MENTAL HEALTH AND CLIMATE CHANGE: POLICY BRIEF

In the 5 decades between 1970 and 2020, climate-related hazards have increased, with 50% of all events occurring since 2003 and nearly 5 billion people in total affected *(1)*

Key points

- Climate change is increasingly having stronger and longer-lasting impacts on people, which can directly and indirectly affect their mental health and psychosocial well-being.
- Several environmental, social and economic determinants of mental health are negatively affected by climate change.
- Certain groups are disproportionately at risk from climate change-related hazards, including people with pre-existing mental health conditions.
- The World Health Organization (WHO) recommends five key approaches to address these impacts:
  1. Integrate climate change considerations into policies and programmes for mental health, including MHPSS, to better prepare for and respond to the climate crisis
  2. Integrate MHPSS within policies and programmes dealing with climate change and health
  3. Build upon global commitments
  4. Implement multisectoral and community-based approaches to reduce vulnerabilities and address the mental health and psychosocial impacts of climate change
  5. Address the large gaps that exist in funding both for mental health and for responding to the health impacts of climate change

We need to be concerned about mental health in the context of climate change

Climate change is a growing global crisis. Its scale is already massive, and with inaction it continues to grow. It results in both acute hazards, such as hurricanes, floods and wildfires, and slower-onset threats, such as ecosystem changes, food and water insecurity and loss of place and culture.

Climate change is one of a number of global environmental threats. The effects of unsustainable human activities, such as deforestation, ecosystem degradation and depletion and loss of biodiversity, and economies that are reliant on fossil fuels are leading to water and food insecurity, air pollution and contamination of land, rivers and oceans. All of these are having a measurable adverse impact on human health, mental health, and well-being and further exacerbating the climate emergency.

Not only is nature essential for human existence, but many of its functions and contributions are irreplaceable.

Studying the impact of these changes on individuals and communities, researchers and public health officials have largely focused on physical health. **However, climate change also exacerbates many social and environmental risk factors for mental health and psychosocial problems, and can lead to emotional distress, the development of new mental health conditions and a worsening situation for people already living with these conditions. Therefore, in preparing for and responding to this growing emergency, there is an increasing need for the provision of mental health and psychosocial support (MHPSS).**

World Health Organization

Mental health conditions already represent a significant burden worldwide. Even without climate change, the situation for mental health globally is already challenging. In many countries large gaps exist between mental health needs and the services and systems available to address them. In fact, most people with mental disorders do not receive any care. This is particularly true in low- and middle-income countries, where fewer than 20% report receiving adequate services *(3)*.

Only 13
the median number of mental health workers for every 100 000 persons *(5)*

25%
of years lived with disability are caused by mental (14.6%), neurological (7.6%) and substance use (2.7%) disorders *(2)*

1 billion
The number of people worldwide living with a mental disorder *(2)*

$ 1 trillion
The annual cost of common mental disorders *(4)*

Only 2%
of Governments health budgets are spent on mental health *(5)*

These figures will be exacerbated by the climate crisis!

There are gaps in understanding the impact of climate change on mental health and psychosocial well-being, but current knowledge is sufficient to act!

Not enough attention has been paid to mental health and psychosocial well-being in climate change literature, with studies on the topic emerging only since 2007 *(6)*. The connections between climate change and mental health and psychosocial well-being have been discussed mostly within the health frameworks of emergency and disaster management, particularly in the context of extreme weather events *(7,8)*. However, knowledge on the topic is growing *(6,9)* and strong arguments can be made for expanding this focus beyond these frameworks to recognize the role of MHPSS within broader climate actions.

Key operational definitions

Climate change: The Intergovernmental Panel on Climate Change (IPCC) defines climate change as "a change in the state of the climate that can be identified by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer" *(10)*.

Mental health: WHO defines mental health as "a state of well-being in which every individual realizes his or her own potential, can cope with the stresses of life, can work productively and fruitfully and is able to make a contribution to her or his community" *(11)*.

