Global Climate Action
United Nations Climate Change

Marrakech Partnership

CLIMATE ACTION PATHWAY

CLIMATE RESILIENCE *

Vision and Summary

2021

* unedited version

VISION

By 2050 we **all** live in a 1.5-degree warmer world where all regions, countries, cities, businesses communities and individuals

THRIVE

in the face of multiple risks, uncertainty and threats posed by climate change

This vision of climate resilience is to be achieved by climate-risk driven actions around three pillars of the **Race to Resilience** campaign:

> **Urban resilience:** Where cities, industrial communities and informal settlements become healthy, safe and thriving spaces that support resilient livelihoods and allow for green recovery post COVID-19.
>
> **Rural resilience:** Where smallholder farmers, rural entrepreneurs, and industries across food and agriculture supply chains are adaptive, equitable, and are equipped to thrive in the face of climate change whilst protecting nature.
>
> **Coastal resilience:** Where coastal and riverine cities, communities and businesses through increased investment in adaptation and resilience and protection of natural ecosystems safeguard and support those livelihoods and economies.

This climate resilience pathway is structured on five main impact areas across the sectors of the Marrakesh Partnership for Global Climate Action. It puts a **focus on people and nature across different geographies and sectors:**

- **People** are the agents of change equipped with the capacities to prevent, anticipate, absorb and adapt now, and tomorrow, to transform systems for an equitable, low-carbon, resilient and sustainable future. This involves everyone, public, private and community actors, especially women, youth, indigenous peoples and local communities as champions of resilience, and those most at risk and vulnerable, such as poor, marginalized and people living with disabilities. It means helping shape **COVID-19 green, inclusive, risk informed and just recovery investments** to build a low-carbon and resilient future for all with no one left behind.
- **Nature**, with its diversity of terrestrial and marine ecosystems, is the first line of defence against climate change (with its suite of extreme and slow onset events) and other disasters. This means protecting biodiversity and ecosystems, as well as investing at scale in nature-based solutions to ensure the world continues to benefit from ecosystem services, such as nutritious food, clean air, fresh water, fertile soils, and pollination services. Learning lessons from COVID-19, this is paramount if we are to secure resilient and sustainable development within planetary boundaries for human and planetary health and wealth.

This vision recognizes that building climate resilience requires **combining mitigation and adaptation actions** to tackle the current and future impacts of climate change across urban, rural and coastal territories and across sectors such as the agriculture and food systems (MPGCA Land use pathway), water

and natural systems (Land use and water pathways), cities (Human settlement pathways), coastal zones and oceans (Ocean pathway), and infrastructures and services (Industry, Transport and Energy pathways).

CROSS-SYSTEMS TRANSFORMATION SUMMARY

Urgent and coherent climate risk management actions for adaptation and resilience, accompanied by mitigation measures, must be adopted by all public, private and community actors in order to achieve a 1.5-degree resilient world. Only with these mutually supportive actions will a transition to an inclusive, resilient and sustainable world be possible. This is an imperative for the most vulnerable and at risk people, many of whom live in least developed countries and small island developing states.

Action needs to focus on urban, rural and coastal areas and sectors that are most impacted and which are crucial to people's lives, economies and the planet. This includes the agriculture and food sectors, cities, infrastructure and services (energy, industry and transport), water and natural ecosystems, and ocean and coastal systems in line with other thematic sectoral priorities of the Marrakesh Partnership for Global Climate Action-MPGCA.

Today, we have a myriad of interventions, tools, solutions, initiatives and partnerships that are often promoted and implemented as single "magic bullets" to build climate resilience against multiple or single climate risks. For building climate-adapted and resilient societies, we all (public, private and community actors) need a shared narrative on climate resilience driving a systems approach with five main capacities[1] together with a clear taxonomy of climate risk management interventions.

This pathway, along with the MPGCA thematic sector pathways, aims to address this by presenting a common and simple narrative on climate resilience that can drive the political, technical and financial engagement needed to tackle the unfolding climate emergency. This narrative has been developed by the Marrakech Partnership for Global Climate Action's Climate Resilience Network[2] and supports the achievement of the goal of the Race to Resilience campaign to make 4 billion people more resilient by 2030.

