

Climate Change 2022

Impacts, Adaptation and Vulnerability

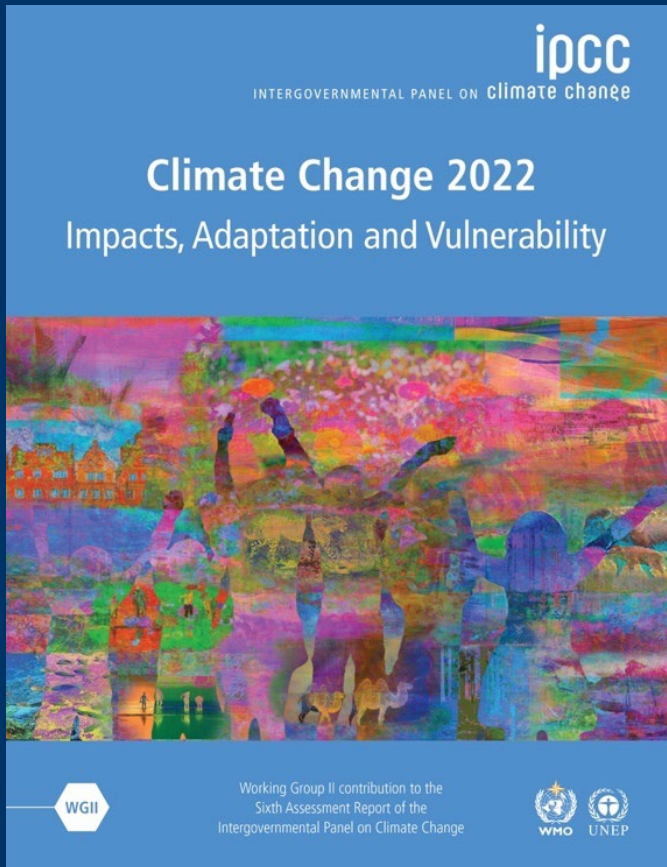
Michelle Mycoo, Coordinating Lead Author Ch.15

V International Conference FOR THE WORLD BALANCE

January 26th, 2023



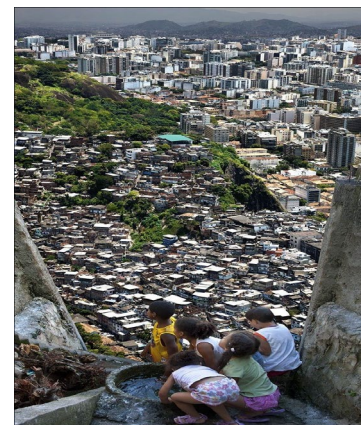
Key Message WGII Report:



“The scientific evidence is unequivocal: climate change is a threat to human well-being and the health of the planet. Any further delay in concerted global action will miss the brief, rapidly closing window to secure a livable future. This report offers solutions to the world.

Urgent action is critical

- **Our immediate future:** The impacts and risks we face today will increase substantially over the **next two decades**.
- Some people will be more affected than others. Those least able to cope are already the hardest hit.
- Achieving ‘zero hunger’ and ‘water for all’ jeopardised; increased risks in coastal cities; more people facing health risks and extreme poverty; intolerable conditions for many species and ecosystems.





The challenges we face are driven by us

Our future climate depends on what we do, how we live our lives, and how we safeguard nature, starting now, and involving everyone.

- The way we use land, our over-consumption of natural resources, our unhealthy diets, the way we plan our cities... These increase threats and make us more vulnerable to climate change.

Human Settlements and Key Infrastructure

- Globally, climate-driven impacts in combination with rapid urbanisation and lack of climate-sensitive planning, is increasing the vulnerability of marginalised urban populations and key infrastructure to climate change.
- Coastal settlements with high inequality, for example a high proportion of informal settlements, as well as deltaic cities prone to land subsidence and small island states are highly vulnerable.
- Globally, population change in low-lying cities and settlements will lead to approximately a billion people projected to be at risk from coastal-specific climate hazards in the mid-term under all scenarios, including in Small Islands.