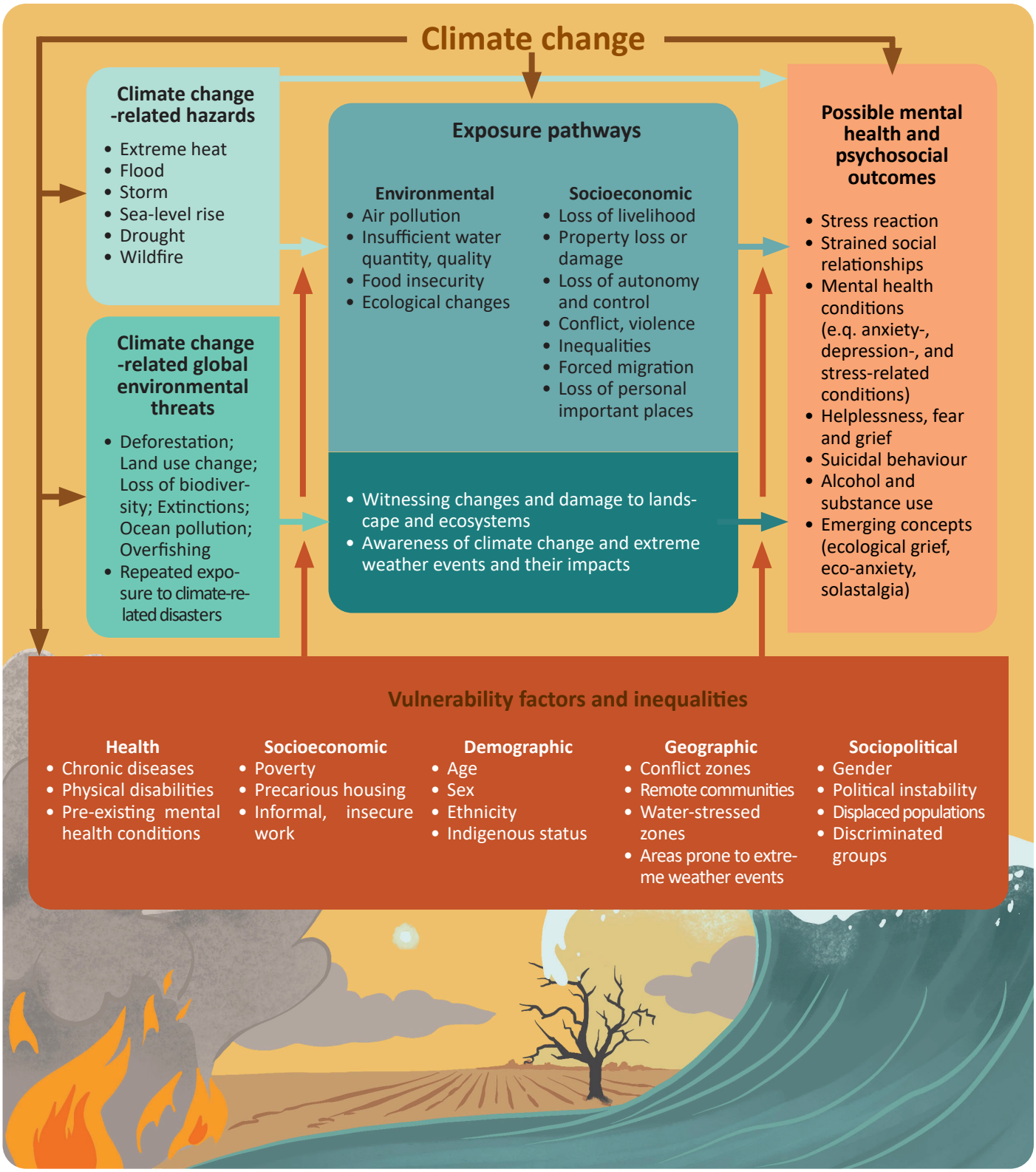
Mental health and psychosocial support: The composite term "mental health and psychosocial support" (MHPSS) is used in the Inter-Agency Standing Committee (IASC) Guidelines for MHPSS in Emergency Settings to describe "any type of local or outside support that aims to protect or promote psychosocial well-being and/or prevent or treat mental disorder" *(12)*. The global humanitarian system uses the term MHPSS to unite a broad range of actors responding to emergencies and to underscore the need for diverse, complementary approaches in providing appropriate support.

The pathways by which climate change can affect people's mental health and psychosocial well-being are multiple

Figure 1 displays the direct and indirect pathways by which climate-related hazards, long-term risks, exposure pathways and vulnerabilities interrelate to impact mental health. These factors do not act in isolation. Instead, hazards may overlap (e.g. cascading events such as storms followed by floods). People may be exposed simultaneously to contaminated water and food insecurity while also being exposed to mosquito breeding sites. Existing population vulnerabilities may be exacerbated by climate hazards and long-term climate risks, resulting in aggravated inequities *(14).* The resulting effects have considerable implications for mental health and well-being.

