



United Nations  
Educational, Scientific and  
Cultural Organization

# UNESCO, Climate Change and COP 21

# UNESCO, Climate Change and COP 21 Paris, France – 2015

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, and indigenous 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.

This year, the international community will have a historic opportunity to reach a global agreement on climate change and to adopt a new post-2015 sustainable development agenda with a set of sustainable development goals. Climate change mitigation and adaptation require a holistic and long-term approach to be truly sustainable. 2015 is therefore the time for global action in order to achieve the future we want.

UNESCO's contributions to rethinking sustainability globally include a wide range of projects. Grouped under five main themes covered by our mandate, our actions reflect 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 and affiliated sites, Category I and II Centres, UNESCO Chairs and Networks.

## Climate Knowledge, Science and Culture



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UNESCO promotes the continuous strengthening of the interdisciplinary climate change knowledge base of high relevance to climate change mitigation and adaptation, including generation and use of sound and unbiased data, information and early warning through climate change research (climate science), 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), and the Communication and Information Sector, UNESCO provides valuable data, information and tools on key areas of concern and related opportunities for climate change mitigation and adaptation, notably on

water resources, earth sciences, renewable energy, biodiversity and the ocean. Examples include actions to foster enhanced use of information and communication technologies and improved monitoring and modelling to predict and deal with floods and droughts, and the production of the United Nations World Water Development Report.

Energy, like water, is at the heart of the climate change mitigation and sustainable development agenda. UNESCO promotes the increased use of renewable sources of energy that offer win-win solutions by increasing energy access while reducing greenhouse gas emissions. We do this through contributing to capacity-building for enhanced knowledge of sustainable energy technologies and by promoting and disseminating good application practices in different environments and socio-economic contexts.

In the area of biodiversity and climate change, the MAB Programme is spearheading interdisciplinary work on ecosystem services, and the protection and sustainable use of biodiversity, such as forests, of great importance for the global climate.

UNESCO helps 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. 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.

### Gender Equality and Climate Change

Women are important agents of change, and they hold significant knowledge and skills related to mitigation, adaptation and the reduction of risks in relation to climate change. Women also experience climate change differently from men, and gender inequalities worsen their coping capacity for dealing with the impacts of climate change. While linking climate change, sustainable development and gender equality is a challenge, it is one that needs to be addressed to achieve the sustainable development goals set for 2015 and beyond. Through its Priority Gender Equality Policy, UNESCO is committed to integrating a gender equality perspective in all its programmes and initiatives, including (but not limited to) the UN World Water Assessment Programme, Disaster Risk Reduction programmes and the Initiative for Women Marine Scientists. UNESCO is also committed to increasing the number of women working in climate science.



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## Climate Change Education and Public Awareness



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Education and awareness-raising play an essential role in increasing the climate change adaptation and mitigation capacities of communities by enabling individuals to make informed decisions. Education helps learners understand the causes and consequences of climate change, prepares them to live with the impacts of climate change, and empowers women and men to adopt more sustainable lifestyles. As part of its work on Education for Sustainable Development, UNESCO supports countries to integrate climate change into their education systems, and facilitates dialogue and exchange of experiences on climate change education through organizing international expert meetings. It mobilizes schools to implement climate change education through a whole-school approach

whereby sustainability principles are also integrated into the management of school facilities and the governance structures of learning institutions. It develops technical guidance material and teaching and learning resources, such as a six-day online course, 'Climate Change in the classroom: UNESCO course for secondary teachers on climate change education for sustainable development'. UNESCO's clearinghouse on climate change education provides stakeholders with free access to hundreds of climate change education resources.

Through the provision of capacity-building for journalists and broadcast media on climate change, UNESCO is assisting Member States to enhance public awareness and understanding of the cause and effects of climate change, and of what countries and communities can do to adapt to the impacts ahead. This work 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*. Together with thirteen other UN agencies, UNESCO promotes climate change education and public awareness at high-level events such as the annual UNFCCC-COPs through the UN Alliance on Climate Change Education, Training and Public Awareness.

## Climate Change and Water Security



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The Synthesis Report of the Intergovernmental Panel on Climate Change (IPCC) *Fifth Assessment Report* clearly stated that climate change over the twenty-first century is projected to reduce renewable surface water and groundwater resources significantly in most dry subtropical regions, intensifying competition for water among sectors. In many regions, changing precipitation or melting perennial snow and ice are altering hydrological systems, affecting the quantity and quality of water resources. The IHP has been providing a platform for scientific networking in order to contribute to

the assessment and monitoring of changes in snow, glaciers and water resources as a result of climate change and climate variability. The platform also aims at raising the awareness of policy-makers at the national, regional and international level on the predictions and risks related to these changes.

The IHP-coordinated project 'Addressing Water Security: Climate Impacts and Adaptation Responses in Africa, the Americas, Asia and Europe' launched in 2015 is focusing on vulnerability assessments to identify adaptation responses based on the case studies from different regions. The project aims at implementing activities focusing on developing adaptation strategies in order to contribute to water security impacted by climate change. It is targeted particularly at vulnerable regions such as mountains, and arid and semi-arid regions. IHP is implementing a drought-monitoring system in Africa and Latin America and the Caribbean, which is a key step forward in building capacity through technology and knowledge transfer, and has the potential to reduce the impact of droughts.

