

# CLIMATE CHANGE AND AFRICAN CITIES IN PLANNING EDUCATION

---

## SECTION 3 – GLOSSARY AND LINKS

### 1. GLOSSARY OF TERMS AND CONCEPTS

This section contains an alphabetical list with brief definitions or descriptions of the terms and concepts that are central to the theme and appear in this toolkit.

<b>Concept</b>	<b>Description/definition</b>
Adaptation: climate change	‘Initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects. Various types of adaptation exist, e.g. anticipatory and reactive, private and public, and autonomous and planned. Examples are raising river or coastal dikes, the substitution of more temperature-shock resistant plants for sensitive ones, etc.’ (IPCC, 2007). ‘Many disaster risk reduction measures can directly contribute to better adaptation’ (UNISDR, 2009).
Climate change	‘A change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods’ (UNFCCC, 2010).
Climate change impacts	‘The effects of climate change on natural and human systems. Depending on the consideration of adaptation, one can distinguish between potential impacts and residual impacts: – Potential impacts: all impacts that may occur given a projected change in climate, without considering adaptation. – Residual impacts: the impacts of climate change that would occur after adaptation’ (IPCC, 2007).
Climate variability	‘Refers to variations in the mean state and other statistics (such as standard deviations, the occurrence of extremes, etc.) of the climate on all spatial and temporal scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability)’ (IPCC, 2007).
Disaster	‘A progressive or sudden, widespread or localised, natural or human-caused occurrence which causes, or threatens to cause, death, injury or disease; damage to property, infrastructure or the environment; or disruption to the life of a community; and is of a magnitude that exceeds the ability of those affected by the disaster to cope with its effects using only their own resources’ (RSA, 2002). ‘Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences’ (UNISDR, 2009).
Disaster (risk) management	‘A continuous and integrated multi-sectoral, multi-disciplinary process of

planning and implementation of measures aimed at:

- a. preventing or reducing the risk of disasters;
- b. mitigating the severity or consequences of disasters;
- c. emergency preparedness;
- d. a rapid and effective response to disasters; and
- e. post-disaster recovery and rehabilitation' (RSA, 2002).

'Disaster risk management aims to avoid, lessen or transfer the adverse effects of hazards through activities and measures for prevention, mitigation and preparedness' (UNISDR, 2009).

Disaster (risk) reduction	'The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events. A comprehensive approach to reduce disaster risks is set out in the United Nations-endorsed Hyogo Framework for Action, adopted in 2005' (UNISDR, 2009).
Extreme weather event	'An event that is rare at a particular place and time of year. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. Single extreme events cannot be simply and directly attributed to anthropogenic climate change, as there is always a finite chance the event in question might have occurred naturally. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event' (IPCC, 2007).
Food insecurity	'Exists when people lack access to sufficient amounts of safe and nutritious food, and therefore are not consuming enough for an active and healthy life. This may be due to the unavailability of food, inadequate purchasing power, or inappropriate utilization at household level' (FAO, 2006).
Food security	'Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life' (FAO, 2006).
Global environmental change	Large-scale and global environmental change include among others 'climate change, stratospheric ozone depletion, changes in ecosystems due to loss of biodiversity, changes in hydrological systems and the supplies of freshwater, land degradation, urbanization, and stresses on food-producing systems' (WHO, 2010).
Global warming	'Global warming relates to the increase in the average temperature of the Earth's surface that has been observed in recent years, and it is projected to continue. It is debated as to whether this is a natural occurrence or whether human activity has impacted or accelerated it. However evidence is overwhelming that human activity since the industrial revolution is responsible' (Aggregate Industries, 2010).

Greenhouse gas	‘The atmospheric gases responsible for causing global warming and climate change. The major GHGs are carbon dioxide (CO <sub>2</sub> ), methane (CH <sub>4</sub> ) and nitrous oxide (N <sub>2</sub> O). Less prevalent --but very powerful -- greenhouse gases are hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF <sub>6</sub> )’ (UNFCCC, 2010).
Hazard	‘A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage’. Natural or environmental hazards ‘arise from a variety of geological, meteorological, hydrological, oceanic, biological, and technological sources, sometimes acting in combination’ (UNISDR, 2009).
Land-use planning	‘The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses. Land-use planning can help to mitigate disasters and reduce risks by discouraging settlements and construction of key installations in hazard-prone areas, including consideration of service routes for transport, power, water, sewage and other critical facilities’ (UNISDR, 2009).
Mitigation: climate change	‘A human intervention to reduce the sources or enhance the sinks of greenhouse gases. Examples include using fossil fuels more efficiently for industrial processes or electricity generation, switching to solar energy or wind power, improving the insulation of buildings, and expanding forests and other ‘sinks’ to remove greater amounts of carbon dioxide from the atmosphere’ (UNFCCC, 2010).
Mitigation: disaster	‘Measures aimed at reducing the impact or effects of a disaster’ (RSA, 2002). ‘The adverse impacts of hazards often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness’ (UNISDR, 2009).
Resilience	‘The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions’ (UNISDR, 2009).
Risk	‘The combination of the probability of an event and its negative consequences. People do not necessarily share the same perceptions of the significance and underlying causes of different risks’ (UNISDR, 2009).
Risk assessment	‘A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that