Human Settlements and Key Infrastructure

- The population at risk in coastal cities and settlements from a 100-year coastal flood increases by approx. 20% if the global mean sea level rises by 0.15 m relative to current levels.
- Sea level rise poses an existential threat for some Small Islands and some low-lying coasts.
- Costs for maintenance and reconstruction of urban infrastructure, including building, transportation, and energy will increase with global warming level.



Adaptation

Without current adaptation efforts, the impacts today would have been substantially worse, but we are not adapting fast enough to keep pace with accelerating climate change.

- Typically, adaptation has been small-scale and sector-specific.
- Some adaptation has been inadequate (maladaptation).
- Sensitive species and ecosystems and people on lower incomes are being disproportionately affected by a lack of adaptation.
- Climate finance promised by developed countries has fallen short.
- With increased warming, adaptation limits will be reached.



Adaptation options

Nature offers significant untapped potential, not only to reduce climate risks, and deal with its causes, but also to improve peoples' lives and livelihoods.

Regional and Sectoral Actions

There are actions we can take in every region and in every sector to adapt (to reduce the escalating climate risks).

- We can reduce risks from floods and droughts, strengthen health systems, improve food security and make the energy sector more resilient.
- Actors, including individuals and households, communities, governments, private-sector businesses, non-governmental organisations, Indigenous Peoples, religious groups and social movements, at many scales and in many sectors, are adapting already and can take stronger adaptation and mitigation actions



The potential offered by climate-resilient and sustainable development

- Successful adaptation requires urgent, more ambitious and accelerated action and deep cuts in greenhouse gas emissions.
- Incremental adaptation is insufficient; only transformational change will secure a liveable future.

Through this transformative approach we can deal with:

- the hazards we face from climate change,
- limit warming,
- stop biodiversity loss,
- reduce overall consumption,
- ensure sustainable production and, at the same time,
- reduce poverty, hunger, malnutrition, improve health and livelihoods and provide more people with affordable clean energy and clean water.

Rapid transformation

- The rapid transformation required to achieve climate resilient and sustainable development involves fundamental changes to how society functions.
- It requires inclusive debate and decision-making, collective action, accountability and trust in government.
- A focus on equity and justice, adequate funding and partnership working leads to better outcomes.



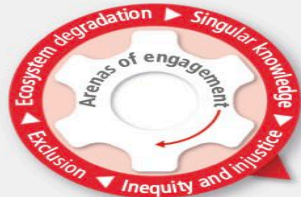
There is a rapidly narrowing window of opportunity to enable climate resilient development

(a) Societal choices about adaptation, mitigation and sustainable development made in arenas of engagement

