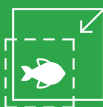


CLIMATE CHANGE 2022

HOW TO SECURE A LIVEABLE FUTURE FOR ALL SUMMARY FOR ALL



This document is not an IPCC product, has not been subject to formal IPCC review processes and has not been endorsed by the IPCC.

The Science is Clear:

Climate change is a threat to human well-being and the health of the planet. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future for all.

Key message of the Working Group II report in the Sixth IPCC Assessment Cycle (AR6), published in February 2022

Dear Reader,

Climate change is one of many challenges human society is facing. But the good news is: We still have options to decide what our future should look like by tackling the multiple challenges at the same time. Here we are talking about crises such as climate change, biodiversity loss, extreme poverty and others.

Implementing solutions is possible but not easy because we have to juggle many different tasks and interests in parallel. These challenges concern the more than 8 billion people that are living on planet Earth now as well as future generations.

A way to do this is described in our Working Group II report. There, our authors develop a roadmap, a solution framework, for a climate resilient, low carbon and sustainable future, based on the latest scientific knowledge and literature. In this 'Summary for All', we introduce you to the concept of "**Climate Resilient Development**". We explain how all of us can act to pursue it, which barriers are waiting along the way and how to overcome them.

While following us on that journey, there will be many new ideas, concepts, and values you will get to know. Becoming familiar with these new concepts is important because the science is clear: If we want to secure a liveable future for all on this planet, we need effective strategies to limit climate change as much as we can, adapt to the changes we cannot prevent, fight inequity and injustice, while caring for and strengthening nature.

Collectively, we have already missed many opportunities to get on the track toward a climate resilient future. We must act now as there is only little time left to do this because the remaining number of options is shrinking with every increment of additional global warming.

Sincerely,

Your Working Group II team of the Sixth IPCC Assessment Cycle

Time for Action

A ROAD MAP TOWARDS SUSTAINABILITY AND CLIMATE RESILIENCE

1 Our world is experiencing multiple crises

We know that climate change is already affecting nature, people, economies and infrastructure around the world. These impacts and risks will increase with every increment of global warming. Reducing those risks is complicated by over-consumption, population growth, rapid urbanisation, deforestation, land degradation, pollution, biodiversity loss, poverty, inequity and a very recent pandemic. In summary: Our world is facing a long list of complex and interacting challenges which cannot be dealt with in isolation.

2 Nature, climate, people: interconnections we cannot ignore

While searching for options to solve these crises, we cannot ignore the close interlinkages between climate, nature and people, and the various ways they affect and support each other. If we look at the current situation more closely, we see a clear imbalance in these interactions.

Human actions result in emissions of greenhouse gases which cause global warming and climate change. At the same time, we are polluting, overexploiting and destroying vast areas of land, freshwater and ocean ecosystems. This weakens the ability of these ecosystems to regulate climate and provide food, clean water, cooling and other services that human life

depends upon. Without healthy and functioning ecosystems, human societies have fewer options to adapt to a changing climate. In addition, nature under pressure has a decreased capacity to withstand weather and climate extremes such as heat, storms, sea level rise, or acidification and oxygen loss in the ocean waters.

The degradation of ecosystems, including that from further warming, can release carbon dioxide and other greenhouse gases, and thus further escalate climate change and its impacts. This gives rise to a vicious cycle that increases current and future risks for people and nature and prevents us from reaching Sustainable Development Goals such as "zero hunger", "no poverty" or "sustainable cities and communities".



The **Sustainable Development Goals** are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The 17 Goals are interconnected and were adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals. *Source: United Nations*



"The content of this publication has not been approved by the United Nations and does not reflect the views of the United Nations or its officials or Member States".