The IPCC, in its 6th assessment report states, with very high confidence, that Climate-related illnesses, premature deaths, malnutrition in all its forms, and threats to mental health and wellbeing are increasing. It also identifies that, at the global level, health systems are poorly resourced, and their capacity to respond to climate change is weak, with mental health support being particularly inadequate (13).

Figure 1: Main interlinkages between climate change and mental health.



Environmental, social and economic determinants of mental health are negatively affected by climate change

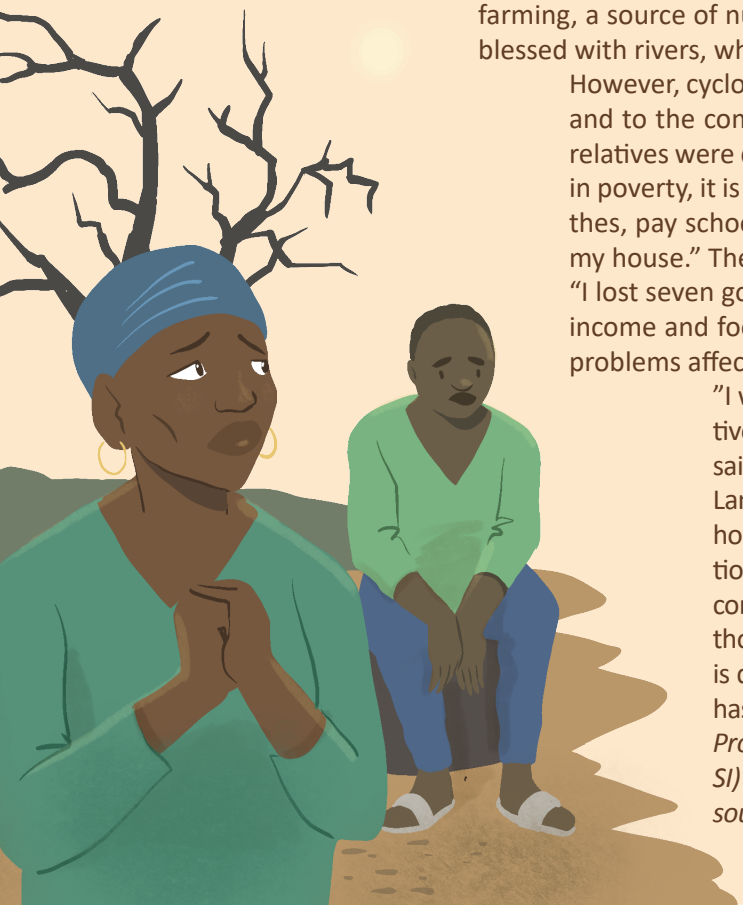
The environmental, social and economic determinants of mental health (identified as exposure pathways in Figure 1) include air quality, water quantity and quality, food security and safety, income and livelihoods, ecosystem changes and a number of other social and economic pathways.

For example, air pollution during periods of high temperatures can cause respiratory diseases that increase demand for health care services, reduce mobility and the capacity to work, and can lead to mental health consequences that range from minimal stress and distress to the development of mental health conditions, particularly in low-income settings *(15)*.

The case of prolonged droughts demonstrates a clear example of the impacts of climate change on these determinants. Droughts significantly disrupt agricultural production and lead to loss of livelihood, leaving many communities in poverty, a factor clearly linked with many common mental disorders *(16)*. Droughts can also lead to water scarcity and food insecurity, both of which can negatively impact mental health and increase the risk for mental health conditions *(17-19)*, the latter of which is associated with developmental delays, mental health issues and neurological problems that can result from malnutrition *(20-21)*. Both food and water scarcity can also further contribute to population displacement, which disrupts family relationships and can leave those displaced with fewer resources, services, and social support in the new community, all of which exacerbate mental health risks *(19,22)*. Attention to the influence of climate change on determinants of mental health such as these is crucial for both understanding the impact and for taking climate action.

Climate change may also lead to increased conflict, or aggravated conflict dynamics, particularly in regions dependent on agriculture *(23)*, and to forced migration for some and forced immobility in challenging environments for others *(24)*. Inevitably, conflict negatively impacts mental health and well-being, with one in five persons exposed to it experiencing a mental health condition *(25)* and countless others enduring distress in the face of adversity. Meanwhile, migration is also commonly viewed as a risk factor for mental health and psychosocial problems, though more research is needed with populations migrating for reasons other than conflict *(26)*.

Climate action is clearly needed to protect mental health!



Case study: The impact of Cyclone Idai

Wonder Muyambo believes his mental, social and economic well-being were all better before several climate-related hazards affected his family and community. Zimbabwe's Chimanimani District was blessed with fertile lands for subsistence farming, a source of nutrition and income to the local people. The area was also blessed with rivers, which supported irrigation for better yields.