together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend. Risk assessments (and associated risk mapping) include: a review of the technical characteristics of hazards such as their location, intensity, frequency and probability; the analysis of exposure and vulnerability including the physical social, health, economic and environmental dimensions; and the evaluation of the effectiveness of prevailing and alternative coping capacities in respect to likely risk scenarios' (UNISDR, 2009).

Sea level change/rise

'Sea level can change, both globally and locally, due to (i) changes in the shape of the ocean basins, (ii) changes in the total mass of water and (iii) changes in water density. Factors leading to sea level rise under global warming include both increases in the total mass of water from the melting of land-based snow and ice, and changes in water density from an increase in ocean water temperatures and salinity changes. Relative sea level rise occurs where there is a local increase in the level of the ocean relative to the land, which might be due to ocean rise and/or land level subsidence' (IPCC, 2007).

Sustainable development

'Development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Report). Disaster risk is associated with unsustainable elements of development such as environmental degradation, while conversely disaster risk reduction can contribute to the achievement of sustainable development, through reduced losses and improved development practices' (UNISDR, 2009).

Vulnerability

'The degree to which a system (community) is susceptible to, or unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system (community) is exposed, its sensitivity, and its adaptive capacity' (UNFCCC, 2010). 'There are many aspects of vulnerability, arising from various physical, social, economic, and environmental factors. Vulnerability varies significantly within a community and over time' (UNISDR, 2009).

Water stress

'A country is water stressed if the available freshwater supply relative to water withdrawals acts as an important constraint on development. In global-scale assessments, basins with water stress are often defined as having a per capita water availability below 1,000 m<sup>3</sup>/yr (based on long-term average runoff). Withdrawals exceeding 20% of renewable water supply have also been used as an indicator of water stress' (IPCC, 2007).

**Bibliography**

- ▶ Aggregate Industries. (2010). *Glossary of Terms*. Retrieved September 8, 2010, from Aggregate Industries: <http://www.aggregate.com/Glossary-of-terms/>
- ▶ FAO. (2006). *Basic Definitions*. Retrieved August 19, 2010, from FAO (Food and Agriculture Organization of the United Nations): <http://www.feedingminds.org/info/definitions.htm>.

- ▶ IPCC. (2007). *Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. [Core Writing Team, Pachauri, R.K and Reisinger, A. (eds.)]. Geneva: Intergovernmental Panel for Climate Change.
- ▶ RSA. (2002). *Disaster Management Act, Act No. 57 of 2002*. Pretoria: Government Printer.
- ▶ UNFCCC. (2010). *Glossary of climate change acronyms*. Retrieved August 19, 2010, from UNFCCC (United Nations Framework Convention on Climate Change): [http://unfccc.int/essential\\_background/glossary/items/3666.php](http://unfccc.int/essential_background/glossary/items/3666.php).
- ▶ UNISDR. (2009). *Terminology on Disaster Risk Reduction*. Retrieved August 19, 2010, from UNISDR (United Nations International Strategy for Disaster Reduction): <http://www.unisdr.org/eng/terminology/terminology-2009-eng.html>.
- ▶ WHO. (2010). *Global Environmental Change*. Retrieved September 8, 2010, from WHO (World Health Organization): <http://www.who.int/globalchange/environment/en/index.html>.

## 2. LINKS TO OTHER RESOURCES

The table below provides numerous links to some of the most important websites with information, tools, case studies and other resources relevant to climate change – and in a few cases to African cities specifically. The table is alphabetical, and contains the acronym and name of the organisation; the link; key words that describe the content of the website; and a description of the organisation. Many of these websites have links to other websites which can be followed-up for more information, tools and case studies if required.

