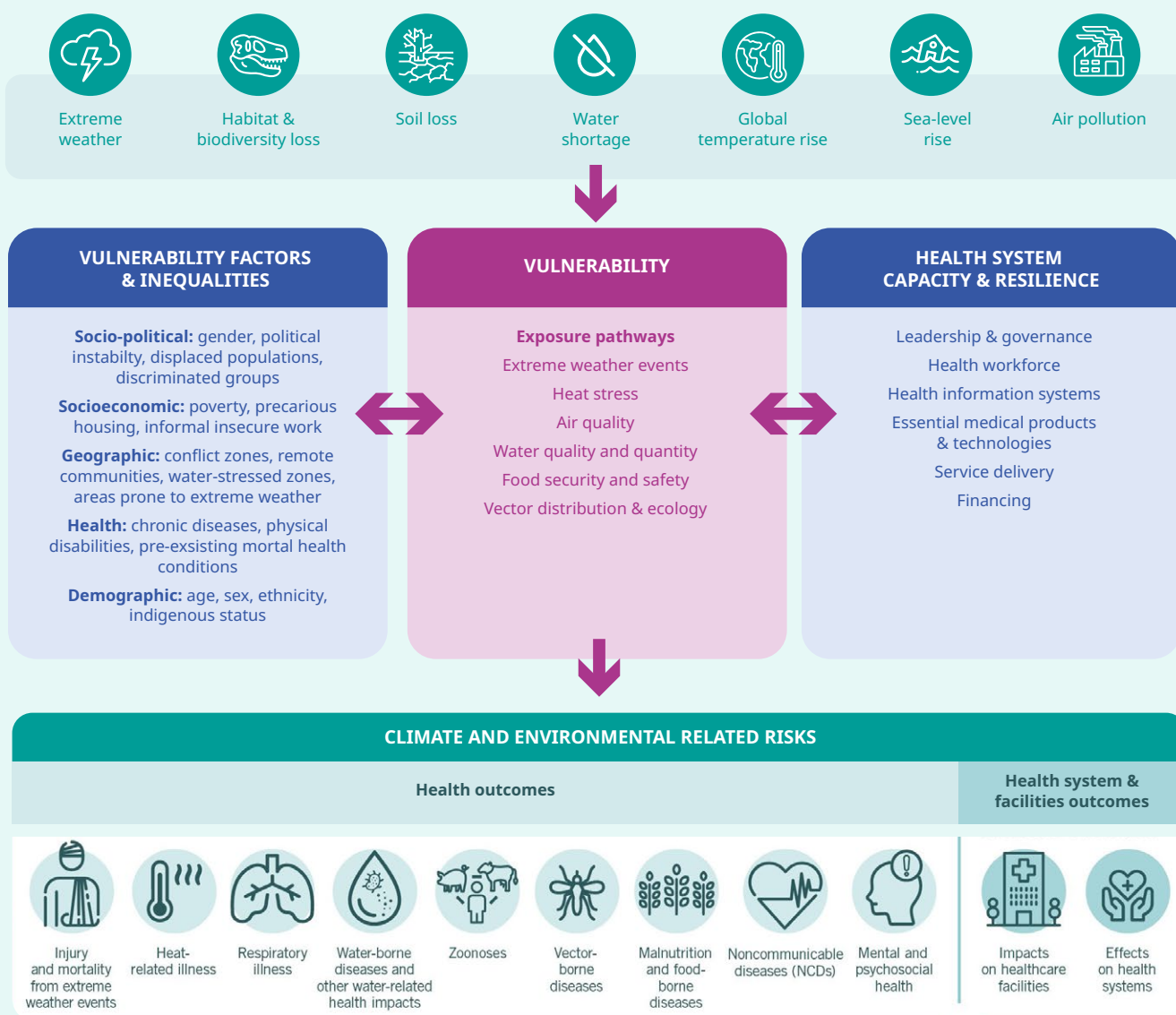


Healthier environments could prevent almost one quarter of the global burden of disease. Health systems are the main line of defence for populations faced with emerging health threats. **To protect health and avoid widening health inequities, countries must build low carbon health systems that are resilient to environmental degradation and climate change.**

This note presents **practice-oriented “green tips”** to promote interventions that address environmental degradation and climate change and promote planetary sustainability in order to achieve better direct and indirect health outcomes and have more resilient health systems. [See also guidance on activities that qualify for Rio Markers in the health sector.](#)

Figure 1
The impacts of climate and environmental changes on health outcomes and health systems