However, cyclone Idai brought serious problems to Wonder's way of living and to the community. "My one roomed house and other houses of my relatives were destroyed, which made life very difficult. My family was left in poverty, it is now very difficult for me to source money to buy food, clothes, pay school fees for my kids and buy building materials to construct my house." The cyclone also killed domestic animals, including Wonder's. "I lost seven goats and 20 road runners which were my family's source of income and food.'' Challenges such as depression, anxiety, stress-related problems affected many community members.

"I was stressed for a long period of time, I lost some of my relatives and I am having challenges forgetting about the incident'' said Wonder. Yet, the impact of climate change is ongoing. Landslides following the cyclones led to the destruction of many houses, further death, land degradation, soil erosion and siltation to rivers, all of which greatly impact irrigation and leave the community in greater distress. However, finding supports for those struggling with the mental health and psychosocial issues is difficult. There are few services in the area and mental health has been historically under prioritized.

Provided by the Regional Psychosocial Support Initiative (REPSSI) Zimbabwe with support from Towards Sustainable Use of Resources Organisation (TSURO)

Certain groups will be disproportionately at risk due to climate change, depending on existing vulnerabilities and inequalities.

This is particularly true in low- and middle-income countries, despite the fact that such countries have historically emitted low levels of greenhouse gases *(27-32).* For instance, indigenous people may be more likely to define well-being in terms of harmony with natural environments, which are significantly disrupted by climate change. As a result, they may be more strongly affected by the loss of even small amounts of land or wildlife or by other climate-related impacts. Children and adolescents are also uniquely affected and can experience strong reactions in response to the scale of the crisis and the lack of action taken *(33).*

However, vulnerability is context-dependent and understanding who is vulnerable and in what way requires targeted assessment to identify contextual factors *(34).* Any single factor may not necessarily determine vulnerability. However, in the case of different vulnerability factors, often interacting, the effects are multiplied *(22,35,36).* For example, someone may be older in age, or of lower socioeconomic status, or living in a water-stressed zone or living with a chronic disease, but may not be as vulnerable as someone who experiences all these factors simultaneously.

Case study: Addressing the MHPSS impacts of food insecurity in climate affected regions

Since 2015, thousands of internally displaced persons (IDPs) have migrated to the Haut-Bassins region of Burkina Faso added pressure on natural resources and exacerbated climate change impacts, including reduced agricultural production, increased food insecurity and conflict, all of which affect mental health and well-being.

The Integrated Production Diversification and Nutritional Improvement (PADI) programme, led by Action Against Hunger (ACF) and CBM international, aims to increase food security in the area, particularly among vulnerable groups (e.g. people with disabilities), while sensitizing stakeholders to climate change and the sustainable management of natural resources. The project also includes integrated MHPSS components to sensitize communities to stressors that affect mental health and well-being, establish community-based self-support groups, integrate basic mental health care in non-specialized settings through WHO's mhGAP programme and promote the rights of people living with psychosocial disabilities through WHO's QualityRights toolkit *(37).*

Mental health and climate change: emerging concepts

There have been increasing efforts to better understand the mental health impacts of climate change. Individuals and communities may experience many intense emotions in the face of a changing climate, including sadness, fear, despair, helplessness and grief. Various terms have emerged to describe these responses, particularly among youth affected by climate change, including climate change anxiety *(38),* solastalgia *(39),* eco-anxiety *(40)*, environmental distress *(41)*, ecological grief *(42)* and climate-related psychological distress *(30).* Further research is needed to better understand these concepts, including what risk factors predispose people to these experiences and whether specific prevention and response actions are necessary. In any case, it must be noted that many of these reactions may represent understandable and congruent responses to the scale of the crisis the world faces *(33)*. In any emergency, including the global climate crisis, the terminology used to describe mental health and psychosocial problems can either support or stigmatize those affected. Care should be taken to ensure the use of terminology that normalizes reactions to difficult situations and reinforces people's abilities to overcome adversity, rather than assuming the need for clinical intervention for all or labelling everyone affected as "traumatized".

The dual impact of involvement in climate change action

Conversely, potential beneficial mental health outcomes resulting from engaging in climate action have also been described *(9)*, such as increased well-being resulting from actively coping with the situation through climate action *(43).* However, others have discussed the potential distress experienced by people when confronting the scale of the problem *(44)*, indicating that climate action can also be harmful for mental health and well-being in some cases. Further research is required to develop a clear understanding of how climate action may promote and protect mental health and well-being and how better mental health can support increased action to address climate change.