Learn more about the SDGs here: www.un.org/sustainabledevelopment

Time for Action

A ROAD MAP TOWARDS SUSTAINABILITY AND CLIMATE RESILIENCE

3 Breaking the vicious cycle

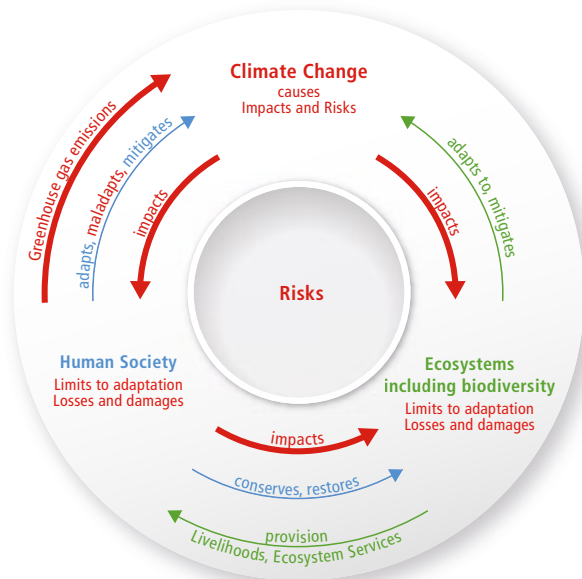
Understanding the interdependencies between climate, nature and people, enables us to break the vicious cycle that escalates climate change and its impacts and to re-balance the system. When we stop looking at the individual parts in isolation and start thinking of the whole picture – treating climate, people and nature as interdependent

building blocks of life on Earth – we will be better able to reduce global warming and climate risks, and improve the resilience of human societies and nature.

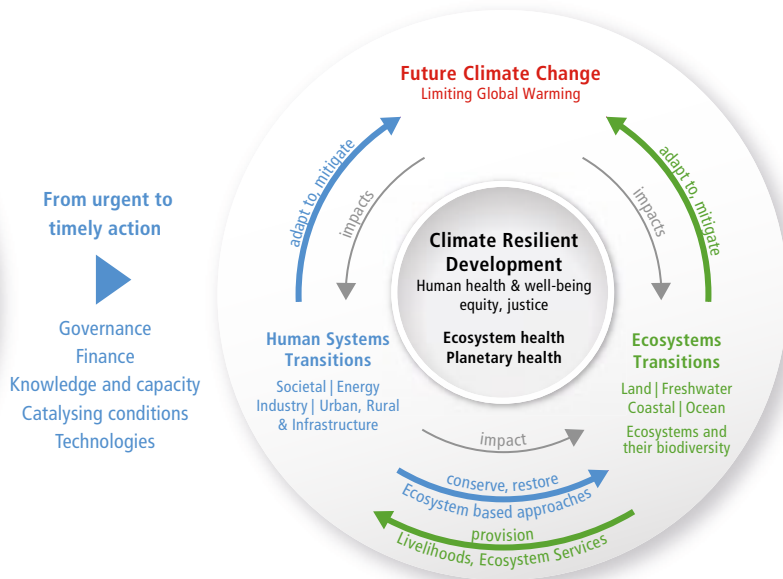
Both the urgency and the complexity of the climate change crisis require actions at ambitions and scales not seen before. Our report provides a solutions framework that combines strategies to deal with climate risks (adaptation) and actions to

reduce greenhouse gas emissions (mitigation). If implemented in a socially just and equitable manner, these actions will result in improvements for nature's and people's well-being. For example, by reducing poverty and hunger, by improving health and livelihoods, by providing more people with clean energy and water, and by safeguarding ecosystems on land, in lakes and rivers and in the ocean. This solution framework is called Climate Resilient Development.

Main interactions and trends



Options to reduce climate risks and establish resilience



Human impacts on nature and climate have caused a disbalance between the three interdependent systems. But knowing these interdependencies also offers us options to re-balance the connections and secure a sustainable, climate resilient future for all.