Adapted from: [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(23\)00022-0/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(23)00022-0/fulltext), <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>

POLICY FRAMEWORK AND GOVERNANCE



ALIGN HEALTH, ENVIRONMENT AND CLIMATE POLICIES

- ▶ **Ensure alignment across health programmes and climate and environmental frameworks and promote interventions that contribute to their implementation:** Align health programmes with key climate and environmental frameworks such as Nationally Determined Contributions, National Adaptation Plans, National Biodiversity Strategies and Action Plans, and National Disaster Risk Reduction Strategies. Promote interventions which will implement components with these commitments. Incorporate the use of Health Impact Assessments in climate and environmental policies and programmes.
- ▶ **Facilitate synergies and efficiency gains** among interconnected policies and plans within Ministries covering Health, Agriculture, Environment and Climate and Public Finance to enhance collaboration and impact across sectors. Encourage their participation in discussing and revising national commitments on the environment and climate in order to ensure that health is fully integrated.
- ▶ **Promote “Health in All Policies” and “Health for all Sectors”:** Advocate for systematic action on environmental and climate risks and vulnerabilities to mitigate direct and indirect effects on health outcomes in the short and long term.
- ▶ **Incorporate biodiversity and ecosystem protection into health policies encouraging nature-based solutions for health.** Promote the greening of cities and urban environments (introducing vegetation, reducing car use, creating walking paths and cycling lanes) to reduce air pollution and heat stress while at the same time reduce risk factors for non-communicable diseases and promoting mental and physical health and well being.





IDENTIFY AND PREPARE FOR ENVIRONMENTAL AND CLIMATE-RELATED RISKS

► Identify and estimate costs:

- Include environmental and climate risk assessments in health policy and planning to identify risks, vulnerability factors and inequalities and address potential climate and environmental hazards to health outcomes and health systems.
- Incorporate environmental risks into health investment plans, including costs for adaptation, mitigation, and response.

► Monitor, mapping and early warning:

- Integrate environmental and climate risk indicators in public health risk identification systems.
- Strengthen disease surveillance systems and develop a harmonized early warning system in compliance with International Health Regulations.

► Adapting to & mitigating risks:

- Create a Disaster Risk Management Framework for Health to evaluate, prevent, prepare for, and respond to climate and environmental vulnerabilities in health systems.
- Advocate flexibility and responsiveness of health systems and resources to accommodate new patterns of service demand based on climate and environmental risks.
- Develop specific contingency plans to guarantee the resilience of infrastructure and supply chains and sufficiently trained and equipped healthcare workers during acute shocks such as extreme weather events and outbreaks.
- Incorporate climate adaptation and risk mitigation measures based on the findings of environmental and climate risk assessments.



APPLY A MULTISECTORAL APPROACH TO HEALTH

► **Increase opportunities for inequality reduction by adopting a One Health approach and focusing on vulnerable populations:** Identify and promote opportunities to enhance the impact of health and climate policies in the most vulnerable populations by collaborating with other sectors through a One Health approach including agriculture, nutrition, water, hygiene and sanitation (WASH), education, employment and social protection.

► **Engage with One Health strategies and stakeholders, or support the creation of a national One Health platform:** Strengthen synergies across national and regional One Health initiatives, fostering collaboration across the health, animal health, and environment sectors.

► **Promote One Health in policy dialogues:** Advocate for the integration of One Health principles in policy discussions, ensuring the inclusion of appropriate performance indicators and conducting joint evaluations to assess the effectiveness of interventions across human, animal, and environmental health.



PROMOTE INNOVATION AND RESEARCH

► **Support the development and update of national One Health research agendas,** based on assessment of vulnerabilities and risks at a local, national, and regional levels and including relevant sectors and disciplines such as human health, animal health, environment, agriculture, WASH, social and behavioural sciences and humanities, etc.

► **Support research** for the prevention, control and eradication of endemic Neglected Tropical Diseases.



STREAMLINE FINANCIAL RESOURCES

- ▶ **Leverage funding** across government ministries, donors, and sectors including human health, animal health, environmental protection, planning, social protection, and emergency response to ensure policy and programmatic coherence.
- ▶ **Promote comprehensive and flexible financing mechanisms** to quickly reallocate resources to respond to the health systems needs created by climate and environmental hazards.



MONITORING AND EVALUATION

- ▶ **Monitor the implementation of national frameworks and actions** aimed at building resilient health systems and improving health outcomes, with a focus on quality of care and inequality reduction.
- ▶ **Promote the harmonisation of data collection systems** and indicator use across sectors and donors to assess the impact of climate and environment and health investments.

