



United Nations  
Educational, Scientific and  
Cultural Organization



Sustainable  
Development  
Goals

# Changing Minds, **not** the Climate

# UNESCO and Climate Change

Changing Minds,

not the  
Climate

Education, science, culture,  
communication and information  
for sustainable development

Climate action is essential for transformative sustainable development. It is also a major opportunity to leverage desirable social transformations that will favour social inclusion and justice as well as safeguard the climatic and ecological systems on which we depend. It is high time to redirect our technology, science, finance and ingenuity to transform our economies, ensure equality and promote a sustainable future for all, including young people, women, indigenous peoples and ethnic minorities. This requires leadership from governments, international organizations, the private sector and civil society, as well as the active involvement of the most affected groups.

In 2015, the international community made a historic agreement on climate change in Paris during COP21 of the United Nations Framework Convention on Climate Change (UNFCCC). That same year governments adopted a global post-2015 sustainable development agenda with a whole new set of Sustainable Development Goals (SDGs). For UNESCO, the COP21 Paris Climate Agreement and the 2030 Agenda for Sustainable Development lead down to the same path and are considered as one and the same agenda. Climate change mitigation and adaptation require a holistic and long-term approach to be truly sustainable. In 2015, the world set a new milestone and committed collectively to a global action in order to achieve the future we want.

UNESCO's contributions to rethinking sustainability globally include a wide range of actions under our mandate reflecting the multifaceted nature of climate challenges and associated mitigation and adaptation solutions. Undertaken in synergy with the overall UN system, UNESCO's climate change actions are developed and implemented through its different sectors, field offices, designated sites, category 1 and 2 centres, UNESCO Chairs and networks, with the purpose of providing Member States with climate-related knowledge, data and information services and policy advice to enable a shift in mindsets towards enhanced sustainability. This includes efforts to help improve the engagement and role of youth and women, as well as understanding of social dimensions, including gender equality issues related to climate change policies and actions.



# Climate **Knowledge**, Science and Culture

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UNESCO promotes continuous strengthening of the interdisciplinary climate change knowledge base, including through generation and use of sound and unbiased data, information and early warning through climate change research, assessments and monitoring. This is being integrated with UNESCO

capacities in natural and social sciences, culture, education, and communication and information to improve the resilience of Member States to climate change through national and local climate mitigation, adaptation and risk management policies based on science, local and indigenous knowledge, and ecological and sociocultural systems.

Through its International Hydrological Programme (IHP), International Geoscience Programme (IGCP), Man and the Biosphere (MAB) Programme, Intergovernmental Oceanographic Commission (IOC), Management of Social Transformations Programme (MOST), Local and Indigenous Knowledge Systems Programme (LINKS) and the Communication and Information Sector, UNESCO provides data and climate information services notably on water security, earth sciences, renewable energy, biodiversity and the ocean.

Through its work on culture, UNESCO recognizes and promotes the importance of cultural knowledge and diversity, with cultural heritage and diversity as crucial drivers for the societal transformation and resilience needed in order to respond to climate change and promote sustainable development.

## Climate Change **Education** and Public Awareness

Education and awareness-raising enable informed decision-making, play an essential role in increasing adaptation and mitigation capacities of communities, and empower women and men to adopt sustainable lifestyles.

Climate change education is part of UNESCO's Education for Sustainable Development (ESD) programme. In 2014 UNESCO launched the Global Action Programme (GAP) on ESD, the official follow-up to the UN Decade of ESD, with climate change as a critical thematic focus. Through the UN Alliance on Climate Change Education, Training and Public Awareness, UNESCO supports and guides countries to meet commitments under the Paris Agreement and UNFCCC Article 6 on education.

UNESCO supports schools, including UNESCO Associated schools (ASPnet) and training institutions to implement climate change education through a 'whole-school approach'. Dedicated teaching and learning resources, such as *Climate Change in the classroom: UNESCO course for secondary teachers on climate change education for*

*sustainable development* and many other climate change education resources are freely available on UNESCO's Clearinghouse on ESD.

