



United Nations
Educational, Scientific and
Cultural Organization

"...adaptation to climate change is not a technical challenge, but one that involves society in its broadest sense."

*Dr Rajendra Pachauri**

UNESCO's strategy for **action** on Climate Change

UNESCO's Strategy for Action on Climate Change consists of an integrated multidisciplinary programme offering Member States capacity building and technical advice to design and implement evidence-based policies and projects at the local, national, regional and global levels, drawing on two principal pillars:

- 1 the sound and unbiased generation and use of data, information and research concerning climate change, and
- 2 the application of educational tools and measures to build public awareness.

The Strategy for Action aims at assisting Member States to:

- > build and maintain a requisite knowledge base
- > help adapt to the impacts of climate change
- > contribute to mitigation of its causes, and
- > strengthen sustainable development.

UNESCO and the World Meteorological Organisation have been designated as the joint convening agencies for the cross-cutting areas of science, assessment, monitoring and early warning for the UN system in addressing climate change.



*Chair of the IPCC
at the 177th Executive
Board of UNESCO
2 October 2007



Serious flooding in Kapuk Muara, Jakarta, Indonesia, 1997.

UNESCO's contribution to the United Nations system effort on climate change may be most profoundly felt through its actions to enhance climate change education, public awareness and access to data and information for all. These, however, are not responses to climate change in themselves, but represent modalities of converting scientific research, data and information into informed policies and social actions. UNESCO's strategy recognizes that this linkage is a critical one without which the results of research and monitoring activities cannot be fully utilized.

UNESCO provides assistance to Member States in the formulation of evidence-based long-term sustainable development strategies and policies, with explicit integration of the gender dimension. In addition, the Strategy also recognizes the necessity to avoid overlap and to enhance synergies within the UN system and with other partners.

Climate change is significantly affecting air and sea surface temperatures, the hydrological cycle and weather patterns. These will in turn contribute to **profound changes in ecosystems**, including the distribution and behaviour of species, reconfiguration of species assemblages, the distribution of biomes, and the potential loss of a significant percentage of living species. Adaptation by species will be hampered by their inability to evolve or migrate quickly enough, by physical impediments to their migration due to human modification of landscapes, and, in some cases, because there will simply be no suitable place left to go.

