund local government initiatives such as cooling centers and rehydration programs.

The Road Ahead

The APMCDRR underscored that equitable, collaborative governance is key to resilience. Success hinges on

bridging indigenous knowledge with scientific innovation. Short-term adaptations, like adjusting work hours, must be balanced with long-term investments in infrastructure and gender-sensitive planning to avoid exacerbating women's caregiving burdens. Crucially, data collection must evolve beyond academic exercise to inform actionable policies. Mercy Corps' vision aligns with this ethos: By 2025, we aim to take systematic steps to not only shield vulnerable communities from heat but also empower them as leaders in climate adaptation. ■

CLIMATE CRISIS

The Effect of Extreme Heat and Drought in Afghanistan

By *Abdul Wali Muslih*, Manager, Technical and Coordination Unit, DACAAR Kabul, Afghanistan

Extrême heat in Afghanistan has significant effects on health, agriculture, and infrastructure. Agriculture suffers due to increased evaporation and reduced crop yields, impacting food security.

Extreme heat and drought can drive migration and displacement, as people seek more habitable conditions. Climate change is expected to increase the frequency and intensity of heat waves in Afghanistan, worsening these effects:

- **Water Stress:** High temperatures lead to increased evaporation rates, reducing soil moisture and exacerbating water scarcity.
- **Crop Physiology:** Extreme heat can affect plant growth stages, leading to reduced germination rates, poor pollination, and diminished fruit and seed set.

- **Soil Degradation:** Prolonged high temperatures can degrade soil quality, affecting nutrient availability and structure. Soil erosion becomes more likely as vegetation cover diminishes due to heat stress.
- **Pest and Disease Pressure:** Warmer temperatures can alter the life cycles of pests and diseases, potentially leading to increased infestations and crop losses.
- **Economic Impact:** Lower crop yields and increased production costs.

Mitigating the effects of extreme heat, especially in vulnerable regions like Afghanistan, requires a multi-faceted approach. Here are some effective actions:

- **Urban Planning and Green Spaces:** Increase the number of trees and shaded areas in urban settings to lower surface and air

temperatures and implement green roofs and vertical gardens to reduce heat absorption in buildings.

- **Water Management:** Employ efficient irrigation systems like drip irrigation to optimize water use in agriculture and capture and store rainwater to support irrigation and reduce dependence on groundwater during dry spells.
- **Public Health Initiative:** Educate communities about the risks of extreme heat and the importance of staying hydrated and cool and establish community centers equipped with air conditioning where people can find relief during heatwaves.
- **Agricultural Adaptation:** Promote the use of heat and drought-resistant crop varieties to maintain food security and encourage practices that



enhance soil health and moisture retention.

- **Policy and Governance:** Develop and implement national and local policies aimed at climate adaptation and resilience-building. For international cooperation, collaborate with global organizations to secure funding and expertise for climate resilience projects.
- **Monitoring and Early Warning Systems:** Implement systems to monitor temperature extremes and provide early warnings to communities about impending heatwaves.

Conclusion:

By combining these strategies, communities can build resilience against extreme heat and reduce its impacts on health, agriculture, and overall quality of life.

Eight Reasons Why Afghanistan Needs Urgent Climate Actions:

1. Afghanistan is among the top 10 countries most affected by climate change and the least ready to respond, despite emitting less than 0.01% of global greenhouse gases emissions.
2. In 2023, Afghanistan entered its third consecutive year of drought, following the worst drought in three decades in 2022.
3. About 60% of the population relies on rain-fed agriculture, changing precipitations pose a threat to livelihoods and already severe levels of food insecurity and malnutrition.
4. Rising temperatures are accelerating glacier melt and snow packs, resulting in plummeting water availability, especially in urban areas.
5. Desertification has affected over 75% of land in the Northern, Southern, and Western regions, degrading soil and impacting Agriculture.
6. Looking ahead, La Nina's conditions are likely to become more prevalent from Jan to Mar 2025, with a 70% to 80% likelihood. Consequently, the start of the 2024/25 agriculture season is projected to face challenges, including below-average precipitation and above-average temperatures.
7. Afghanistan faces one of the World's largest humanitarian crises, with 23.7 million people in need of aid in 2024.
8. Humanitarian action is insufficient to address Afghanistan's climate-related vulnerabilities. Immediate action is needed to protect people over the long term and help them adapt. ■