Steps to build climate resilience

Building climate resilience involves all actors having the capacity to prevent, anticipate, and absorb climate extremes and slow-onset events (shocks and stresses), as well as adapt and transform development pathways in the longer term. Sectors and actors need to take six steps for building climate resilience across systems:

1. **Raise awareness and advocate** for collective and individual action to tackle the climate emergency – Be clear that the future will not resemble the past; base this on science and examine different scenarios (e.g. 1.5-degrees and higher) and their risks and related impacts across territories and sectors.
2. Carry out **climate risk assessments** at national, local (city/region), sectoral or organizational level and use a systems approach.
3. Develop and **implement appropriate and context specific climate risk management actions.**
4. **Mobilize financial resources** for implementation and climate risk management capacity building

5. **Monitor and track progress** across and within sectors or systems**.**
6. **Learn and share knowledge,** experiences and solutions.

Types of interventions to build climate resilience

Disaster risk reduction and management (including emergency preparedness and response) and climate change adaptation approaches are combined to develop a suite of actions to address climate risks

and impacts across and within systems and related sectors. Those climate risk management actions or measures/tools essential to drive climate resilience efforts and investments by all actors include:

- Climate risk and vulnerability assessments, disclosure and monitoring
- Early warning systems and early or anticipatory action
- Preparedness: contingency plans/emergency response
- Climate risk governance and capacity-building
- Nature-based solutions used to reduce risks across sectors
- Climate-proofing infrastructure and services
- Risk transfer: insurance and social protection
- Sharing of knowledge and best practices on climate risk management
- Volume, quality and access of public and private risk-informed finance

More detailed cross-cutting and sector-specific climate risk management actions needed to build climate resilience across sectors and systems are presented in the separate Climate Resilience Pathway Action Table. Sector-specific risk management interventions are also outlined in the thematic sectoral pathways and the respective action tables for land use (especially food and agriculture); human settlements; energy, industry and transport; ocean and coastal areas; and water. In addition, a cross-cutting finance pathway is available and speaks to actions required to not only finance the system transition but also on how to transition the financial system.

How this climate resilience pathway aligns with other efforts

Led and spearheaded by the Marrakesh Partnership for Global Climate Action (MPGCA) and its members, this climate resilience pathway builds on and aligns with a number of significant efforts since the signing of the Paris Agreement and has been developed by the Climate Resilience Network (facilitated by the Global Resilience Partnership (GRP) and the UN Climate Resilience Initiative (A2R)/ Food and agriculture Organization of the United Nations (FAO).

Furthermore, it responds to the Call to Action: Raising Ambition for Climate Adaptation and Resilience from the 2019 United Nations Climate Action Summit and builds on the work of the Global Commission on Adaptation[3] and the UN Interagency Common Guidance on Resilience.

The pathway takes into account the Global Commission on Adaptation driven outcomes of the United Nations Climate Adaptation Summit in January 2021, and it aims to meet one of the priorities of the Presidency of the Conference of the Parties at its twenty-sixth session (COP 26) to advance action on adaptation and resilience.

It is closely linked to the High Level Champions Race to Resilience (R2R) campaign. This a global campaign to catalyse action by non-state actors (NSA) to build the resilience of 4 billion people from groups and communities who are vulnerable to climate risks. R2R is made up of partner initiatives led by Non State Actors-NSA who have pledged new climate resilience building actions to help deliver the R2R goal. Many of the targets in this pathway are complementary and directly inform and contribute to the R2R goal and vice versa.

MILESTONES TOWARDS 2040

The below table is not exhaustive and is meant to represent examples on how the suit of 9 climate risk management interventions can be used across and between various sectors and actors/initiates to ensure a system wide approach to build a climate resilient future.