HEALTH SYSTEMS



SPECIFICATIONS FOR GREENER AND RESILIENT HEALTH FACILITIES, EQUIPMENT AND OPERATIONS

- ▶ **Review of health facility specifications:**
 - Promote the revision of specifications for health facility location and construction, considering projected climate risks and hazards while minimizing their carbon footprint.
 - Request reporting from environmental impact assessments and health impact assessments to ensure environmental and health considerations are equally addressed in the design of facilities. This can, for example, ensure facility energy sources minimize adverse effects of power cuts e.g. data and digital systems and life-saving equipment, such as ventilators and dialysis machines, lighting for critical services, cold chain maintenance for vaccines, while at the same time promoting bioclimatic design and green facilities where possible.
- ▶ **Use renewable energies:**
 - Ensure reliable and continuous power supply through a balance reliance on renewable energy sources and implement appropriate backup systems to avoid interruptions on power supply and ensure continuity on quality services. Prioritize resilience of power supply for essential healthcare services during extreme weather events.
- ▶ **Promote energy efficiency:**
 - Support the transition to energy-efficient infrastructure and equipment e.g. replace refrigeration and heating equipment with energy-efficient alternatives and climate-friendly refrigeration fluids.
 - Ensure compliance with energy-efficient building codes and WHO's Harmonised Health Facility Assessment for quality standards.
- ▶ **Ensure operational resilience:**
 - Ensure continuity of supply chains and uninterrupted access to essential health commodities by strengthening logistics management information systems for effective inventory management and by building capacity in efficient and sustainable procurement practices.



SOUND ENVIRONMENTAL MANAGEMENT

► Minimise and recycle waste:

- Create or strengthen local recycling and repurposing facilities, to organise their collection, transport and recycling of materials of non-biohazard materials such as batteries, paper, glass, metals and plastic. Support food waste reduction and material repurposing initiatives to reduce excess waste.

► Proper disposal of biohazard and pharmaceutical waste:

- Develop plans for hazardous waste disposal and management in accordance with WHO recommendations with local authorities.
- Minimize the risk of water source contamination and development of antimicrobial resistance through proper industrial waste management practices.

► Use WASH standards:

- Promote WASH standards in healthcare facilities.
- Maintain water distribution systems to maximise efficient water use and prevent contamination from leaks.
- Encourage use of rainwater harvesting as a supplementary water source, while adhering to WASH standards.



CIRCULAR ECONOMY

► Rethink business models for procurement:

- Explore efficient and innovative business models (pooled procurement, advanced market commitments, appropriate stock forecasting and bulk purchasing where appropriate) for service and commodity procurement in the health sector, while ensuring regulatory and quality standards.
- Create leasing arrangements for energy efficient and capital-intensive equipment to reduce financial burdens of green transition in the health sector.
- Establish return programs to facilitate equipment upgrade and refurbishment.
- Consider sustainability criteria in product assessment and procurement decisions, incl. the prioritisation of quality locally manufactured commodities that comply with regulatory approvals as well as infrastructure and machinery with locally accessible maintenance and repair services without requiring servicing from abroad.



HEALTH WORKFORCE CAPACITY

► Develop comprehensive capacity building plans for healthcare workers and laboratory facility personnel, guided by capacity needs assessments that take into account environmental and climate risks and skills related to mitigation and adaptation practice, local disease burden, epidemiological surveillance, and early warning systems.

► Enhance diagnostic and reporting capabilities:

- Strengthen healthcare workforce's ability to diagnose and report emerging diseases, including vector-borne and waterborne diseases.
- Equip healthcare professionals with the knowledge and skills to identify changing infectious disease patterns and respond accordingly.

► **Strengthen professional training:**

- Equip healthcare professionals to ensure the continuation of the treatment of NCDs and injuries during extreme weather events, preventing excess mortality, morbidity the risk of permanent disability.
- Equip healthcare professionals to offer mental health and psychosocial support to vulnerable individuals affected by the effects of climate change resulting in the loss of homes and livelihoods, disruptions on social capital, community and school disruptions, risk of intra-family violence and eco-anxiety.

Figure 2

Operational framework for climate resilient and low carbon health systems



POPULATION



RAISE AWARENESS AND KNOWLEDGE

- ▶ **Raise awareness** at population level of the health implications of environmental and climate risks linked to air, water and soil pollution, wastewater, rising temperatures, deforestation, antimicrobial resistance, etc. Increase knowledge of the public about response options under emergencies.
- ▶ **Promote adapted behavioural change interventions** with a focus on climate change and environmental adaptation and mitigation while improving health outcomes such as: swapping wood and coal for indoor heating or cooking purposes to improve respiratory health and reduced deforestation; improving WASH practices to decrease transmission of water borne illnesses; adapted construction for extreme rain and heat events with environmentally friendly materials.