Nature's Contributions

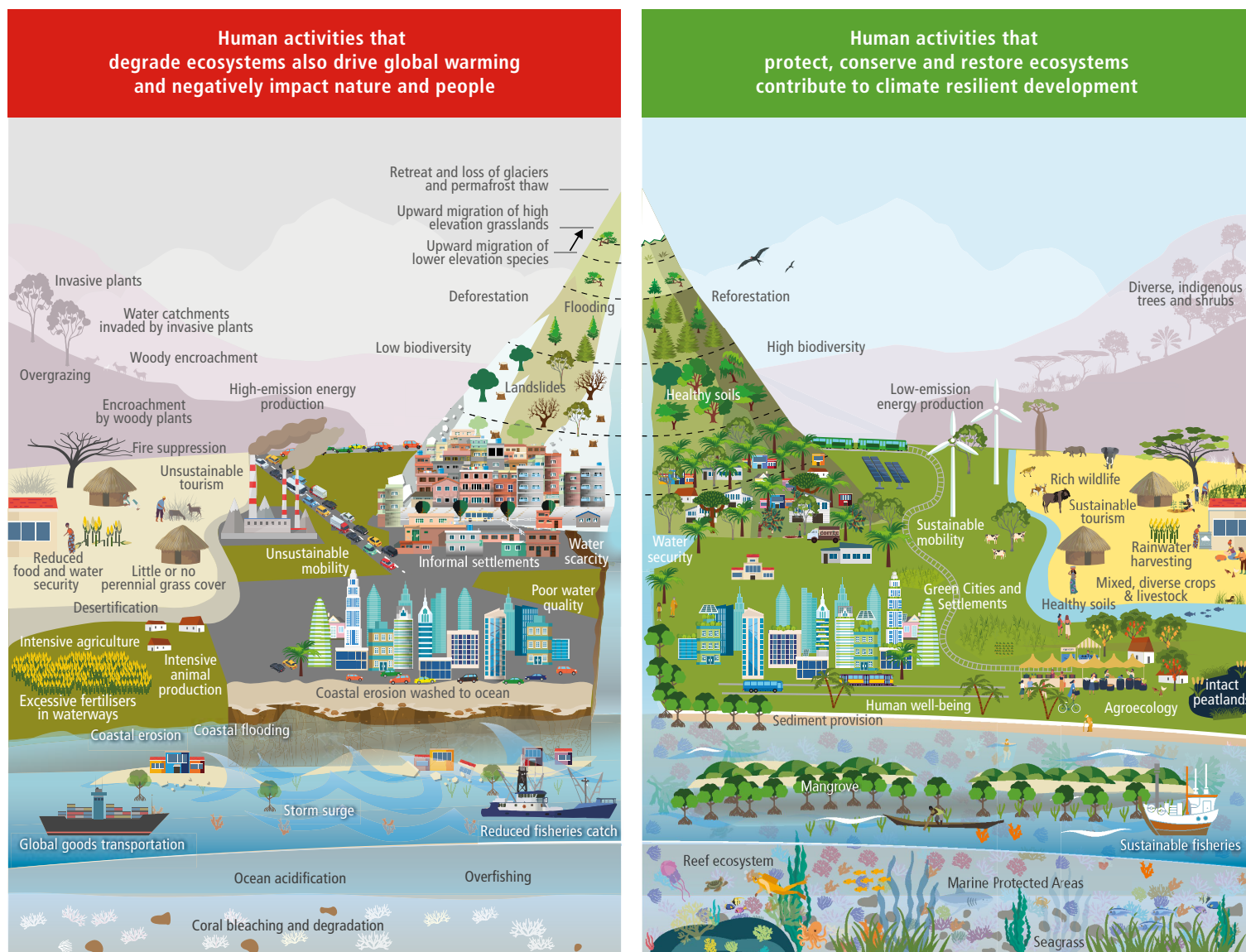
HEALTHY PLANET, HEALTHY PEOPLE

Ecosystem health influences prospects for Climate Resilient Development

Nature offers significant untapped potential, not only to reduce climate risks and deal with the causes of climate change but also to improve people's lives and livelihoods. Intact and healthy ecosystems are a requirement for Climate Resilient Development. This figure illustrates

how restoring, conserving and strengthening nature can help us secure a liveable future for all. But we have to be aware that ecosystem-based climate actions will gradually become less effective and have clear limits where they cease to work

as warming continues. Therefore, ecosystem-based actions alone are not the ultimate fix. They cannot prevent all changes, and should not be regarded as a substitute for reductions in greenhouse gas emissions but rather as part of the solution package.



The Concept

WHAT IS CLIMATE RESILIENT DEVELOPMENT AND HOW CAN IT BE ACHIEVED?