Examples of mental health impacts of climate change and exposure pathways

classification based on (*45*)

Examples of mental health impacts

Stress reactions

• Climate-related hazards can lead to intense emotional suffering *(22,30,45,46).*

• Most people experience some form of distress after an emergency but can effectively cope once basic needs are met and security and safety are restored *(45,47).*

Stress-related physical health problems

• Stress can result in lower immune system responses, increasing vulnerability to air pollution and water-borne diseases *(45,48,49).*

• Chronic distress is linked to sleep disorders, which can influence physical illness or worsen mental health and psychosocial well-being *(22,45,50).*

• Psychological stress can increase risks of developing cardiovascular and autoimmune diseases and potentially cancers *(50-52).*

Mental health conditions

The development of mental health conditions, including depressive, anxiety and stress-related conditions, has been reported following extreme weather events *(27,31).*

Strained social relationships

• Climate-related hazards lead to strains on interpersonal relations and intimate partner violence *(31,38, 49)*

• Other psychosocial impacts include family separation and disconnection from social support systems (e.g., children having to be temporarily relocated and required to attend another school or miss school *(53)*

Helplessness, fear, and grief

• Witnessing the slow impacts of climate change unfold can lead to worries about the future, along with feelings of helplessness and distress *(39, 45).*

• Some people experience feelings of loss, helplessness and frustration because they feel unable to stop climate change or make a difference *(31).*

• Many young people report feeling impairing distress and a sense of betrayal and mistrust of government in the face of climate inaction *(33).*

Increased risk of suicidal behaviour

• Risk of suicide may be higher among those who have experienced repetitive or severe hazards *(27,54).*

• Rising ambient temperatures have also been linked to increased suicide rates in many countries *(55-57).*

Examples of exposure pathways

Loss of personally important places

• Climate change threatens the environment and local communities, which in turn can create feelings of loss for important places and a sense of desolation *(22,39).*

• Changes in the physical environment *(58)* and disruption to peoples' home environments can lead to emotional distress and disorientation *(27,31)*. For example, when people lose their homes to rising sea levels *(59)* or when land becomes unsuitable for farming practices or unable to support food crops due to long-term drought *(61),* those affected may experience emotional distress and a sense of helplessness *(19,36).*

• The loss of home environment can create a sense of a loss of continuity and belonging *(59,62)* and of personal identity *(31,63).*

Loss of autonomy and control

• Climate change impacts basic needs and services and affects people's sense of autonomy and control *(39,60)* – for example, making mobility a challenge for older people and people with disabilities *(45).*

Pollution

Air pollution is a significant driver of climate change that has also been associated with increased risk of mental health conditions *(64)*, including for children following mothers' exposure to particulate matter during pregnancy *(65).*

Approaches to address the mental health and psychosocial impacts of climate change must be implemented with urgency

Joint recommendations to MHPSS and climate change actors

1. Integrate climate change considerations into policies and programmes for mental health, including MHPSS, to better prepare for and respond to the climate crisis

Climate-related emergencies are increasing in frequency and severity. Better preparedness and disaster risk reduction (DRR) are essential to protect people's mental health in the face of these issues. The IASC MHPSS Reference Group (RG) recently produced a technical note linking DRR and MHPSS (7) to support the delivery of a priority set of actions to reduce suffering and improve mental health and psychosocial well-being across and within DRR activities. However, there are additional long-term climate change risks that DRM alone cannot address. Thus, although the approaches documented in this guidance can be useful in reducing risks, more action will also be needed to respond to climate change, beyond climate-related disasters.

As a cross-cutting topic (66,67), MHPSS should be integrated more broadly into climate change strategies and plans aiming to strengthen climate resilience and/or to promote the co-benefits of prevention and mitigation actions. Likewise, climate change should also be integrated into mental health strategies and plans, including MHPSS. For instance, mitigation actions undertaken in the most polluting sectors (e.g. transport and urban planning) also have the potential to leverage important mental health co-benefits (e.g. a reduction in depression associated with active transport – walking and cycling, 68), while climate change adaptation may promote mental health and well-being. Likewise, the MHPSS field can greatly benefit from broader recognition of the totality of climate risks, both acute hazards and slower-onset impacts, and the integration of climate change adaptation and mitigation strategies.