Resilience Action Category	By 2025	By 2030	By 2040
1. Climate risk and vulnerability assessments, disclosure and monitoring actions	Ensure governments, together with all actors, as part of their SDG efforts, carry out basic national, subnational and local strategies for risk, vulnerability and capacity mapping and monitoring to build climate resilience across sectors.	All relevant actors have climate risk informed policies, plans, strategies and regulations at all levels and sectors (Action 1 & 4), including early warning systems (EWS) and contingency plans/emergency response plans.	Ensure 4 billion people are more resilient to climate risks.
2. Access to early warning systems and development of early actions.	Put risk-specific EWS in place for 1 billion people in developing countries to identify and take early action on extreme and slow-onset climate events.	All countries have multi climate risk early warning systems in place for identifying and acting early on extreme and slow-onset events.	
3. Preparedness with contingency plans and emergency response	Put heatwave action plans in place in cities to support 1 billion people.	All countries and actors have integrated climate risk and vulnerability into emergency preparedness and response strategies.	100 % of countries have integrated climate risk management actions for critical infrastructure into the implementation of their emergency preparedness, anticipatory action and response strategies at all levels.
4. Establishment of effective governance to manage climate risks accompanied by human and institutional capacity-building	Ensure 50% of the countries integrate climate risk management actions in cross-sectoral and sectoral plans, policies, investments and actions in an inclusive, people-centered manner, especially with women, youth, indigenous peoples and marginal groups.	Full support is provided for the empowerment of women and youth, as well as marginal groups' agency and leadership, by promoting inclusive climate risk sensitive integrated water resources management, especially in dryland areas.	All actors have mainstreamed the suite of climate-risk management actions in their NAPs and sectoral plans, policies, and investments including successors of NDCs and SDGs.

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5. Nature-based solutions used to reduce risks	50% of the countries have incorporated nature-based solutions (NbS) in cross-sectoral and sectoral plans, policies, regulations and investments as well as in the updated 2021 NDCs.	100% of coastal and island countries apply policies and regulations that support marine and climate-friendly marine food value chains for local production, consumption and sustainable trade. 100% of countries apply regulations that support deforestation-free food value chains in forest rich countries.	Ensure at least USD 97 trillion total investment in infrastructure that is climate resilient and that integrates NBS.
6. Climate-proofing of infrastructure and services	75% of building codes for hybrid blue, green, and grey infrastructures related water sectors integrate the main climate risks in a given location, ensuring they are nature-positive, resilient and low-carbon.	Ensure universal and equitable access to safe, affordable and climate-resilient drinking water and sanitation services (SDG 6) for 100% of urban population, especially servicing the most vulnerable populations, including those from informal settlements.	Provide technology and related capacity-building to support the climate-resilience of all critical transport, energy and other infrastructure and system.
7. Risk transfer: insurance and social protection instruments	Provide risk finance and insurance mechanisms to 500 million poor and vulnerable people against disaster and climate shocks. Ensure insurance industry provides USD 5 billion to support risk finance and insurance mechanisms.	100 % of most vulnerable people are covered against climate-related extreme events through climate risk insurance mechanisms in food and agriculture systems and nutrition- and risk- sensitive and shock-responsive social protection mechanisms.	Corporate Boards rigorously ensure the value of climate-related risks and opportunities are taken into account across value chains, and that executive compensation is calibrated accordingly.
8. Sharing of knowledge and best practices on climate risk management	Policies, rules and incentives are in place and have contributed to a shift of 50% of consumption patterns and the production of foods, goods and services towards nature- and climate-friendly and just practices in terms of reducing greenhouse gas (GHG) emissions and climate risks.	Indigenous knowledge, culture, art and practices are 100% integrated with innovation and technology in the suite of knowledge and good practices in climate risk management for building the resilience of the food and agriculture systems.	
9. Increase in the volume, quality and access of public and private finance to invest in resilience.	Ensure the public and private sectors make USD 6 trillion/year available for climate-smart infrastructure.	Invest USD 6.9 trillion/year in low-carbon infrastructure to make all critical assets and infrastructure systems climate-resilient. Issue USD 1 trillion in labelled green bond standards in low- to middle-income countries.	Financial markets, institutions and systems are aligned with a resilient future and ensuring that temperature rise remains limited to 1.5°C. Asset Owners' portfolios are aligned with achieving net zero emissions by the 2040s and with supporting resilience to climate-related impacts.