1 Highest priority for socially just climate action

Striving for Climate Resilient Development means prioritising the reduction of greenhouse gas emissions and climate risk, as well as strengthening biodiversity conservation and social justice in everyday decision-making and policies in all aspects of society. These include energy, industry, health, water, food, urban development, housing, transport and efforts to reduce poverty. Climate Resilient Development is about successfully navigating the complex interactions between these different areas, so that action in one

area does not have adverse effects elsewhere, and opportunities are harnessed to accelerate progress toward a safer, fairer world for all.

2 Each decision counts

Climate Resilient Development isn't achieved with a single decision or action. It is the result of all of the choices we make about emission reductions, limiting climate risk and sustainable development on a daily basis. New scientific evidence shows that addressing the risks and impacts of climate

change successfully involves a more diverse set of actors than previously thought – not just policy-makers, but everyone in government, civil society and the private sector. For example, if we consider changes in agriculture, it takes a combination of effective government policy and regulation and informed daily decisions by farmers, traders and agricultural companies, to lead to the fundamental changes required to adapt to a changing climate, reduce greenhouse gas emissions and secure lives and livelihoods of those directly involved with benefits for wider society.

Striving for Climate Resilient Development means prioritising the reduction of greenhouse gas emissions and climate risks, as well as strengthening biodiversity conservation and social justice in everyday decision-making and policies in all aspects of society.



Photo by Stéphane Bellerose/UNDP in Mauritius and Seychelles. CC BY-NC 2.0

The Concept

WHAT IS CLIMATE RESILIENT DEVELOPMENT AND HOW CAN IT BE ACHIEVED?

3 Finding solutions involves everyone

Climate Resilient Development involves everyone in just and fair ways. The prospects for effective action improve when governments at all levels work with citizens, civil society, educational bodies and scientific institutions, the media, investors and businesses, among others. Furthermore, forming partnerships with traditionally marginalised and vulnerable groups is required. They include women, youth, Indigenous Peoples, local communities and ethnic minorities. In such a societal setting, scientific understanding, Indigenous knowledge, local knowledge and practical knowhow can come together to provide more relevant, effective actions. In addition, different interests, values and worldviews can be reconciled if everyone works together.

4 Striving for new values and worldviews

Pursuing a climate resilient, sustainable world involves fundamental changes to how society functions, including changes to underlying values, worldviews, ideologies, social structures, political and economic systems, and power relationships. This may feel overwhelming at first, but the world is changing and will continue to do so. Climate Resilient Development offers us ways to drive change, in a way that improves well-being for all – by reducing climate risk, tackling the many inequities and injustices experienced historically and today, and rebuilding our relationship with nature.



Photo by Bart Verweij / World Bank. CC BY-NC-ND 2.0

The term **Indigenous knowledge** refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings. For many Indigenous Peoples, Indigenous knowledge informs decision-making about fundamental aspects of life, from day-to-day activities to longer-term actions. This knowledge is integral to cultural complexes, which also encompass language, systems of classification, resource use practices, social interactions, values, rituals and spirituality. These distinct ways of knowing are important facets of the world's cultural diversity.

The term **local knowledge** comprises the understandings and skills developed by individuals and populations, specific to the places where they live. It also informs decision-making about fundamental aspects of life, from day-to-day activities to longer-term actions. Local knowledge is a key element of the social and cultural systems which influence observations of and responses to climate change. It also informs governance decisions.

The Concept

WHAT IS CLIMATE RESILIENT DEVELOPMENT AND HOW CAN IT BE ACHIEVED?

5 More urgent than previously thought

The choices we make in the next decade will determine our future. Our report clearly shows that achieving Climate Resilient Development is already challenging at a warming level of less than

1.5°C, and will become increasingly difficult at 2°C, due to the limits reached by nature and people in their abilities to adapt (see *Summary for All: How to adapt to a changing climate*). In some regions, Climate Resilient Development will become impossible if the

temperature exceeds 2°C, including in low-lying coastal cities, settlements and Small Islands, the high mountains and polar regions. This means that worldwide action to achieve a climate resilient, sustainable world is more urgent than we thought a decade ago.