Case study: Reducing risks to mental health and well-being from climate-related emergencies in India

"Developing Resilient Cities through Risk Reduction to Disaster and Climate Change" is a collaboration facilitated by the United Nations Development Programme (UNDP) and India's National Institute of Mental Health and Neurosciences (NIMHANS). It began in 2017, focusing on disaster risk reduction (DRR) and integrating MHPSS. Through the project, NIMHANS partners with local government departments, community organizations, vulnerable groups and other stakeholders to support the integration of MHPSS components into existing disaster risk management (DRM) initiatives through policy development, planning, preparedness and capacity-building. NIMHANS has developed many tools for integrating MHPSS and DRM for various stakeholders, including a manual for MHPSS/DRM integration, a facilitator's manual for disseminating MHPSS/DRR trainings and other materials for advocacy and awareness-raising *(69)*.

2. Integrate MHPSS within policies and programmes dealing with climate change and health

Key strategies in any response to climate change are mitigation and adaptation.

There are important co-benefits to be gained from actions that contribute to **climate change mitigation**. Interventions related to active transport, for instance, are positive for physical health and can be positive for mental health too *(70)*. Transport can also be important for access to services and social interaction, which have positive effects on mental health *(71)*. Urban design that is environmentally friendly can provide green spaces for communities, with mental health benefits and stress reduction in different settings *(70)*.

Regarding **adaptation interventions,** WHO recommends a systematic approach to strengthening the climate resilience of health systems. This is outlined in the WHO Operational Framework for Building Climate Resilient Health Systems *(72)*. Mental health considerations and MHPSS approaches should be integrated within this health systems strengthening approach to build resilient health and mental health systems (Table 1). Both for mitigation or adaptation strategies, indicators, metrics, and monitoring mechanisms are required to better understand the linkages between climate change and mental health.

Case study: Integrating MHPSS in preparedness planning for climate hazards

Bangladesh faces many climate-related hazards, including heavy rainfall, flooding and landslides. To better prepare, the national MHPSS Technical Working Group, a coordination mechanism comprising humanitarian, development and government actors, developed an emergency preparedness and response plan (EPRP) to address mental health and psychosocial needs. The plan was tested through intersectoral simulation exercises and ultimately was incorporated into broader response strategies in the country *(7)*.

Integrating mental health considerations with climate change actions

Examples of integrated mental health and climate change actions

Leadership and governance

Governance

• Integrating climate change and MHPSS considerations into main policies and strategies in health-determining sectors, for adaptation (e.g. drought management and food production) and mitigation (e.g. urban planning and transport).

• Facilitating conditions for community mobilization in climate change adaptation and mitigation actions.

Policy

• Including MHPSS in national strategies on health and climate change, such as Health in National Adaptation Plans (HNAPs), as well as in other relevant climate change policies and plans (e.g. Nationally Determined Contributions (NDCs) and Long-Term Low-Emission Sustainable Strategies (LT-LEDS)).

Cross-sectoral collaboration

• Establishing a single cross-sectoral MHPSS coordination mechanism that includes representatives and decision-makers from all sectors.

• Developing functional pathways between sectors dealing with climate action (both adaptation and mitigation) and MHPSS services.

Health workforce

Human resources

• Assessing and projecting climate change-related workforce capacity requirements.

• Developing the capacity of general health-care workers to understand the mental health and psychosocial impacts of climate change in order to provide basic psychosocial support to those affected.

• Training health managers on the effective integration of MPHSS into their climate change and health plans and strategies.

• Developing and implementing organizational approaches to prevent and manage problems of mental health and psychosocial well-being among staff and volunteers.

Organizational capacity development

• Developing capacity to provide basic mental health care for people living with mental, neurological and substance use (MNS) conditions at every health facility.

• Building referral pathways among mental health providers, general health-care providers, community-based support and other services.

Vulnerability, capacity and adaptation assessments

Vulnerability, capacity and adaptation options

• Establishing indicators and baselines and assessing climate sensitivity and future risks to mental health and psychosocial well-being in climate change and health vulnerability and adaptation assessments.

• Using these assessments to analyse local vulnerabilities and capacities with community actors.

• Developing effective interventions to prevent and address mental health impacts, based on identified risks, vulnerabilities and capacities.

Integrated risk monitoring and early warning

Integrated disease surveillance and early warnings

• Mapping geographic and seasonal distribution of hazardous events.

• Developing and testing early detection and warning systems in collaboration with people with disabilities, including psychosocial disabilities, and people with MNS conditions.

• Establishing surveillance systems integrating mental health outcomes and climate/weather information (e.g. heat stress and mental health).

Monitoring and evaluation (M&E)

• Identifying and including indicators of climate-related stressors, vulnerability, MHPSS emergency preparedness and response capacity.