The IHP also deals with urban water needs and it coordinates Groundwater Resources Assessment under the Pressures of Humanity and Climate Change Network (GRAPHIC), which aims at promoting and advancing sustainable groundwater management considering projected climate change and linked human effects. Future activities include

applying innovative tools (such as satellite data from NASA's Gravity Recovery and Climate Experiment, GRACE, mission) for evaluating groundwater resource storage changes in regions where data access is very limited because of either data scarcity or accessibility problems (as a result of geography or conflicts).

## SIDS and Climate Change

In Small Island Developing States (SIDS) almost all of the anticipated climate change projections result in negative impacts for the island ecosystems and residents. A few examples are rising sea levels resulting in increased beach erosion and coastal inundation; rising sea surface temperatures and increased frequency of coral bleaching; increasing ocean acidification and stress on coral reefs; and more extreme events resulting in increased damage to people's livelihoods, the environment and economy. In view of this extreme vulnerability to climate change, which should be considered combined with their other unique challenges such as their small populations, limited resources, remoteness and economic susceptibility, UNESCO places high priority on providing multidisciplinary support to SIDS in all of its areas of expertise: education, culture, natural sciences, social sciences, communication and information. While it is necessary to increase the level of understanding about climate change among island residents, it is also important to combine this with positive actions in which people can engage to address climate change. The Sandwatch Programme has much to offer with its focus on education for sustainable development and action-oriented MAST (Measure, Analyse, Share and Take action) approach. It provides the necessary background to understand the past and prepare for the future at the local level.



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## The Ocean and Climate Change



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The importance of the ocean to global climate cannot be underestimated. Ocean absorbs a significant part of carbon and an overwhelming portion of the excess heat. Also, the ocean is the largest and one of the most important life support systems on this planet. However, warmer atmosphere and increasing concentration of greenhouse gases, pollution from land, overfishing, unsustainable coastal development and population activities, all exert an enormous pressure on the world's ocean, its coasts and marine ecosystems.

The IOC of UNESCO facilitates the development of ocean sciences, observations and capacity-building to monitor the ocean's major role in the climate system and predict ocean changes. It lays the ground for the design of efficient climate adaptation and

mitigation strategies. IOC focuses on the most damaging impacts, such as ocean acidification and temperature increase, resulting in coral bleaching, sea-level rise, deoxygenation, variations in storminess and changes in marine biodiversity.

The scientifically-founded services promoted by IOC help Member States to become more resilient to present and future climate impacts. Partnerships are key in this respect. IOC was instrumental in launching the Ocean and Climate Platform that now unites more than 50 ocean stakeholders of different nature and helps the oceanographic community to inform COP21-related debates on the vital interaction between climate and ocean. Indeed, climate change also means ocean change. Climate negotiations addressing both adaptation and mitigation should not overlook ocean-related solutions. In this context, IOC is at the forefront of formulation of new research priorities linked to 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 overall contribution of the ocean to sustainable development through the transition to a 'blue economy'.

## UNESCO Sites: A Climate Change Observatory



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The impacts of climate change are already being felt at UNESCO-designated World Heritage sites and Biosphere Reserves and in the UNESCO-supported Global Geoparks. Communities in these sites are working to find innovative ways to adapt to the changes and to reduce their impact. Besides its impacts on biodiversity and natural heritage, climate change also variously affects the world's cultural heritage, eroding archaeological remains and historical buildings, on land as well as under water. Climate change may further cause other social and cultural impacts, with communities changing the way they live, work, worship and socialize in buildings, sites and landscapes, and possibly migrating, abandoning their built heritage and losing their intangible cultural heritage.

Spread across different regions, climates and ecosystems around the world, UNESCO sites serve as global field observatories for climate change, where information on the impacts of climate change can be gathered and disseminated. Studies are currently being conducted at several sites, and the results are used to plan tailored adaptation and mitigation measures. The iconic value of these sites means they also serve as a useful platform to share information on applied and tested monitoring, mitigation and adaptation processes, and to raise awareness on the impacts of climate change on human societies and cultural diversity, biodiversity and ecosystem services, and the world's natural and cultural heritage. UNESCO supports its Member States in these efforts, including in building the capacity to design sustainable development options, responding to the new kinds of conservation challenge posed by climate change, developing innovative policy, tailoring management strategies, and recognizing the value of resilient protected area systems that help safeguard the global environment and human societies from the threats posed by climate change.

## Africa and Climate Change

The IPCC has concluded that Africa is one of the most vulnerable continents to climate change and climate variability, with negative impacts notably on food and water security, human health, ecosystems and low-lying coastal communities. UNESCO therefore gives high priority to providing assistance to Member States in Africa in support of their mitigation and adaptation actions, in the overall context of promoting poverty reduction and sustainable development. This is done primarily through UNESCO's extensive network of Field Offices spread out across the continent and in close cooperation with the African Union. The African Union has formulated a Climate Change Strategy which addresses adaption and mitigation measures, 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 Global UNESCO Priority under which focus is placed on building peace by building inclusive, peaceful and resilient societies, and building institutional capacities for sustainable development and poverty eradication.