The current decade is critical to charting Climate Resilient Development pathways that catalyse the transformation of prevailing development practices and offer the greatest promise and potential for human well-being and planetary health.



Photo by Aulia Erlangga/CIFOR-ICRAF

Enablers

THE BUILDING BLOCKS OF CLIMATE RESILIENT DEVELOPMENT

Each country has different capacities and opportunities for Climate Resilient Development. Furthermore, it is very likely that each country will follow its own path since there is no single pathway for Climate Resilient Development. Rather, there are multiple intertwining pathways that depend on factors such as the political, cultural and economic contexts of different communities and nations. Nevertheless, our report clearly identifies a list of conditions that enable individual and collective actions that will lead society toward a sustainable, low carbon, climate resilient future.

1 Inclusive governance

Prospects for transformation towards Climate Resilient Development increase when key governance actors work together in fair, inclusive and constructive ways. This requires equitable and inclusive decision making and planning, which means getting all societal groups involved, especially the most vulnerable groups to climate change such as women and children in low-income households, Indigenous Peoples and other minority groups. To facilitate inclusive governance, existing institutions must become more open and flexible.

Key questions to ask: Which actors benefit, fail to benefit, or are directly harmed by different types of interventions? Which actors are involved in the decision-making process?

2 Diverse knowledges and values

More effective, feasible and socially acceptable solutions are found when decision-making draws on scientific understanding, Indigenous knowledge, local knowledge and practical know-how, and also diverse values and partnerships. To put it simply: Different interests, values and worldviews can be reconciled if everyone works together.

Key questions to ask: Does the project or process we are working on really consider all available sources of knowledge and which worldviews or values dominate our way of thinking? Do these need to change?

3 Finance and innovation

Climate Resilient Development is enabled by increased international cooperation including knowledge and technology transfer and rapidly scaled-up investments in adaptation and emissions reductions – in particular in vulnerable regions and for vulnerable sectors and groups. Current global financial flows are insufficient to reduce climate risks and accelerate sustainable development, especially in developing countries.

Key question to ask: How can the money, expertise and technologies be made available as and when needed, especially by local stakeholders, to implement emissions reduction and risk reduction strategies successfully?



Photo by Marlon del Aguila Guerrero/CIFOR. CC BY-NC-ND 2.0

Enablers

THE BUILDING BLOCKS OF CLIMATE RESILIENT DEVELOPMENT

4 Integration across sectors and time scales

The overarching goals of emissions reductions, adaptation to climate change and sustainable development will be most effectively addressed when actors coordinate their actions, processes and structures among multiple levels of jurisdiction and decision-making. This coordination is also needed within and between institutions, regions and sectors. In addition, these governance practices should be tailored to local circumstances and take into account gender equality.

Key questions to ask: What would an effective climate action network look like? Which strategies and actors need to be combined and cooperate to build the foundation for Climate Resilient Development in our region, nation and globally?

5 Ecosystem stewardship

Ecosystem stewardship combines the aspired effective conservation of 30 to 50% of Earth's land, freshwater and ocean areas with measures to sustainably manage the rest of the planet. This is crucial because planetary health is essential for human and societal health and Climate Resilient Development. To put this into context: Right now, less than 15% of land, 21% of freshwater systems and 8% of the ocean are protected globally. Current stewardship is often insufficient to prevent damage or increase resilience against climate change.

Key questions to ask: How do our climate action strategies support nature conservation and restoration? Are their contributions sufficient?

6 Synergies between climate and development actions

Climate actions, both adaptation to reduce climate risks and reducing greenhouse gas emissions, are grounded in local realities. Understanding how these actions will affect people and nature is critical to ensure that they do not worsen existing inequities within society but rather foster a fairer, climate resilient and more sustainable life for all.

Key question to ask: Which actions reduce emissions and/or climate risks, and at the same time help us to make our community a fairer, healthier, and better place for all to live in?

7 Behavioural change supported by policy, infrastructure and socio-cultural factors

Changes in lifestyle, human behaviour and preferences can have a significant impact on adaptation implementation, demand, and hence, greenhouse gas emissions, and decision-making around climate action. However, peoples' willingness to change is greater if supported by fair policies, laws, institutions and infrastructure as well as new worldviews and shifts in public opinion.