Through the provision of capacity-building for journalists and broadcast media on climate change, UNESCO enhances public awareness on climate change, and of what countries and communities can do to adapt. This also aids reporting on what governments and companies do, or do not do, to respond to these threats. An example is *Climate Change in Africa: A Guidebook for Journalists*.



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# Gender Equality and Climate Change

Women are important agents of change, as they hold significant knowledge and skills related to mitigation, adaptation and risk reduction related to climate change. Women also experience climate change differently from men, they are often on the front lines of natural disasters and gender discrimination at all levels. While the link between gender equality and climate change is often not obvious, it is omnipresent and needs to be addressed in order to implement the recently established SDGs. Gender equality has been a global priority at UNESCO since 2008 and remains so today. UNESCO is committed to collecting sex-disaggregated data and mainstreaming gender in all its programmes and initiatives.

UNESCO is also committed to increasing the number of women working in climate science. This includes UNESCO support to education programmes to stimulate young girls and women to choose a career in sciences, technology, engineering and mathematics (STEM Education), to break barriers in women's access to science, to fully use the potential of our young and future generations. UNESCO believes that harnessing women's talents in the sciences has the capacity to write the next chapter of the scientific revolution we need to fight climate change and foster sustainable development.



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# Climate Change and Water Security

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regions to identify adaptation responses and reduce the impact of droughts and floods. It supports the development of web applications to monitor rain precipitation and shrinking glaciers. It advances sustainable groundwater management, considering climate change and linked human effects. Current activities include applying satellite data for evaluating groundwater resource storage changes in regions where data access is limited.

Climate change will reduce freshwater resources and lead to intensified competition for them. UNESCO's International Hydrological Programme (IHP) promotes scientific cooperation to assess and monitor changes in water resources and raise awareness of policy-makers on related risks.

IHP develops and implements tools and methodologies in water-stressed and vulnerable

The International Initiative on Water Quality (IIWQ) facilitates scientific and policy discussions on climate change impacts on the world's water resources. IHP coordinates production of the *UN World Water Development Report*, which assesses the state of the world's freshwater resources and provides tools to promote its sustainable use. IHP also coordinates with the Megacities Alliance for Water and Climate.

# SIDS and Climate Change

Increased beach erosion, coastal inundation, coral bleaching, stress on coral reefs; and increased extreme events are impacting small island developing States (SIDS). In view of this extreme vulnerability to climate change, UNESCO places high priority on providing multidisciplinary support to SIDS in all areas of its expertise. The special focus on SIDS is reflected in the UNESCO SIDS Action Plan, approved by Member States in April 2016 and represents UNESCO's contribution to the implementation of the SIDS Accelerated Modalities of Action [S.A.M.O.A.] Pathway.

Combining education and a unique action-oriented MAST (Measure, Analyse, Share and Take action) approach, UNESCO's Sandwatch provides coastal communities with the resources to understand the past and prepare for the future. Through Integrated Coastal Area Management (ICAM) and water resources governance, UNESCO integrates resilience into coastal area planning and management, and develops policy and institutional guidelines that improve groundwater governance in SIDS.



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# The Ocean and Climate Change

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The importance of the ocean to global climate cannot be underestimated. It absorbs a significant part of carbon and an overwhelming portion of the planet's excess heat. Warmer atmosphere and increasing concentration of greenhouse gases nevertheless exert enormous pressure on the ocean's ability to regulate the climate. The IOC of UNESCO facilitates the development of ocean sciences, observations and capacity-building to monitor the ocean's role in the climate system and predict ocean changes. Laying

the ground for efficient adaptation and mitigation strategies, IOC focuses on the most damaging impacts, e.g. ocean acidification and temperature increase, sea-level rise, deoxygenation, variations in storminess and changes in marine biodiversity.

IOC's scientifically-founded services help countries, in particular coastal and small island developing states become more resilient to climate change. IOC was instrumental in launching the Ocean and Climate Platform that helps the oceanographic community inform UNFCCC-related debates on the vital interaction between climate and ocean.