COMMUNITY ENGAGEMENT

- ▶ **Promote engagement and feedback mechanisms** to support participation, dialogue and information exchange, to empower civil society and community groups to respond to emergencies and to guide future development of disaster monitoring and warning systems.



IMPROVED RISK COMMUNICATION

- ▶ **Strengthen communication mechanisms to engage** decision-makers, the media, community leaders and the population based on a comprehensive understanding of local context and understanding of risk, with a strong emphasis on vulnerable populations.





FURTHER INFORMATION AND SUPPORT

- ▶ European Commission, [Greening EU international cooperation toolbox](https://webgate.ec.europa.eu/fpfis/wikis/spaces/ExactExternalWiki/pages/2297138095/Greening+EU+Cooperation+Toolbox), European Commission – Wikis, 2025, <https://webgate.ec.europa.eu/fpfis/wikis/spaces/ExactExternalWiki/pages/2297138095/Greening+EU+Cooperation+Toolbox>
- ▶ European Commission, [Green Deal Knowledge Hub](https://capacity4dev.europa.eu/groups/public-environment-climate/info/eu-green-deal-knowledge-hub-publications), Capacity4dev, 2023, <https://capacity4dev.europa.eu/groups/public-environment-climate/info/eu-green-deal-knowledge-hub-publications>
- ▶ European Commission, [Quick tips to integrate environment and climate change into sectoral programming](https://capacity4dev.europa.eu/groups/public-environment-climate/info/quick-tips-integrate-environment-and-climate-change-sectoral-programming), Capacity4dev, 2023, <https://capacity4dev.europa.eu/groups/public-environment-climate/info/quick-tips-integrate-environment-and-climate-change-sectoral-programming>
- ▶ World Health Organization, [Health at the heart of national adaptation planning: a global review of national adaptation plans and health national adaptation plans](https://www.who.int/publications/i/item/9789240118447), WHO, 2025, <https://www.who.int/publications/i/item/9789240118447>
- ▶ Climate and Health Alliance, [2023 Healthy NDC scorecard](https://climateandhealthalliance.org/wp-content/uploads/2023/05/Barchart-230503.pdf), CAHA, 2023, <https://climateandhealthalliance.org/wp-content/uploads/2023/05/Barchart-230503.pdf>
- ▶ World Health Organization, [Mental health and climate change: policy brief](https://apps.who.int/iris/handle/10665/354104), WHO, 2022, <https://apps.who.int/iris/handle/10665/354104>
- ▶ World Health Organization, [Quality criteria for health national adaptation plans](https://www.who.int/publications/i/item/9789240018983), WHO, 2021, <https://www.who.int/publications/i/item/9789240018983>
- ▶ World Health Organization, [Climate change and health: vulnerability and adaptation assessment](https://www.who.int/publications/i/item/9789240036383), WHO, 2021, <https://www.who.int/publications/i/item/9789240036383>
- ▶ World Health Organization, [Health in nationally determined contributions \(NDCs\): a WHO review](https://www.who.int/publications/i/item/who-review-health-in-the-ndcs), WHO, 2020, <https://www.who.int/publications/i/item/who-review-health-in-the-ndcs>
- ▶ World Health Organization, [Implementing health emergency and disaster risk management](https://www.who.int/activities/implementing-health-emergency-and-disaster-risk-management), WHO, n.d., <https://www.who.int/activities/implementing-health-emergency-and-disaster-risk-management>
- ▶ World Health Organization, [Health: emergency and disaster risk management framework](https://iris.who.int/handle/10665/326106), WHO, 2019, <https://iris.who.int/handle/10665/326106>
- ▶ World Health Organization, [Lessons learned on health adaptation to climate variability and change: experiences across low- and middle-income countries](https://www.who.int/publications/i/item/9789241564953), WHO, 2015, <https://www.who.int/publications/i/item/9789241564953>
- ▶ World Health Organization, [WHO guidance to protect health from climate change through health adaptation planning](https://www.who.int/publications/i/item/who-guidance-to-protect-health-from-climate-change-through-health-adaptation-planning), WHO, 2014, <https://www.who.int/publications/i/item/who-guidance-to-protect-health-from-climate-change-through-health-adaptation-planning>
- ▶ Food and Agriculture Organization of the United Nations, United Nations Environment Programme, World Health Organization, World Organisation for Animal Health, [One Health joint plan of action \(2022–2026\) – Working together for the health of humans, animals, plants and the environment](https://doi.org/10.4060/cc2289en), FAO, UNEP, WHO, WOA; Rome, 2022, <https://doi.org/10.4060/cc2289en>
- ▶ World Health Organization, World Organisation for Animal Health, and Food and Agriculture Organization of the United Nations, [National Bridging Workshops](https://extranet.who.int/sph/ihr-pvs-bridging-workshop), WHO, WOA, FAO, 2020, <https://extranet.who.int/sph/ihr-pvs-bridging-workshop>
- ▶ Zhang, XX., Liu, JS., Han, LF. et al., [Towards a global One Health index: a potential assessment tool for One Health performance](https://doi.org/10.1186/s40249-022-00979-9), *Infectious Diseases of Poverty*, 11, 57, 2022, <https://doi.org/10.1186/s40249-022-00979-9>
- ▶ World Health Organization, [Tripartite Zoonoses Guide: Operational tools and approaches for zoonotic diseases](https://www.who.int/initiatives/tripartite-zoonosis-guide), WHO, 2019, <https://www.who.int/initiatives/tripartite-zoonosis-guide>
- ▶ World Health Organization, [WHO publishes guidance on climate resilient and environmentally sustainable health care facilities](https://www.who.int/news/item/12-10-2020-who-publishes-guidance-on-climate-resilient-and-environmentally-sustainable-health-care-facilities), WHO, Geneva, 2020, <https://www.who.int/news/item/12-10-2020-who-publishes-guidance-on-climate-resilient-and-environmentally-sustainable-health-care-facilities>