PROGRESS

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We are not on track to take the actions required to reduce emission, to manage multiple climate risks and impacts and to adapt and transform for building climate resilient societies. This is despite the evidence from reports by the Intergovernmental Panel on Climate Change (IPCC) and the Global Commission on Adaptation, among others. The multiple climate risks and how these affect and threaten different livelihoods and locations are not fully understood by many. Where there is sufficient awareness, there is still insufficient knowledge and finance on what to actually do, resulting in limited action, or at worst inappropriate action.

This is changing as the increasing impact from climate extremes and slow-onset events become more self-evident. This is resulting in an increased focus on building climate resilience and it is urgent to build on this momentum to accelerate a common understanding, innovations and investments into climate risk management actions across systems and territories.

It also means accelerating support and engagement with rural, urban and coastal communities at the front line of climate change impacts and risks. Climate change often affects the most vulnerable, including more than 880 million people living in informal settlements, where opportunities are few and access to basic services and finance is scarce to non-existent. The 2.5 billion smallholders with agriculture-based livelihoods which provide more than 50 percent of our global food supply are also on the frontline of climate change.

The potential of youth, women and indigenous people and their needs, especially those in poverty, tend to go unrecognized, leaving them increasingly vulnerable and further behind educationally, economically and politically. They need to become the engines of adaptation and resilience across sectors. Scaling up investments in building capacities of local communities to enable them to lead the implementation of climate risk management actions is an urgent imperative.

CLIMATE RESILIENCE AND COVID-19 PANDEMIC

Climate change is an existential threat to humans and the entire planet, through its suite of increasing extreme events (mainly drought, floods and storms) and accelerating stresses such as sea-level rise, variability of seasonal weather patterns, etc., but also as a risk driver of other disasters and crisis, such as the global COVID-19 pandemic, biodiversity loss, and pollution crisis[4].

Climate change, like COVID-19, touches everyone and everywhere. Both are global emergencies and the COVID-19 pandemic magnifies underlying systemic problems, including ineffective environmental and climate policies, social and economic inequalities, and weak healthcare systems[5] (de Paula and Willetts 2021). It has revealed the fragility of our social, economic and environmental systems with poor comprehensive risk management capacities. Today, we are still not equipped to manage multiple risks across all sectors. COVID-19 has exacerbated existing shocks and stresses, including those resulting from climate change. For example, in 2020, Bangladesh, Fiji and India all battled strong cyclonic storms whilst coping with COVID-19. The International Federation of Red Cross and Red Crescent Societies (IFRC) estimates at least 51.6 million people are doubly hit by climate-related disasters (floods, droughts and storms) and the COVID-19 pandemic.

The pandemic has also augmented stresses which communities have suffered, threatening to erode many of the development gains of past decades. To cope with this disruption, we are seeing many examples of community networks self-organizing to combat the spread of the virus and support the most vulnerable within their communities. This spontaneous, self-organizing community resilience is proving to be a crucial element in navigating this public health crisis which bring important lessons for the unfolding climate emergency in advancing people-centred actions to build climate resilience.

The COVID-19 crisis is a strong wake-up call to take urgent action to tackle the climate crisis, both in keeping global warming to 1.5 degrees and to urgently build resilience for the people and the planet. The pandemic should be used to help pave the way for a Green Recovery, or in other words to reshape the USD trillions needed in low carbon, nature positive and climate resilient investments across and within sectors.