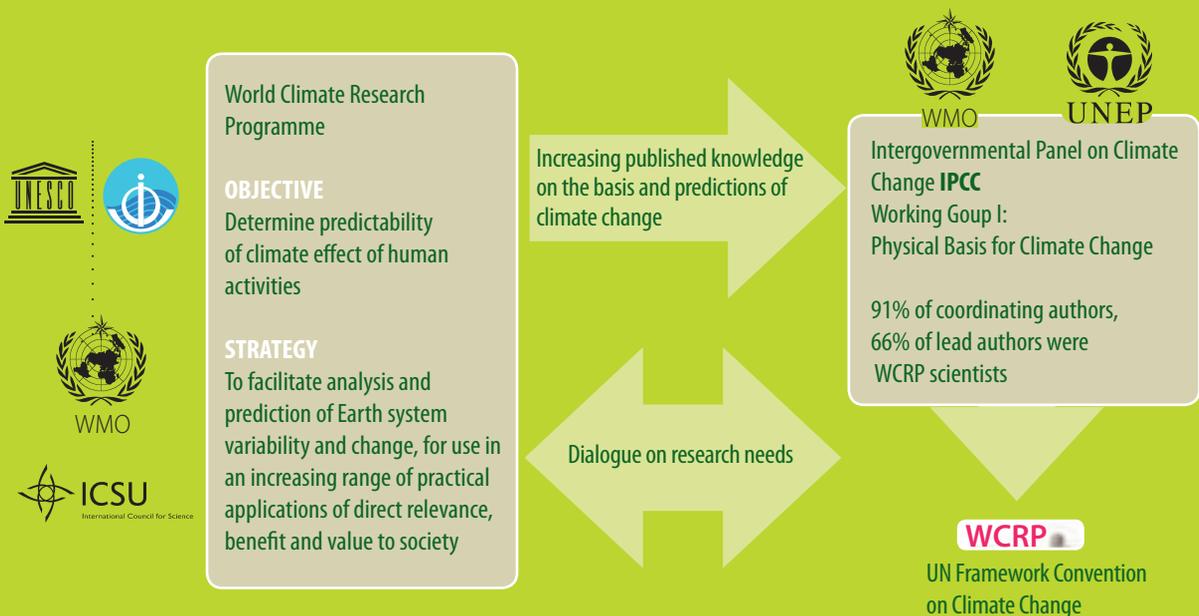




Photo: NASA

Photo: Dennis Moss Partnership



Photo: L. A. Brooks

Mata Atlântica cleared for cattle pasture in northern Rio de Janeiro State. This is a promising location for Reducing Emissions from Deforestation and Forest Degradation in Developing Countries, or REDD, projects.

(Top left) Sagarmatha National Park includes Mt. Everest and associated glaciers, which provide fresh water for millions of people downstream.

(Top right) Cape Winelands in South Africa joined UNESCO's World Network of Biosphere Reserves in 2007.

Many regions will experience entirely **new hydrological regimes**, including more severe and erratic drought or floods, and may ultimately face critical **shortages of fresh water.** »

While indigenous peoples who are directly dependent upon traditional ways of life have already sounded the alarm that their livelihoods risk being eliminated, other changes will have a **major impact on the ecosystem services** upon which all human societies depend. Many regions will experience entirely new hydrological regimes, including more severe and erratic drought or floods, and may ultimately face critical shortages of fresh water. Fresh water access, management, and governance challenges, focusing specifically on water dependencies in systems under stress from societal pressures and climate change are therefore imperative. These are precisely areas where UNESCO's International Hydrological Programme and the World Water Assessment Programme, which UNESCO hosts for UN-Water, have extensive experience.

Both drought and floods may lead to severe loss of topsoil and soil fertility, leaving living resources unable to cope with these and other new conditions. UNESCO World Heritage sites, IHP's FRIEND and HELP river and watershed networks, national Geoparks, and biosphere reserves have a great potential role for global monitoring of climate change. The Man and the Biosphere Programme is addressing changes in natural resources and livelihoods, including potential for carbon sequestration through biomass in biosphere reserves, which should serve as natural laboratories for assessing climate change impacts, adaptation and sustainable development.

Photo: B. Boer/UNESCO



Overgrazing leads to degradation of drylands in Qatar



Pacific-based journalists taking part in a UNESCO-sponsored workshop to enhance their science reporting skills

THE PIVOTAL ROLE OF EDUCATION

UNESCO has an important role in education and public awareness for the Decade of Education for Sustainable Development (2005-2014), Agenda 21 and the Convention on Biological Diversity, all of which are directly relevant to climate change. In all of these, UNESCO programmes seek to enable individuals to make informed and responsible decisions and actions, to enable the full participation of Member States in international debates, to develop local adaptation and mitigation strategies, and to be able to take full advantage of opportunities for economic development, technological innovations and market incentives that may arise from mitigation actions, resource management practices, and international conventions. Educating about climate change contributes to building the skills and attitudes needed to question the way we think, the values we hold and the decisions we make in the context of sustainable development. UNESCO will support institutions of higher education, and develop and pilot teaching material on climate change for all educational levels.

Many of the policy challenges raised by climate change are social and human

Coping with sharply differential impacts calls for an ethical perspective, not just on the rights of future generations but also on the specific inequalities affecting current generations. In particular, the social and human consequences of climate change will be played out in new migration flows that can be handled in ways consistent with human rights and human security only if they are adequately understood and anticipated. Facing the social and human challenges calls for enhanced understanding of the social dynamics of resilience and of how positive social transformations – impacting attitudes, behaviour, institutions and infrastructures – can both mitigate climate change and enhance resilience.

Effective dissemination of information and public awareness-raising

UNESCO's communication and information programme works to advance shared knowledge and understanding through all means of mass communication and to promote the free flow of ideas. The Organisation plays an important role in ensuring access to sound and unbiased climate information and enhancing the capacity of the media, especially national and community broadcasters, to understand and convey climate change information in an accurate and balanced manner.