• Establishing monitoring and evaluation mechanisms to measure the effectiveness of MHPSS activities *(73)*.

Communications

• Preparing a risk communication strategy for disseminating essential information on climate risks to mental health and well-being, including information on positive coping.

Health and climate research

Research agenda
• Including MHPSS in the national research agenda on climate change and health.
• Developing a better understanding of, and response to, emerging concepts around mental health outcomes related to climate change.

Climate-resilient and sustainable technologies and infrastructure

Resilience
• Assessing the vulnerability of health-care facilities, including MNS services related to climate change.
• Ensuring that every health facility has at least one person trained, and a system in place, to identify and provide care for people with mental health conditions.

Environmental sustainability
• Assessing the carbon/environmental footprint of health-care facilities to create climate resilience and ensure sustainable technologies and infrastructure.
• Developing and implementing plans to strengthen environmental sustainability which maximizes benefits for the mental health of staff and patients.

Medical product
• Ensuring that consideration of climate change impacts on certain pharmacological agents, such as psychotropic medications, is properly integrated into relevant treatment protocols

Management of environmental determinants of health

Monitoring and regulation
• Establishing integrated monitoring systems that allow the collection and analysis of data on environmental hazards, socioeconomic factors and mental health outcomes (e.g. drought or heat stress management).
• Revising and enforcing regulations on key environmental determinants of mental health and psychosocial well-being (e.g. air quality and safety of housing).

Climate-informed health programmes

Health programming
• Developing or revising medium- and long-term national mental health plans to consider capacities that may be stressed and thresholds that may be exceeded by climate change.
• Integrating climate change into existing national programmes for mental health.

Delivery of interventions
• Analysing seasonal trends – using information gathered in climate change and mental health vulnerability assessment risk maps – to target resources and preventive measures for those most at risk.

Emergency preparedness and management

Inform policies and protocols
• Including MHPSS in national DRR strategies and emergency preparedness and response plans.

Disaster risk management
• Integrating MHPSS into risk assessments for current and future exposure to climate-related hazards.
• Integrating MHPSS in relation to risk reduction, preparedness and response into health sector emergency plans for extreme weather events.
• Including people living with mental health conditions and disabilities in contingency and evacuation planning for climate-related events.
• Establishing sustainable and community-based services to facilitate recovery from climate-related hazards.

Climate and health financing

Health-specific funding mechanisms
• Including climate change considerations in mental health research and programme development proposals submitted to and funded by health funding mechanisms.

Climate change funding streams
• Including mental health considerations in climate change and health proposals submitted to climate change funding streams (e.g. Global Environment Facility (GEF), Adaptation Fund (AF) and Green Climate Fund (GCF)).

3. Build upon global commitments

Much can be achieved by integrating MHPSS in the context of climate change by supporting and building upon existing global agreements.

- **The Sustainable Development Goals (SDGs)** address mental health and psychosocial well-being in the context of reducing noncommunicable diseases *(74)*. Additionally, several goals and targets directly or indirectly contribute to achieving good mental health and psychosocial well-being – particularly SDG targets related to climate hazards, exposure pathways and vulnerabilities that determine mental health – and their achievement can contribute to reducing negative mental health outcomes.
- **The Paris Agreement**, a legally binding international treaty, aims to limit global warming to below 2°C, and preferably to below 1.5°C *(75)*. It has been described as a health agreement *(76)* because of the range of positive health outcomes that would be achieved if it were fully implemented. Although mental health is not specifically mentioned, it is implicit in the agreement's pursuit of equity and the reduction of vulnerability factors. It calls on Parties, when taking action on climate change, to "consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity" *(75)*. Full implementation of the agreement, by all countries, would greatly advance progress on mitigating both the climate crisis itself and its devastating impacts on mental health.
- **The Sendai Framework for Disaster Risk Reduction 2015-2030** was adopted by countries at the Third UN World Conference on Disaster Risk Reduction in Sendai, Japan, in 2015. The Framework asserts that many disasters are exacerbated by climate change, that disasters are increasing in frequency and intensity, and that they are hindering progress towards sustainable development (*77*). Despite MHPSS being only briefly mentioned in priority four of the Sendai Framework (which focuses on recovery from crises), strong arguments exist for integrating MHPSS within all areas of DRR *(78,79)*. Examples exist globally of effective MHPSS and DRR programmes in areas heavily affected by climate change *(69)*. The WHO Health Emergency and Disaster Risk Management Framework *(8)* highlights MHPSS as a core component of DRM, while a recent IASC technical note outlines guidance to better support MHPSS and DRR integration in preparing for, responding to and recovering from hazards globally *(7)*.