Key question to ask: Which policies, infrastructures and other conditions are needed to encourage behavioural change in our community?

Conditions that constrain Climate Resilient Development

Pursuing Climate Resilient Development is a challenge because there are many barriers to overcome. Our report concludes that progress toward a secure and liveable future for all is most constrained by:

- Poverty, inequity and injustice
- Economic, institutional, social and capacity barriers
- Isolated or sectoral responses (focusing solely on nature, climate or people, while ignoring their interdependencies)
- Lack of finance and barriers to finance and technology
- Trade-offs with the Sustainable Development Goals

Overcoming these barriers requires a large set of actions: first and foremost, the political commitment for large institutional and legal reforms, as well as increased international cooperation in finance, technology and knowledge sharing.

THE CHOICES WE MAKE TODAY

Climate Resilient Development is the process of implementing greenhouse gas mitigation and adaptation measures to support sustainable development. This figure describes how pathways toward Climate Resilient Development are the result of cumulative societal choices and actions within multiple arenas. These choices, which are made continuously, shift global development pathways

towards higher (green) or lower (red) Climate Resilient Development. Past emissions, climate change and development have already eliminated some development pathways towards higher Climate Resilient Development (dashed green line). Higher Climate Resilient Development is characterised by outcomes that advance sustainable development for all. Climate Resilient Development is progressively harder

to achieve with global warming levels beyond 1.5°C. Inadequate progress towards the Sustainable Development Goals (SDGs) by 2030 reduces Climate Resilient Development prospects. There is a narrowing window of opportunity to shift pathways towards more Climate Resilient Development futures as reflected by adaptation limits and increasing climate risks.



What We Do Now Will Determine Our Future

THE CHOICES WE MAKE TODAY

The choices we make now and during the next decade will determine our future. We hope that this document has helped you to understand our big message: Every choice and every decision matters because each one can take us away from, or towards, a climate resilient, sustainable world.

Looking back, we have already missed many opportunities to get on a track toward higher Climate Resilient Development. One of the most relevant findings of our

report underlines the increasing urgency of rapid climate actions:

We know now that Climate Resilient Development is already challenging at current global warming levels. The prospects will become very limited if global warming exceeds 1.5°C. Climate Resilient Development will not be possible in some regions, including low-lying coasts, coastal cities and settlements, Small Islands, deserts, mountains and polar regions, especially if warming exceeds 2°C.

To summarise:

We are running out of time. The science is clear. Any further delay in concerted global action will miss a brief and rapidly closing window to secure a liveable future for us all. The IPCC reports offer solutions to the world. Now it is up to us to choose the most effective and socially appropriate ones and implement them.

Every choice and every decision matters because each one can take us away from, or towards, a climate resilient, sustainable world.



Photo by Unsplash.com/@DuyPham

Learn More

WHERE TO FIND MORE FACTS AND FIGURES FROM THE WORKING GROUP II REPORT

Our full Working Group II report on Climate Change Impacts, Adaptation and Vulnerability is almost 3,100 pages long and contains 18 chapters and 7 cross-chapter papers, which is a lot to read. To make its findings more accessible, IPCC authors and other organizations have provided various summary and derivative products, which you can download from our report's website. There you will find, for instance →

- Our 15 Working Group II Fact Sheets [\[download here\]](#)
- Our compiled FAQs and their answers from the report's chapters [\[download here\]](#)
- Our six overarching FAQs and their answers [\[download here\]](#)
- A selection of derivative products that summarise our report's key findings on climate change and nature, climate change and health, and climate change impacts and adaptation in Africa [\[download here\]](#)
- Three Summaries for All: How is Climate Change Impacting Life on Earth, How to Adapt to a Changing Climate, and How to Secure a Liveable Future for All [\[download here\]](#)

The full report as well as its individual chapters and official summary products such as the Technical Summary or the Summary for Policymakers can be found [here](#).



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This summary is based on the work of Working Group II Authors, who devoted their knowledge, expertise and time to the production of the WGII Contribution to the Sixth Assessment Report.

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