- ▶ World Health Organization, [Harmonized Health Facility Assessment \(HHFA\)](https://www.who.int/data/data-collection-tools/harmonized-health-facility-assessment/introduction), WHO, 2020, <https://www.who.int/data/data-collection-tools/harmonized-health-facility-assessment/introduction>
- ▶ World Health Organization, [Health impact assessment \(HIA\) methods](https://www.who.int/tools/health-impact-assessments), WHO, 2023, <https://www.who.int/tools/health-impact-assessments>
- ▶ Kluge H, Forman R, Muscat N et al. [Environmental sustainability of health systems: time to act](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)00730-4/fulltext), The Lancet, 2023, [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(23\)00730-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(23)00730-4/fulltext)
- ▶ World Health Organization, [Operational framework for building climate resilient health systems](https://www.who.int/publications/i/item/operational-framework-for-building-climate-resilient-health-systems), WHO, Geneva, 2015, <https://www.who.int/publications/i/item/operational-framework-for-building-climate-resilient-health-systems>
- ▶ World Health Organization, [WHO trainings and educational materials on climate change and human health](https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/capacity-building/toolkit-on-climate-change-and-health/trainings), WHO, n.d., <https://www.who.int/teams/environment-climate-change-and-health/climate-change-and-health/capacity-building/toolkit-on-climate-change-and-health/trainings>
- ▶ World Health Organization, [International health regulations](https://www.who.int/health-topics/international-health-regulations), WHO, 2005-2024, <https://www.who.int/health-topics/international-health-regulations>
- ▶ World Health Organization, [Quality criteria for the evaluation of climate-informed early warning systems for infectious diseases](https://www.who.int/publications/i/item/9789240036147), WHO, Geneva, 2021, <https://www.who.int/publications/i/item/9789240036147>
- ▶ World Health Organization, [Climate change and health research: current trends, gaps, and perspectives for the future](https://www.who.int/publications/m/item/climate-change-and-health-research-current-trends-gaps-and-perspectives-for-the-future), WHO, 2021, <https://www.who.int/publications/m/item/climate-change-and-health-research-current-trends-gaps-and-perspectives-for-the-future>
- ▶ World Health Organization, [Protecting health from climate change: Global research priorities](https://www.who.int/publications/i/item/9789241598187), WHO, 2009, <https://www.who.int/publications/i/item/9789241598187>
- ▶ World Health Organization and the United Nations Children's Fund (UNICEF), [Water, sanitation, hygiene, waste and electricity services in health care facilities: progress on the fundamentals](https://www.who.int/publications/i/item/9789240075085), WHO, 2023, <https://www.who.int/publications/i/item/9789240075085>

More documents are available in capacity4dev's public group: [Environment, Climate Change and Green Economy](#)

GREENING EU COOPERATION



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