Organisation	Link	Key words	Description
ELDIS	<a href="http://www.linkingclimateadaptation.org/">http://www.linkingclimateadaptation.org/</a>	country profiles, development, climate change, adaptation, disaster risk reduction, case studies	Eldis is one of a family of knowledge services funded by Sida, Norad, SDC and DFID. The website offers full text research documents free to download on various topics, including climate change and development. It also offers key documents, discussions, resources, country profiles, email newsletters, newsfeeds, announcements and events.
FAO [Food and Agricultural Organisation of the United Nations]	<a href="http://www.fao.org/climatechange/en/">http://www.fao.org/climatechange/en/</a>	agriculture, food security, climate change, fisheries, aquaculture, forests, case studies	The Food and Agriculture Organization (FAO) was founded with the mandate to raise levels of nutrition and standards of living, to improve agriculture productivity and to better the condition of rural populations. In the area of climate change, the Organization contributes to the debate by assessing the available scientific evidence, participating in observing and monitoring systems, collecting unique global datasets, promoting adaptation and mitigation practices and by providing a neutral forum for negotiations and technical discussions on climate change and agriculture.
ICLEI [International Council for Local Environmental Initiatives - Local Governments for Sustainability]	<a href="http://www.iclei.org/index.php?id=iclei-home">http://www.iclei.org/index.php?id=iclei-home</a>	consulting, training, conferences, local government, sustainable development	ICLEI is an international association of local governments as well as national and regional local government organisations who have made a commitment to sustainable development. ICLEI provides technical consulting, training, and information services to build capacity, share knowledge, and support local government in the implementation of sustainable development at the local level. It is actively involved in the climate change debate.

IFRC [International Federation of Red Cross] and Red Crescent Societies Climate Centre	<a href="http://www.climatecentre.org/">http://www.climatecentre.org/</a>	disaster management, early warning systems, case studies, advocacy, community risk reduction, case studies, climate change	The Climate Centre supports the Red Cross and Red Crescent Movement to understand and address the humanitarian consequences of climate change and extreme weather events. The Centre's main approach is to raise awareness; advocate for climate adaptation and disaster risk reduction; analyse relevant forecast information on all timescales and integrate knowledge of climate risks.
IPCC [Intergovernmental Panel for Climate Change]	<a href="http://www.ipcc.ch/">http://www.ipcc.ch/</a>	climate change science, research, scenarios, projections, impacts, emissions, mitigation, adaptation, 4 <sup>th</sup> and 5 <sup>th</sup> Assessment Report, vulnerability, sustainable development, uncertainties, responses, costs, benefits, land-use planning	The IPCC is the leading body for the assessment of climate change, established by UNEP and the WMO to provide the world with a clear scientific view on the current state of climate change and its potential environmental and socio-economic consequences. It reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change.
ProVention Consortium	<a href="http://www.proventionconsortium.org/?pageid=49#climate">http://www.proventionconsortium.org/?pageid=49#climate</a>	resources, links, organisations, networks, climate change, case studies, disaster risk reduction, reports, documents, natural hazards, impacts of disasters, knowledge sharing	The website contains numerous documents on climate change and other issues, as well as links to organisations, activities, etc. ProVention is a global coalition of international organisations, governments, the private sector, civil society organisations and academic institutions, dedicated to increasing the safety of vulnerable communities and to reducing the impacts of disasters in developing countries. ProVention aimed to advance disaster risk management in developing countries by forging partnerships and linkages; advocating for increased policy attention and commitment to reducing natural hazard risks; developing innovative approaches to the practical applications of disaster risk management; and sharing knowledge and resources.
UCCRN [Urban Climate Change Research	<a href="http://www.uccrn.org/index.html">http://www.uccrn.org/index.html</a>	Climate risk, city development strategies,	The Urban Climate Change Research Network (UCCRN) is a consortium of individuals and institutions dedicated to the

Network]		mitigation adaptation, urban, developing cities	analysis of climate change mitigation and adaptation and energy issues from an urban perspective. It is designed to enhance scientific, economic and planning-related research and to promote knowledge sharing among researchers and urban decision-makers and stakeholders about all aspects of climate change and cities.
UGEC [Urbanisation and Global Environmental Change]	<a href="http://www.ugec.org/">http://www.ugec.org/</a>	urbanisation, global environmental change, feedbacks, interactions, research questions, seminars, workshops, publications	This IHDP core project seeks to provide a better understanding of the interactions and feedbacks between global environmental change and urbanisation at the local, regional, and global scales through an innovative conceptual and methodological framework. To capture the benefits of urbanisation and mitigate as well as adapt to negative environmental and socioeconomic impacts, a stronger collaboration between academics, political decision-makers and practitioners is encouraged.
UNEP [United Nations Environmental Programme]	<a href="http://www.unep.org/urban_environment/issues/climate_change.asp">http://www.unep.org/urban_environment/issues/climate_change.asp</a>	climate change, development, publications, environment, cities, adaptation, mitigation, public awareness, climate science, resilience, Africa, most vulnerable	UNEP provides environmental leadership on dealing with climate change to the rest of the UN system, international organisations, national governments, civil society and the private sector. It provides guidance and advice to governments on reducing greenhouse gas emissions and preparing for the consequences of changed climate, and it helped to develop international agreements on climate change. UNEP's work on climate change concentrates on efforts to reduce emissions of greenhouse gases, mainly by promoting renewable energy and improved energy efficiency and spurring the development of a carbon market. UNEP has also been active in efforts to reduce the risks of, and improve society's resilience to, climate change.
UNFCCC [United Nations Framework Convention on Climate Change]	<a href="http://unfccc.int/2860.php">http://unfccc.int/2860.php</a>	Copenhagen Accord, Bali Road Map, Kyoto Protocol, Clean Development Mechanism, adaptation, mitigation, emissions	Over a decade ago, most countries joined an international treaty -- the United Nations Framework Convention on Climate Change (UNFCCC) -- to begin to consider what can be done to reduce global warming and to cope with whatever temperature increases are inevitable. More recently, a number of nations