Photo: ADEME

Irrigation of fields in Mali using a solar pump, demonstrating energy efficiency and local capacities.



Photo: O. Benchihi/UNESCO

Village square in Burkina Faso equipped with a solar street lamp. Such off-grid energy is essential to promote sustainable development and improved living standards in rural areas.

RENEWABLE ENERGY is at the heart of the climate change mitigation agenda

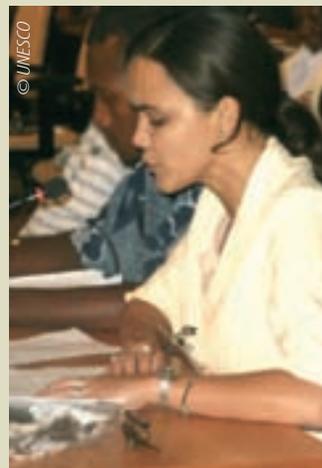
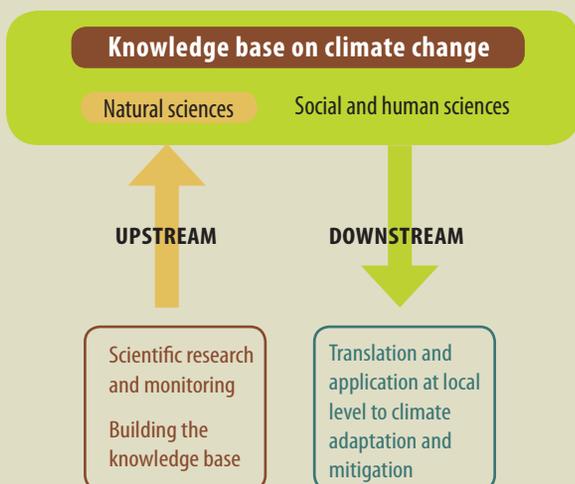
UNESCO in partnership with other members of UN-Energy will support enhanced education, training, information exchange, best practices and national strategy initiatives for the rational use and application of renewable energy sources adapted to local needs.

SCIENCE AND MONITORING ARE ESSENTIAL TO ACHIEVE ADAPTATION AND MITIGATION

With the IPCC Fourth Assessment Report, the global science related to climate change is well established. However, global projections do not easily translate into predictions of changes at the local or sub-regional level, and, as every farmer knows, rain that falls on the other side of the hill does their own field little good. Climate models still need to be scaled down to provide useful predictions to these levels so that agriculture, water supply and land use planning can take future conditions into account. In order to improve such needed regional models, local data are essential. Therefore monitoring of environmental variables is needed, preferably undertaken by local scientists and technicians linked into regional and global networks. Furthermore, to determine local adaptation and mitigation measures, local knowledge of the viable options is essential.

AS THE FUTURE GENERATION, young people have a great stake in climate change

UNESCO mobilizes youth action to address this issue through partnerships with youth networks and organizations. The UNESCO Youth Forum provides a platform for young people to share experiences, identify common concerns and consolidate action on climate change. Youth Visioning is another venue whereby young people envision how they would like to see their communities develop in the face of global and climatic change, and then undertake community-based activities to address the potential consequences.



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A young participant presenting the Youth Visioning Declaration at the main UN meeting, Mauritius, January 2005.



Like many coral reefs, Aloofushi-Dhaalu Atoll in the Maldives is threatened by ocean acidification, sea level rise and increased temperatures – three effects of climate change.

Climate change impacts will particularly threaten Small Island Developing States (SIDS)

SIDS may also struggle to respond to these threats due to their limited financial and human resources and vulnerable infrastructure. In the context of the Decade of Education for Sustainable Development, UNESCO will build awareness and understanding of climate change impacts and adaptation options for SIDS. Community-based natural disaster response and preparedness programmes will also prepare island nations for hazards posed by climate change. Internet-based discussion forums, run in several languages, such as ‘On the Frontlines of Climate Change: An Internet Forum for Indigenous Peoples, Small Islands and Vulnerable Communities’ will facilitate the exchange of ideas and experiences across and between island regions.