IOC is at the forefront of new research priorities on climate change impacts on the ocean, climate change mitigation through the conservation and restoration of coastal and marine ecosystems such as mangroves and salt marshes – the so-called 'blue carbon' – and the overall contribution of the ocean to achieving the SDGs on conserving the ocean and combatting climate change.

## Biodiversity and Climate Change

UNESCO's Man and the Biosphere (MAB) Programme spearheads interdisciplinary work on ecosystem services, and conservation and sustainable use of biodiversity such as in forests, that are of great importance for the global climate. Combining natural and social sciences, economics and education with a view to improving human livelihoods and safeguarding natural and managed ecosystems, MAB contributes to climate change mitigation and adaptation by promoting integrated, multidisciplinary, participatory approaches within and among biosphere reserves. Its World Network of Biosphere Reserves – 669 sites in 120 countries – covers a broad spectrum of ecosystems, from remote mountains to tropical forests, deserts,



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farmland and urban areas. This provides a uniquely rich network of sites as platforms for promoting synergies among biodiversity, climate change and sustainable development agendas.

## Climate Change and Ethics

Climate change is a complex problem that impacts all of humanity and at its core is an ethical issue. Many countries seek to address climate change to achieve the most impact without undercutting other cherished values.

UNESCO's World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) has advised UNESCO Member States on climate change and ethics since 2003. As a result of its work, three reports offer principled guidance to Member States. COMEST's most recent report, 'Ethical Principles for Climate Change: Adaptation and Mitigation' (UNESCO, 2015), may serve today as a starting point for further reflection in efforts to implement the Paris Agreement.

UNESCO Member States have further resolved that the UNESCO General Conference adopt a



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Declaration on ethical principles relating to climate change by 2017. By defining and clarifying both general and global ethical principles in this area, UNESCO can reinforce the principles undergirding Paris Agreement commitments to help governments design, select and communicate the most appropriate and equitable measures to address climate change.



# UNESCO Designated Sites: A Climate Change Observatory

The iconic UNESCO-designated World Heritage sites, Biosphere Reserves and Global Geoparks provide useful platforms to apply and test climate

monitoring, mitigation and adaptation, and to raise awareness on climate change impacts on human societies, cultural diversity, biodiversity, ecosystem services, and the world's natural and cultural heritage. Spread across different regions, climates and ecosystems around the world, climate change is already being felt in many UNESCO-designated sites. Communities there are working on innovative ways to address climate change. Besides its impacts on biodiversity and natural heritage, climate change also affects the world's cultural heritage, eroding archaeological remains and historical buildings both on land and underwater. Climate change can cause other social and cultural impacts – communities are changing the way they live, work, worship and socialize in buildings, sites and landscapes. They could also migrate, abandoning their built heritage and losing their intangible cultural heritage. As climate change observatories, many UNESCO-designated sites also contribute to mitigation solutions including by promoting green economies and the sustainable use of renewable energy sources.

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## Africa and Climate Change

Africa is one of the most vulnerable continents to climate variability and change, with negative impacts on food and water security, human health and ecosystems. UNESCO therefore gives high priority to Member States in Africa in support of their mitigation and adaptation actions. This is done primarily through UNESCO's extensive network of field offices spread across the continent, in close cooperation with the African Union. The African Union has formulated a Climate Change Strategy with a special focus on the most affected countries in Africa. UNESCO has a long history of cooperation with Africa, and together with gender equality, Africa is a UNESCO Global Priority with focus placed on building peace through inclusive, peaceful and resilient societies, and institutional capacities for sustainable development and poverty eradication.