4. Implement multisectoral and community-based approaches to reduce vulnerabilities and address the mental health and psychosocial impacts of climate change

As the global climate crisis increases in intensity, priority should be given to the development of resilience at the community level. Community-based approaches recognize people affected by emergencies as active participants and leaders in efforts to improve individual and collective mental health and well-being, rather than passive recipients of external aid or support. Community-based MHPSS approaches also emphasize the value of working with communities to build on existing formal and informal systems of care that encourage recovery and resilience *(80)*. These approaches can and should also be applied to addressing the impacts of climate change, including through existing community-based climate change adaptation and mitigation efforts.

Though more research is needed on the impact of climate activism on mental health and well-being, engaging in action to address climate change itself is crucial. Government leaders, climate adaptation and mitigation actors and MHPSS professionals must come together to promote community-based climate action that builds resilience and addresses the root causes of the problem, such as community-led initiatives to reduce household air pollution *(81)*, simultaneously addressing its impact on the crisis and on mental health. Youth are well placed to engage in advocacy on this front and have done so in many forums. However, they should not be expected to act alone, or be forced to do so in ways that may be harmful for their development, because of inaction. Everyone has a role to play in building collective resilience and confronting the crisis.

Case study: Raising awareness and reducing stigma in small-island states

Caribbean island countries are increasingly being affected by hurricanes due to climate change. Learning from past emergencies where MHPSS needs were often left unaddressed, the Caribbean Development Bank (CDB) partnered with the Pan American Health Organization (PAHO) to develop an awareness campaign to build MHPSS preparedness capacities and to reduce stigma related to seeking help for mental health conditions within communities. The campaign was based on the "one love, one family" principle of many Caribbean cultures and a number of tools were developed under the slogan "Stronger Together", including an Illustrated guide for psychological first aid (PFA) that was adapted to the local context and tested with affected communities *(7)*.

5. Address the large gaps that exist in funding both for mental health and for responding to the health impacts of climate change

Regardless of climate change, the availability of mental health services is limited by gaps in funding and a lack of trained personnel. Estimates show that mental health receives less than 1% of international aid for health *(82)*. Moreover, governments spend just 2.1% of their health budgets on mental health *(5)*. However, the costs of mental health impacts are very large. Lost productivity resulting from depression and anxiety alone, two of the most common mental disorders, costs the global economy approximately US$ 1 trillion each year *(4)*.

There are also funding gaps for responding to the general health impacts of climate change. Promised support by developed countries to less developed countries has not materialized *(83)*.

Moreover, less than 0.5% of international climate change adaptation financing has been directed to climate adaptation to protect health *(84)* and the figure is much less for mental health and psychosocial well-being.

However, there are important mental health co-benefits of both climate change adaptation and mitigation actions, which support the argument for better use of existing funds.

Case study: Building back better following natural hazards

The Philippines was severely affected by Typhoon Haiyan in 2013. Prior to the emergency, investment in actions to address the MHPSS impacts of climate-related hazards was limited. After the event, in the recovery phase, an international collaboration of partners was formed by the Philippines Department of Health to build a better mental health system. To do this, a series of trainings was held for non-specialist health workers in Eastern Visayas region, an area badly affected by the typhoon. More than 90% of non-specialist health personnel in the region's 159 health units and 32 district and provincial hospitals were trained to provide mental health care, and 1038 community health workers received training in psychosocial support. As a result, over four million people in the region now have access to quality mental health services *(7)*.

Concluding remarks: act now to protect mental health

There is growing evidence of the various mechanisms by which climate change is affecting mental health. Countries need to dramatically accelerate their responses to climate change, including efforts to address its impacts on mental health and psychosocial well-being. The systemic, global and potentially irreversible effects of the crisis have given rise to emerging concepts such as climate change anxiety, solastalgia, eco-anxiety and ecological grief. In many cases, these reactions may represent understandable and congruent responses to the crisis the world faces, and yet their impact can be significant. Although there is a need for further research, the world has sufficient experience and evidence to guide immediate action.

Strengthening the link between mental health and climate change is an opportunity to create a more holistic and coordinated response. Effective interventions are available and can be implemented immediately. With further support from policy-makers, researchers and MHPSS and climate actors, other interventions will be developed and a holistic response can be implemented.

Given the human impacts of climate change, mental health and psychosocial well-being need to be one of the main focuses of climate action. There needs to be a commitment both politically and financially and across all sectors to make MHPSS and climate action a priority. This is the only way to achieve justice for all those who are affected.

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