FACTS & FIGURES

The world's climate is changing. The 2017 Atlantic hurricane season was the most devastating and costliest on record. In 2018, unprecedented cyclones hit Mozambique. In 2019, Chile storms flooded the Atacama,[4] Hurricane Dorian wreaked havoc in the Bahamas, European heatwaves were hottest on record with 1,500 deaths in France,[5] and in India, 9 million people in Chennai faced severe water shortages from drought.[6] In early 2020, temperatures of more than 20 degrees Celsius were recorded for the first time in the Antarctic, and the Arctic summer ended with very little sea ice.[7] Wild fires in California were the worst on record. Severe hurricanes and cyclones continued to hit many countries from Bangladesh (Cyclone Amphan) and Philippines (Typhoon Goni) to Hurricane Eta in the Caribbean. 2021 continued to see extreme and unprecedented events, including: record-breaking heat wave in Canada with temperatures going up to 49.6C; deadly tornado that swept through Czech Republic in June, and unanticipated level of precipitation and floods in Germany and Belgium in July resulting in hundreds dead and severe infrastructure damages, These facts, and the compelling scientific evidence[6] of the growing impacts from climate change across all sectors, mean that business-as-usual is no longer an option for any country, city, community, individual, business or financial institution.

Without climate change adaptation and resilience actions, coupled with mitigation measures, the impacts of climate change are predicted to:

- Impact 80 per cent of the world's poorest who will be living in fragile contexts by 2030,[8] and put an extra 100 million people at risk of being pushed into extreme poverty by 2030, and 720 million by 2050.[9]
- Reduce agriculture yields by up to 30 per cent by 2050, affecting smallholder farmers the most,[10] and increase food prices by 20 per cent for billions of low-income people, further accelerating the rise of both chronic and acute hunger and malnutrition in all its forms. [11]
- Increase the number of people who lack sufficient water[12] from 3.6 billion today to 5.0 billion by 2050.[13]
- Force hundreds of millions of people in coastal cities to move away from their homes, with a total cost to coastal urban areas of more than USD 1 trillion each year by 2050.[14]

- Raise sea level by 2.5 meters as a result of melting Antarctic ice – even if the Paris climate goals are met.[15]
- Increase the cost of climate-related disasters to a total of USD 2.7 trillion over the next 20 years, even though the cost of making infrastructure resilient is about 3 per cent of this.[16]
- 1.3 billion additional people could be exposed to severe heat stress and 800 million additional people could be living in urban areas under severe water stress. In addition, 400 million people could be exposed to severe riverine or coastal flooding, which may breach existing defenses in place today[23].

Yet with a suite of risk management actions, a just and resilient transition is possible, and it is estimated that:

- Investing USD 1.8 trillion in adaptation and resilience from 2020 to 2030 can generate USD 7.1 trillion in total global net benefits.[17]
- Implementing effective climate risk management actions would result in a 90 per cent decrease in people needing international humanitarian assistance by 2050 following climate-related disasters.[13]
- Thirty per cent of greenhouse gas emissions can be avoided by making food and agriculture systems more resilient and sustainable,[18] including reducing food loss and waste (which are accountable for about 8 per cent of global emissions).[19]
- A transformation to healthier diets and sustainable food systems can reduce emissions, avert up to 11 million deaths per annum, lift 820 million people from undernourishment and 680 million people from obesity – avoiding USD 4.5 trillion per annum in costs from this double burden.[20]

STRUCTURE OF CLIMATE RESILIENCE PATHWAY ACTION TABLE

The Climate Resilience Pathway is structured around delivering the overall vision in urban, rural and coastal areas around three dimensions: resilient people and livelihoods; resilient businesses and economies; and resilient environmental systems. Under this, **five main impact areas** or outcomes have been identified that require immediate action to put climate risk at the heart of all decision-making with increased availability and quality of finance invested in a range of risk management interventions. This framing is shown below and is further illustrated by the accompanying Climate Resilience Pathways Action Table across and for each of the five impact areas.

* unedited version

NOTES AND REFERENCES

[1] See UN Common Guidance on Resilience (2021 in press) and its essential preventive, anticipative, adaptive, absorptive and transformative capacities for managing multiple risks across systems.