Building Climate Resilience in Pakistan: Community-Led Adaptation and Urban Sustainability in the Asia Pacific

By *Muhammad Mudassar Javed*, Chief Executive Officer, Society for Human Rights and Prisoners' Aid (SHARP-Pakistan and Afghanistan)

Asia Pacific region is facing unprecedented challenges due to the intensifying effects of climate change, which are compounded by frequent natural disasters, rising temperatures, and extreme weather events.

Pakistan's vulnerability to climate change is well-documented. According to a Global Climate Risk Index, Pakistan is the fifth most vulnerable country in the world to climate change, with extreme heat being a significant risk factor, particularly evident in the rising frequency and intensity of heatwaves.

Environmentally, heatwaves intensify the Urban Heat Island effect (the phenomenon where cities experience higher temperatures compared to surrounding rural areas, primarily due to the presence of large amounts of heat-absorbing surfaces), making cities significantly

hotter than rural areas due to heat-retaining structures like buildings and roads. Pakistan has been facing severe UHI effect in large metropolitan areas particularly in Central and Southern Punjab, KPK and Sindh. The average temperature in Pakistan has risen by more than 1.6°C over the last century compared to the global average of 1.1 °C.

Rapid urbanization, unplanned development and deforestation have resulted in inadequate infrastructure, a lack of green space, and poor living conditions, all of which further enhance the impact of heatwaves. Cities such as Karachi, Lahore, Islamabad and Peshawar are particularly vulnerable because of their high population density and poor urban design. Heatwaves in Pakistan, particularly in urban areas, have resulted in thousands of deaths, with vulnerable populations such as the elderly, children, outdoor

workers, low-income communities, women and those with chronic illnesses being most at risk. A recent analysis by The Washington Post and Carbon-Plan concluded that by 2030, over 190 million people in Pakistan will be exposed to dangerous levels of extreme heat for at least one month each summer, the second-highest number for any country in the world.

As a humanitarian organization working both in Pakistan and Afghanistan, we recognize the urgency of addressing these issues through both immediate interventions and long-term strategies. Our experience in protection, emergency response, disaster response and community-based protection and adaptation has provided us with valuable insights into effective climate actions, particularly for vulnerable



communities that are most affected by these changes

To address these challenges, Urban Resilience must incorporate green infrastructure and update building codes to include heat-resistant materials and energy-efficient designs. Enhancing power and water infrastructure, developing heatwave early warning systems, and raising public awareness are critical. Implementing heatwave action plans with emergency response measures and cooling centers is essential for protecting vulnerable populations during extreme heat events.

Community-Based Climate Resilience:

Focus on Localized Solutions: The success of climate action hinges on the involvement of local communities in the design and implementation of solutions. In Pakistan, many vulnerable communities, particularly in flood-prone and drought-affected regions, have demonstrated significant resilience when empowered with the right tools and knowledge. Humanitarian organizations must prioritize community-led adaptation initiatives that integrate traditional knowledge with modern science, ensuring that solutions are culturally appropriate and sustainable.

Capacity building and education are vital for local communities to effectively assess and address climate risks. By enhancing local disaster preparedness and risk management skills, we can enable communities to respond more effectively to climate-induced shocks.

Climate Change Adaptation through Livelihood Support:

Diversifying Livelihoods in Climate-Affected Areas: Many communities in Pakistan rely on agriculture as their primary livelihood, which is increasingly threatened by changing weather patterns. Climate-resilient livelihood programs, such as the promotion of drought-resistant crops, sustainable farming practices, and alternative income sources (e.g., eco-tourism or green energy initiatives), can enhance food security and reduce dependence on climate-vulnerable sectors.