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## List of programmes, networks and initiatives that UNESCO and its IOC lead, or participate in, that are active on climate change:

Adaptation Climate and Coastal Change in West Africa – ACCC-WAfrica	International Geoscience Programme – IGCP
Adaptation Climate Change in Africa – ACC Africa	International Group for Marine Ecological Time Series – IGMETS
African Drought Monitor	International Initiative on Water Quality – IIWQ
BiosphereSmart Initiative	International Ocean Carbon Coordination Project – IOCCP
Blue Carbon Initiative	International Sediment Initiative – ISI
Climate Change and ecosystems, coral reefs – GCRMN	Joint IOC-WMO Technical Commission for Oceanography and Marine Meteorology – JCOMM
Climate Change and ecosystem dynamics – GLOBEC	Local and Indigenous Knowledge Systems Programme – LINKS
Climate Change and World Heritage	Man and the Biosphere Programme – MAB
Climate Frontlines	Management of Social Transformations Programme – MOST
Food, Energy, Environment and Water Network – FE2W	Ocean & Climate Platform
Future Earth	Ocean Biogeographic Information System – OBIS
Gender Equality and Disaster Risk Reduction	Ocean Observations Panel for Climate – OOPC
Global Action Programme on ESD (Education for Sustainable Development) – GAP	PreventionWeb
Global Climate Observing System – GCOS	Renewable Energy Futures for UNESCO Sites Initiative – Renforus
Global Earth Observing System of Systems – GEOSS	SANDWATCH: Adapting to climate change and educating for sustainable development
Global Framework for Climate Services – GFCS	Small Island Developing States
Global Geoparks Network – GGN	Sustaining Arctic Observing Networks
Global Ocean Acidification Observing Network – GOAON	UN Alliance on Climate Change Education, Training and Public Awareness
Global Ocean Oxygen Network – GO2NE	UNFCCC Nairobi Work Programme – NWP
Global Ocean Ship Based Hydrographic Investigations Programme – GO-SHIP	Water and Development Information for Arid Lands – a Global Network – G-WADI
Global Problem of Harmful Algal Blooms – GlobalHAB	World Climate Research Programme – WCRP
Global Programme of Research on Climate Change Vulnerability, Impacts and Adaptation – Provia	World Heritage Centre – WHC
Global Sea Level Observing System – GLOSS	World Network of Biosphere Reserves – WNBR
Groundwater Resources Assessment under the Pressures of Humanity and Climate Change – GRAPHIC	World Network of Island and Coastal Biosphere Reserves
International Drought Initiative – IDI	World Water Assessment Programme – WWAP
International Flood Initiative – IFI	
Initiative for Women Marine Scientists	



# UNESCO and the United Nations Framework Convention on Climate Change (UNFCCC)

The UN Framework Convention on Climate Change (UNFCCC) entered into force in 1994 with the objective to 'stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system'. UNESCO, together with the overall UN system, is aligned with and supportive of the UNFCCC and its Secretariat. The 197 Parties to the UNFCCC (196 States and the European Union) meet every year in Conferences of the Parties (COP) to assess progress under the convention and to reach agreements on related actions. Over the years, the COPs have reached a number of agreements. At its 21st session (COP21) in 2015, the parties adopted the Paris Agreement aimed at limiting global temperature rise to less than two degrees Celsius, and to pursue efforts to limit the rise to 1.5 degrees. In their deliberations, Parties to the UNFCCC take into account assessments of the Intergovernmental Panel on Climate Change (IPCC), which is the international body established to evaluate the science related to climate change. The IPCC works by assessing published literature, including UNESCO publications.

Through the UNESCO for COP (U4C) Partnership Initiative, UNESCO offers UNFCCC COP host countries access to UNESCO's uniquely multidisciplinary expertise and outreach in climate change education, science, culture and communication. From Lima, Peru (COP20), to Paris, France (COP21) and to Marrakech, Morocco (COP22) and beyond, U4C targets the mobilization and engagement of the scientific, educational, media, and private sector communities, as well as the public at large, for enhanced climate change awareness and action in the lead-up to, during and in the follow-up to UNFCCC COPs. Modalities for U4C support include mobilization of UNESCO field offices, UNESCO institutes, centres, Chairs and Associated Schools and scientific networks (IHP, MAB, IOC, MOST, IGCP), as well as UNESCO-designated sites (Biosphere Reserves, World Heritage Sites and Global Geoparks). As part of the overall United Nations system, UNESCO's observer presence at the COPs is intended to provide information and technical resources about its work on climate change, within its areas of expertise. The UNESCO pavilion in the civil society area of the COP venues provides an opportunity to engage with different stakeholders to collectively address climate change.



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