			approved an addition to the treaty: the Kyoto Protocol, which has more powerful (and legally binding) measures.
UN-HABITAT	<a href="http://www.unhabitat.org/categories.asp?catid=550">http://www.unhabitat.org/categories.asp?catid=550</a>	cities, climate change, climate change initiative, disaster risk reduction, adaptation mitigation, country profiles, lessons	On the global, regional, national and local levels, UN-HABITAT strives to build awareness on the paramount role cities and local governments have in addressing climate change. Cities have the potential to influence the causes of climate change and they have the solutions to advance climate protection. The success of adaptation critically depends on the availability of necessary resources, not only financial and natural resources, but also knowledge, technical capability, institutional resources and targeted tools. The Cities in Climate Change Initiative seeks to enhance climate change mitigation and climate change preparedness of cities in developing and least developed countries. Building on UN-HABITAT's long experience in sustainable urban development, the Cities in Climate Change Initiative seeks to provide support towards the development and implementation of pro-poor and innovative climate change policies and strategies; and to develop tools for enhancing capacities of local governments.
UNISDR Africa [United Nations International Strategy for Disaster Reduction]	Disaster risk reduction in general: <a href="http://www.unisdr.org/africa/">http://www.unisdr.org/africa/</a>  Climate change: <a href="http://www.unisdr.org/eng/risk-reduction/climate-change/climate-change.html">http://www.unisdr.org/eng/risk-reduction/climate-change/climate-change.html</a>  Resilient cities campaign: <a href="http://www.unisdr.org/english/campaigns/campaign2010-2011/">http://www.unisdr.org/english/campaigns/campaign2010-2011/</a>	risk reduction, disaster, vulnerability, resilient cities, climate change, regional support, Hyogo Framework for Action, partnerships and platforms, best practice, case studies, publications, statistics, sustainable development, early warning, knowledge and education	To facilitate disaster risk reduction in Africa. To foster national ownership of the disaster reduction process, UN/ISDR Africa provides tailored assistance to the establishment of national platforms with national leadership and cost sharing. At the same time, UN/ISDR Africa endeavours to reinforce partnership with already-established ISDR National Platforms through mutual support in disaster reduction initiatives. UN/ISDR Africa's areas of focus are: <ul style="list-style-type: none"> <li>▶ Supporting policy &amp; strategy development</li> <li>▶ Advocating &amp; raising awareness in disaster risk reduction</li> <li>▶ Promoting information sharing &amp; knowledge exchange</li> <li>▶ Forging networks, partnerships &amp; coordination in mainstreaming disaster risk reduction into development</li> </ul>

The World Bank	<a href="http://beta.worldbank.org/climatechange/">http://beta.worldbank.org/climatechange/</a>	Climate change, case studies, adaptation, mitigation, development, risk management, research, projects, partnerships	The World Bank Group is supporting developing countries to address climate change by contributing to a global solution, while tailoring our approach to the differing needs of developing country partners. They are strengthening and building climate change partnerships with member governments and a wide array of organisations.
WMO [World Meteorological Organization]	<a href="http://www.wmo.int/pages/themes/climate/main_climate_change.php">http://www.wmo.int/pages/themes/climate/main_climate_change.php</a>	weather, climate, water, extreme weather events, oceans, environment, climate change projections, causes of global warming	The World Meteorological Organization (WMO) is the UN's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources. WMO provides the framework for international cooperation. It facilitates the free and unrestricted exchange of data and information, products and services on matters relating to safety and security of society, economic welfare and the protection of the environment. WMO's programmes provide vital information for the advance warnings that save lives and reduce damage to property and the environment.
Zunia Knowledge Exchange	<a href="http://zunia.org/tag/climate%20change/">http://zunia.org/tag/climate%20change/</a>	Africa, agriculture, climate change, climate impacts, electricity, energy, environment, food security, greenhouse gas emissions, indigenous peoples, Kyoto protocol, natural disasters, poverty, sustainable development, water, case studies	Zunia is a knowledge exchange website with numerous documents, resources, news, events, comments, etc. on various topics – including climate change. Some of the information is region and country specific.