[2] *The Climate Resilience Network (CRN):* The CRN is an informal group of organizations and institutions working around a common agenda and narrative focused on building resilience to climate risks. The network acts as a platform for information exchange and collaboration around key issues and to help organize coherent and complementary policy events on climate resilience. Through our multi-stakeholder partnership, we have successfully organized and convened global events to advocate and discuss climate resilience as a cross-cutting theme of the Marrakesh Partnership for Global Climate Action. The CRN network comprises over 70 public and private sector partners with a diverse geographical spread and expertise. We have been able to draw on the strength of this diversity to ensure interactive meeting formats, in-depth discussions across disciplines, and inclusive representation to sustain ambition on climate action even in the context of COVID-19.

[3] Adapt Now: A Global Call for Leadership on Climate Resilience. 2019. Global Commission on Adaptation.

[4] UNEP Making Peace With Nature report. Available here: https://www.unep.org/resources/making-peace-nature

[5]de Paula N., and Willetts E. 2021. COVID-19 and Planetary Health: How a Pandemic Could Pave the Way for a Green Recovery. International Institute for Sustainable Development. Available at: https://www.iisd.org/articles/covid-19-and-planetary-health-how-pandemic-could-pave-way-green-recovery

[6] <https://www.aljazeera.com/news/2019/02/flooding-landslides-kill-peru-chile-190209085435131.html>.

[6] <https://www.aljazeera.com/news/2019/02/flooding-land

slides-kill-peru-chile-190209085435131.html>.

e9-bec9-fdcab53d6959>.

[9] Journal Nature. 2020. Anders Levermann, Postdam Institute for Climate Impact Research- Learning about Antarctica. <https://www.theguardian.com/environment/2020/sep/23/melting-antarctic-ice-will-raise-sea-level-by-25-metres-even-if-paris-climate-goals-are-met-study-finds>.

[10] Organisation for Economic Co-Operation and Development. 2018, States of Fragility 2018, OECD Publishing, Paris.

[11] Hallegatte, S., Bangalore, M., Bonzanigo, L., Fay, M., Kane, T., Narloch, U., Rozenberg, J., Treguer, D., Vogt-Schilb, A. 2015. Shock Waves: Managing the Impacts of Climate Change on Poverty, World Bank Climate Change and Development Series, World Bank Group.

[12]Porter et al. 2014. "Food Security and Food Production Systems." World Bank. 2013. Turn Down the Heat: Climate Extremes, Regional Impacts, and the Case for Resilience. Washington, DC.

[13] Nelson, C.C., et al. 2014. "Climate Change Effects on Agriculture: Economic Responses to Biophysical Shocks." Proceedings of the National Academy of Sciences of the United States of America 111: 3274–3279.

[14] Defined as being without water for at least one month per year.

[15] United Nations World Water Development Report 2018: Nature-Based Solutions for Water.

[16]Hallegatte, S., Green, C., Nicholls, R.J., and Corfee-Morlot, J. 2013. "Future Flood Losses in Major Coastal Cities." Nature Climate Change 3(9): 802–806.

[17] Journal Nature. 2020. Anders Levermann, Postdam Institute for Climate Impact Research- Learning about Antarctica. <https://www.theguardian.com/environment/2020/sep/23/melting-antarctic-ice-will-raise-sea-level-by-25-metres-even-if-paris-climate-goals-are-met-study-finds>.

[18]Global Commission on Adaptation. 2019. Adapt Now: A Global Call for Leadership on Climate Resilience.

[19] Global Commission on Adaptation. 2019. Adapt Now: A Global Call for Leadership on Climate Resilience. [13]
IFRC. 2019. Cost of Doing Nothing: The Humanitarian price of climate change and how it can be avoided.

[20] IPCC. 2019. Special Report on Climate Change and Land.

[21] Food and Agriculture Organization of the United Nations. 2017. Save Food for A Better Climate: Converting the food loss and waste challenge into climate action.

[22] EAT Lancet Commission on Food, Planet, Health. 2018. Healthy Diets from Sustainable Food Systems: Food Planet Health.

[23] Race to Resilience. Analytics Executive Summary. 2021.