Strengthening Regional and International Cooperation:

Regional Climate Networks: Collaboration across borders is critical to addressing the transnational nature of climate change. Humanitarian NGOs must work together with regional organizations to share best practices,

resources, and knowledge. Strengthening partnerships between Pakistan and neighboring countries facing similar climate threats can lead to more coordinated and impactful climate actions.

International Funding and Technical Assistance: As we face increasingly complex climate challenges, securing long-term funding and technical assistance from international donors and climate funds is essential. NGOs can play a crucial role in ensuring that funding is directed toward the most vulnerable populations and regions.

Conclusion:

The Asia Pacific region is at a critical juncture in terms of addressing climate change and its impacts. In 2025, the region must prioritize community-based adaptation, strengthen climate-resilient livelihoods, and enhance governance structures to protect vulnerable populations. As a humanitarian NGO working in Pakistan, we are committed to collaborating with local communities, governments, and international partners to implement solutions that will reduce the impact of climate change and ensure a sustainable and equitable future for all. ■

Heatwave Impacts on Small Businesses

અમે કપડાં વેચવાનું કામ કરીએ છીએ. તીવ્ર ગરમીની સૌથી વધુ અસર અમારા પર થાય છે. પણ અમે આ વિષે વિચારતા ન હતા. ગરમી ઉપર તાલીમ પહેલી વાર મળી, આ તાલીમથી અમને ઘણું બધું નવું જાણવા મળ્યું. જેમ કે જેમ કે વાઈટ વોશ વિશે અમને ખબર ન હતી. હવે અમે વાઈટ વોશ કરાવીશું. તમેજ હવેથી ગરમીમાં વધારે સાવચેતી રાખીશું. - રેખાબેન દંતાણી, અમદાવાદ.

Summary: Rekhaben sells clothes in Ahmedabad but never thought about the impact of extreme heat. Now, with this training, we understand and will take action.

by Pallavi Rathod, AIDMI, India



Photo: AIDMI.

Top Two Cooling Agenda Items for the Heat Resilience and Performance Centre Against Extreme Heat in 2025

By **Jason KW Lee** and **Janice Y Ho**, Heat Resilience and Performance Centre, National University of Singapore, Singapore

The Heat Resilience & Performance Centre (HRPC) at the Yong Loo Lin School of Medicine, National University of Singapore, is a globally-connected first-class thermal research unit that aims to create holistic and forward-looking solutions that boost human resilience to rising ambient heat. On its agenda for 2025 are the following:

1. Advancing Regional Collaboration and Information-Sharing through its role as the GHHIN Southeast Asia Hub

Anchored at HRPC, the GHHIN Southeast Asia Hub aims to advance partnership, collaboration, and advocacy within Southeast Asia to protect and prepare for the impacts of heat on human health and well-being. The Hub was launched at the First GHHIN Southeast Asia Heat Health Forum on 7 January 2025 and is the first regional hub of the Global Heat Health Information Network (GHHIN), an UN-initiative spearheaded by the World Health Organization (WHO), World Meteorological Organization (WMO) Joint Office for Climate and Health, and the United States National Oceanic and Atmospheric Administration (NOAA).

With the success of the First GHHIN Southeast Asia Heat Health Forum (7-10 January 2025, Singapore) where 250 experts from diverse sectors convened, the Hub will foster further dialogue on the unique aspects of Southeast Asia's heat challenge, and highlight key contributions from researchers, policymakers, and



250 delegates attended the First GHHIN Southeast Asia Heat Health Forum, January 7-10, 2025, in Singapore.

individuals from the region. The Hub will develop specific plans that focus on key thematic areas of Urban Heat, Heat at Work, and Traditional & Cultural Heat Management Practices, while also supporting the role of media and communications and other topics in tackling heat-health issues. The GHHIN Southeast Asia Hub will forge strategic partnerships with key regional stakeholders to synchronize efforts in the region, and initiate efforts in research and capacity building, science-to-action activities, and information sharing.