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## Climate-Neutral UNESCO

UNESCO, together with the overall UN System, is committed to climate neutrality in its global operations by 2020. This involves three key steps: to estimate the Organization's greenhouse gas emissions in a way that is consistent with accepted

international standards; to undertake efforts to reduce greenhouse gas emissions; and to analyse the cost implications and explore budgetary modalities of purchasing carbon offsets to eventually reach climate neutrality.



**List of Programmes, Networks and Initiatives**  
that UNESCO and its IOC lead, or participate in,  
that are active on Climate Change:

Adaptation Climate Change in Africa – ACC Africa	International Ocean Carbon Coordination Project – IOCCP
Adaptation Climate and Coastal Change in West Africa – ACCC-WAfrica	International Sediment Initiative – ISI
African Drought Monitor	Joint IOC-WMO Technical Commission for Oceanography and Marine Meteorology – JCOMM
BiosphereSmart Initiative	Local and Indigenous Knowledge Systems Programme – LINKS
Blue Carbon Initiative	Man and the Biosphere Programme – MAB
Climate Change and ecosystems, coral reefs – GCRMN	Management of Social Transformations Programme – MOST
Climate Change and ecosystem dynamics – GLOBEC	Ocean Acidification
Climate Change and World Heritage	Ocean & Climate 2015 Platform
Climate Frontlines	Ocean Biogeographic Information System – OBIS
Food, Energy, Environment and Water Network – FE2W	Ocean Observations Panel for Climate – OOPC
Future Earth	PreventionWeb
Gender Equality and Disaster Risk Reduction	Renewable Energy Futures for UNESCO Sites Initiative – Renforus
Global Action Programme on ESD (Education for Sustainable Development) – GAP	SANDWATCH: Adapting to climate change and educating for sustainable development
Global Climate Observing System – GCOS	Small Island Developing States
Global Earth Observing System of Systems – GEOSS	Sustaining Arctic Observing Networks
Global Framework for Climate Services – GFCS	UN Alliance on Climate Change Education, Training and Public Awareness
Global Geoparks Network – GGN	UNFCCC Nairobi Work Programme – NWP
Global Ocean Acidification Observing Network – GOA-ON	Water and Development Information for Arid Lands – a Global Network – G-WADI
Global Ocean Ship Based Hydrographic Investigations Programme – GO-SHIP	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
Initiative for Women Marine Scientists	World Water Assessment Programme – WWAP
International Drought Initiative – IDI	
International Flood Initiative – IFI	
International Geoscience Programme – IGCP	

**UNESCO, UNFCC and COP21**

The Twenty-first session of the Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC), to be held in Paris from 30 November to 11 December 2015, aims at reaching a universal, legally binding agreement that will enable us to combat climate change effectively and to keep the rise in global temperature below 2 degrees Celsius by boosting the transition towards resilient, low-carbon societies and economies. UNESCO cooperates closely with the overall UN system in support of the Parties and the Secretariat of the UNFCCC in these efforts.

UNESCO is organizing and hosting a large number of events and initiatives leading up to and during COP21, several of which are being held in cooperation with France as the host country of COP21. These include (there is a full list of events and initiatives at <https://en.unesco.org/themes/cop21>):

- ▶ **Business and Climate Summit**  
(UNESCO, Paris, 20–21 May 2015)
- ▶ **Climate Finance Day**  
(UNESCO, Paris, 22 May 2015)
- ▶ **World Ocean Day**  
(UNESCO, Paris, 8 June 2015)
- ▶ **International Scientific Conference – Our Common Future Under Climate Change**  
(UNESCO, Paris, 7–10 July 2015)
- ▶ **Ninth UNESCO Youth Forum**  
(UNESCO, Paris, 26–28 October 2015)
- ▶ **Resilience in a Time of Uncertainty: Indigenous peoples and climate change**  
(Paris, 26–27 November 2015)
- ▶ **UNESCO COP21 Side events on climate change (Le Bourget, COP21)**
- ▶ **International Conference: Water, Megacities and Global Changes**  
(UNESCO, Paris, 1–4 December 2015)
- ▶ **L’Université de la Terre 2015 Conference – Let’s Change all Climates**  
(UNESCO, Paris, 4–5 December 2015)
- ▶ **Getting climate-ready: Showcasing the ASPnet schools’ response to climate change**  
(UNESCO, Paris, 7–8 December 2015)
- ▶ **Social Good Summit**  
(UNESCO, Paris, 8–9 December 2015)

UNESCO is also providing exhibits on climate change:

- ▶ **Ocean and Climate**  
(UNESCO, Paris, 5 June–30 August 2015)
- ▶ **Mountains and Climate Change**  
(UNESCO and in the City of Paris, November 2015)
- ▶ **Climate Train**  
(SNCF, around France, October 2015)
- ▶ **The Blue Pavilion**  
(Paris, 30 November–11 December 2015)



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