Indigenous and rural peoples may be particularly exposed to climate change impacts due to their resource-based livelihoods.

As knowledgeable observers of local environmental processes, their coping strategies derived from in-depth experience with environmental change provide a foundation for adaptation. Through its Local and Indigenous Knowledge Systems (LINKS) programme, UNESCO seeks to engage actively with this knowledge to address the specific vulnerabilities of indigenous groups.

Prepare for an increase in natural hazards

Based on its past experience in disaster preparedness, education and mitigation, UNESCO will assist Member States to provide a platform for enhancing strategies to increase community resilience to natural disasters that may be exacerbated by climate change, including increased storm frequency and intensity, flooding, severe drought, sea-level rise, coastal erosion, and salt-water intrusion into coastal groundwater sources. Such strategies

will include the design and dissemination of mitigation measures and information – including through gender-responsive components – education, and public awareness aimed to increase the resilience of communities as well as expanded early warning systems for ocean-related hazards.



Photo: D. Mekshma/UNESCO

An international experts meeting organized by UNESCO and hosted by the Principality of Monaco considers the scientific, social, cultural and educational challenges of sustainable development in the Arctic in the face of global climate change and expanding access to polar seas.

Photo by bennyhidayat@ft.unand.ac.id



Evacuation drill in Indonesia.



Protea are endemic flowers from the Cape Floristic Province, a biodiversity hotspot threatened by climate change.



Women gather water from a well in the Al Aouja oasis in the Assaba region of Mauritania.

Photo: S. Nimehy/IFAD

PRIORITY GENDER EQUALITY

Gender equality is one of UNESCO's two priorities, and will be mainstreamed into all programmes and activities. There is evidence that women—who comprise a majority of the poor and of small farmers—are affected differently and more severely by climate change. In many societies information is shared in gender-specific ways, and each gender may have specific roles, duties and degrees of freedom in society. These differences will be addressed in information sharing and outreach in the formulation of climate change adaptation strategies, climate-related disaster preparedness efforts and in addressing migration to ensure that women and girls are informed and participate in planning and decision making.

THE IMPACT OF CLIMATE CHANGE ON WORLD HERITAGE

UNESCO has surveyed the potential impacts of climate change on the cultural and natural sites of special value to humanity that are inscribed in its World Heritage Centre. It also is providing support to States Parties in implementing preventive and corrective measures to combat climate change impacts, including raising awareness, sharing knowledge and experience, developing pilot projects, and developing a policy on climate change impacts.

PRIORITY AFRICA

Africa is the other priority in all of UNESCO's domains, and climate change is no exception. Relevant scientific observing systems have stations or regional nodes in Africa, while research projects, case studies and experiments with innovative combinations of reforestation, rural energy and infrastructure development are underway on the continent. Training is being provided on sustainable development, adaptation and mitigation measures.



Photo: World Heritage Center/UNESCO

UNESCO's leading role in monitoring and benchmarking via observing systems

UNESCO's IOC is the recognized UN focal point and mechanism for global cooperation in the study of the oceans, a key climate driver. UNESCO's oceans and climate programmes, including the Global Ocean Observing System (GOOS), carry out global and regional research and monitoring programmes on climate, its impacts on fisheries and coral reefs, as well as the ocean's role in the global carbon cycle and impacts of ocean acidification on marine ecosystems.

A robotic Argo float about to be recovered by the Japanese coastguard vessel *Takuyo*. Argo, a pilot project of the Global Ocean and Climate Observing System, systematically measures the temperature and salinity of the ocean from the surface to a depth of 2000 m.



Photo: IOC/UNESCO



For further information on
UNESCO's work on climate change,
please visit our website:
<http://unesco.org/en/climate-change>

or find us through the gateway to the
United Nations system's work on climate change:
<http://www.un.org/climatechange/index.shtml>

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Cover photo: The Panamanian golden frog is now extinct in the wild, due to climate change.
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Back photo: View near the Volcans Biosphere Reserve in Rwanda near the DR Congo border, home of the endangered Mountain Gorilla, and a potential location for combining REDD and biodiversity conservation.

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