2. Updating the National Clinical Practice Guidelines for Heat Injury

Alongside the Ministry of Defence (MINDEF) and Ministry of Health (MOH) Singapore, HRPC is leading the review and update of the 2010 National Clinical Practice Guidelines on the Management of Heat Injuries.

These revised guidelines will provide the latest, evidence-based recommendations to promote informed practices, and equip healthcare professionals with the necessary knowledge on heat-related illnesses to enhance patient outcomes. Contextualised for Singapore, the guidelines will serve as a reference point for clinical decision-making and contribute to the country's broader initiative to increase heat resilience. For example, the revised guidelines will include evidence-based strategies for prevention and early detection of heat injuries, and evidence-based treatment protocols that could potentially save lives.

Through these two agenda items and more, HRPC aims to catalyse further heat-resilient research and activities in the Southeast Asia region and beyond. ■

Extreme Heat: Recommendations for Local Action in the Asia-Pacific Region

By *Mihir R. Bhatt*, All India Disaster Mitigation Institute (AIDMI), India

There is not a single country in Asia Pacific that can avoid direct, substantial, and sustained action on extreme heat in 2025. This was evident at the APMCDRR 2024 Manila session on “Gender-Responsive Solutions for Heat Stress: Safeguarding Women’s Livelihoods” by ICVA, ADRRN, and AIDMI. This was also clear at RHPW 2024 Bangkok session on “Localization and Adaptation by Communities: Focus on Extreme Heat”.

Due to the two sessions mentioned earlier, there was an increased demand from authorities and local organizations for AIDMI to provide recommendations for action on extreme heat. In response, AIDMI invited ICVA and ADRRN to collaborate and develop a way forward for all three organizations, as well as the various stakeholders they engage with in the Asia Pacific region.

This collaboration resulted into a call for sharing of experience and expertise by Southasiadisasters.net, a leading and long standing local initiative bridging the policy and performance gap. The response from local authority, civil society agencies, and others were overwhelming and it was decided to jointly co-edit this issue for wider use and planning. Drawing from the contributions in this issue, and reflecting on the two sessions mentioned above, we have the following five areas of action.

1. Strengthening Community-Led Adaptation to Extreme Heat with Finance

- Empower local communities to design and implement extreme heat adaptation solutions, incorporating traditional knowledge supported with scientific advancements.
- Increase national funding for grassroots initiatives that address extreme heat and other climate-related risks.

2. Enhancing Early Warning Systems and Data Monitoring around Extreme Heat

- Develop and expand heat forecasting mechanisms, integrating real-time climate data to improve extreme heat disaster preparedness.
- Establish better communication channels to ensure timely dissemination of warnings, especially for extreme heat vulnerable populations.

3. Scaling Nature-Based Solutions (NBS) for Cooling at Family Level

- Implement large-scale reforestation programs and urban greening initiatives to mitigate extreme heat’s local impacts.
- Encourage sustainable infrastructure development using heat-resistant materials and eco-friendly designs at all levels of habitat.

4. Prioritizing Youth and Vulnerable Populations in Extreme Heat Governance in Local Authorities

- Strengthen policies that center children, youth, women, and marginalized communities such as migrants and all minorities in decision-making processes of cooling efforts.
- Increase investment in education and mental health support related to extreme heat stressors.

5. Fostering Asia Pacific and International for Collaborative Cooling

- Establish stronger partnerships between governments, NGOs, and private sectors to share best practices and resources for cooling.
- Advocate for increased cooling financing and policy coherence to support long-term extreme heat resilience-building across the Asia-Pacific.

AIDMI, ICVA, and ADRRN are committed to take the above five and related key actions ahead at policy as well as performance local to authorities, CSOs, and most important to local communities.