Dimensions that enable actions towards higher climate resilient development

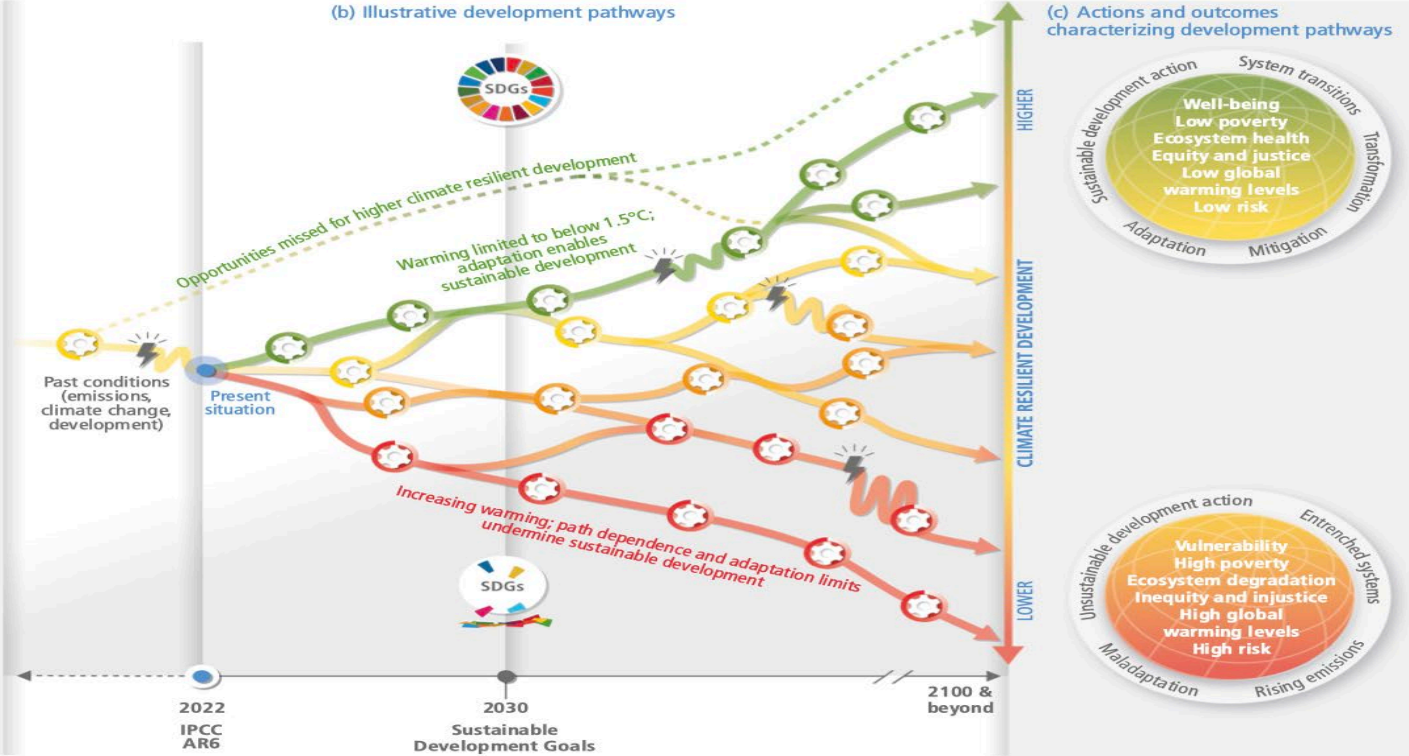


Arenas of engagement:
Community
Socio-cultural
Political
Ecological
Knowledge + technology
Economic + financial



Dimensions that result in actions towards lower climate resilient development

(b) Illustrative development pathways



Narrowing window of opportunity for higher CRD

(c) Actions and outcomes characterizing development pathways



Illustrative climatic or non-climatic shock, e.g. COVID-19, drought or floods, that disrupts the development pathway

Choices and Opportunities

- The choices we make now about how we develop can open up a range of opportunities to create a safer, fairer world for all.
- There is a time-limited opportunity to achieve climate-resilient and sustainable development.
- Shifting to renewable energy has multiple benefits and climate-compatible transformation is possible in industry.



“

To avoid mounting losses, urgent action is required to adapt to climate change.

At the same time, it is essential to make rapid, deep cuts in greenhouse gas emissions to keep the maximum number of adaptation options open.



Taking action now is the best chance we have to survive and thrive

Many potentially effective ways are still open to us:

- To reduce climate risk,
- Tackle the many injustices experienced today and
- Rebuild our relationship with nature.

The longer we wait, the fewer options remain

THANK YOU

Professor Michelle Mycoo

Department of Geomatics Engineering and Land Management

The University of the West Indies, St. Augustine, Trinidad and Tobago

Michelle.Mycoo@sta.uwi.edu

For More Information:

 www.ipcc.ch

 IPCC Secretariat: ipcc-sec@wmo.int

IPCC Press Office: ipcc-media@wmo.int

Follow Us:

 /  @IPCC

 @IPCC_CH @DrCCGua

 [linkedin.com/company/ipcc](https://www.linkedin.com/company/ipcc)