Those readers with collaborative interest are welcome to be in touch as soon as possible. Asia Pacific needs all of us to join efforts to cool down the region itself and the planet. There is no doubt. ■

Key Resources on Extreme Heat

1. Secretary-General's Call to Action on Extreme Heat, UN [link](#)
2. COP29 Event Raises the Bar on Understanding and Addressing Extreme Heat, UNDRR [link](#)
3. Heatwaves: Addressing a sweltering risk in Asia-Pacific, UNDRR, [link](#)
4. Prioritizing Heat Mitigation Actions in Indian Cities: A Cost-Benefit Analysis under Climate Change Scenarios (English), World Bank, [link](#)

CONTRIBUTORS

1. **Combating Extreme Heat in Asia-Pacific: APMCDRR 2024 as a Catalyst for Resilience and Disaster Risk Reduction**
Asma Saleem, Deputy Regional Representative for Asia and the Pacific, ICVA 2
2. **ADRRN Insight into Extreme Heat: An Emerging Priority for Disaster Risk Reduction in Asia**
Takeshi Komino, ADRRN Chairperson, Japan 3
3. **Protection of Coastal Communities from Extreme Heat in Bangladesh**
Muhammad Taher, Duyog Nivaran, Bangladesh 4
4. **Nothing About Us Without Us: Centering Children and Young People in Climate Action and Heat Governance**
Susmita Choudhury, James Balzer, Hikmah Ubaidillah, Husnul Maad, Keeva Duffey, Russell Dowling, Khadiga Alsharif, and Amelia Andrews, Child Fund, International 6
5. **Cooling Communities: Mercy Corps' Top Priorities for Extreme Heat Action**
Pratap Maharjan, Program Manager, and Kriti Bhujju, Influencing and Communication Specialist- Zurich Climate Resilience Alliance, Mercy Corps, Nepal 9
6. **The Effect of Extreme Heat and Drought in Afghanistan**
Abdul Wali Muslih, Manager, Technical and Coordination Unit, DACAAR Kabul, Afghanistan 10
7. **Building Climate Resilience in Pakistan: Community-Led Adaptation and Urban Sustainability in the Asia Pacific**
Muhammad Mudassar Javed, Chief Executive Officer, Society for Human Rights and Prisoners' Aid (SHARP-Pakistan and Afghanistan) 12
8. **Top Two Cooling Agenda Items for the Heat Resilience and Performance Centre Against Extreme Heat in 2025**
Jason KW Lee and Janice Y Ho, Heat Resilience and Performance Centre, National University of Singapore, Singapore 14
9. **Extreme Heat: Recommendations for Local Action in the Asia-Pacific Region**
Mihir R. Bhatt, All India Disaster Mitigation Institute (AIDMI), India 15

The views expressed in this publication are those of the author.

For Personal and Educational Purposes only.

Editor: Mihir R. Bhatt, All India Disaster Mitigation Institute, India

Editorial Advisors:

Anoja Seneviratne

Disaster Management Centre of
Government of Sri Lanka

Denis Nkala

South-South Cooperation and United Nations
Development Programme, USA

G. Padmanabhan

Former Emergency Analyst, UNDP, India

Dr. Ian Davis

Global Leader on Disaster Risk Reduction, UK

Dr. Prabodh Dhar Chakrabarti

Formerly Secretary NDMA and Executive Director
NIDM, India

Dr. Satchit Balsari, MD, MPH

Harvard FXB Center for Health and Human Rights,
USA



ALL INDIA DISASTER MITIGATION INSTITUTE

411 Sakar Five, Behind Old Natraj Cinema, Ashram Road, Ahmedabad-380 009 India.

Tele/Fax: +91-79-2658 2962

E-mail: bestteam@aidmi.org, Website: <http://www.aidmi.org>, www.southasiadisasters.net

Follow us on: @AIDMI_ORG AIDMI.ORG aidmi_org All India Disaster Mitigation Institute



South Asia's premier publication on disasters, climate and humanitarian action since 2005