



UN HABITAT
FOR A BETTER URBAN FUTURE

THE ABC FOR SUSTAINABLE CITIES

A glossary for policy makers

UNITED NATIONS ENVIRONMENT PROGRAMME



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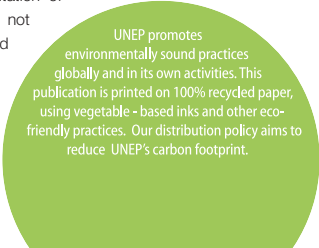
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Acknowledgments

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United Nations Environment Programme (UNEP)

The United Nations Environment Programme (UNEP) is the voice for the environment in the United Nations system. Through its range of work areas, including, for example, climate change, resource efficiency, and chemicals and waste, UNEP assists countries in implementing environmentally sound practices that promote sustainable development. Recognizing the growing need to address global environmental concerns from an urban perspective, UNEP works with national and local governments on urban environmental issues, supporting the integration of the environment into cities' long-term strategic planning, and the implementation of policies that encourage sustainable, resilient and resource-efficient cities. www.unep.org

United Nations Human Settlements Programme (UN-Habitat)

UN-Habitat is the United Nations programme working towards a better urban future. Its mission is to promote socially and environmentally sustainable human settlements development and the achievement of adequate shelter for all. UN-Habitat is the focal point for all urbanisation and human settlement matters within the UN System. It is currently active in more than 70 countries around the world. Because of its four decades of extensive experience, from the highest levels of policy to a range of specific technical issues, UN-Habitat has gained a unique and a universally acknowledged expertise in all things urban. www.unhabitat.org.

International Federation of Consulting Engineers (FIDIC)

FIDIC is the International Federation of Consulting Engineers. Its members are national associations of consulting engineers. Founded in 1913, FIDIC is charged with promoting and implementing the consulting engineering industry's strategic goals on behalf of its Member Associations and to disseminate information and resources of interest to its members. Today, FIDIC membership covers 97 countries of the world. FIDIC, in the furtherance of its goals, publishes international standard forms of contracts for works and for clients, consultants, sub-consultants, joint ventures and representatives, together with related materials such as standard pre-qualification forms. FIDIC has a long history of cooperation with UNEP on the topic of sustainable cities and buildings and has supported UNEP in the publication of the ABC for Sustainable Cities, providing key expertise in the preparation of the publication. More info on www.fidic.org

Global Initiative for Resource Efficient Cities (GI-REC)

The GI-REC is a UNEP-led initiative launched in June 2012 at the Rio+20 Summit, to connect the many different entities around the world working on resource efficiency, using UNEP's convening ability to mobilize partners and different constituencies from governments at both the national and local levels, civil society, business and industry, and other major groups. The initiative currently works with different stakeholders to promote energy efficient buildings, efficient water use, sustainable waste management and other activities. The ultimate goal of the Global Initiative is to mainstream resource efficiency and sustainable consumption and production into policies and tools at the city level and to change citizens' and business habits accordingly.

FIDIC and UN-Habitat joined the GI-REC from its early stages.

Foreword

Recognizing the need to address global environmental concerns from an urban perspective, UNEP has worked for many years with international, national and local stakeholders to mainstream the environment into urban development, while ensuring that the urban agenda is duly taken into account into the international sustainability discussion.

At the Rio+20 conference in 2012, UNEP has launched the Global Initiative for Resource Efficient Cities (GI-REC). Drawing on UNEP's unique capacity to facilitate collective action, the GI-REC brings together a wide range of stakeholders and supports cities in realising the economic, social and environmental benefits of resource efficiency and sustainable consumption and production. In the context of the Agenda 2030 for Sustainable Development, moreover, UNEP has joined its partners to advocate for an "urban" Sustainable Development Goal (SDG), and now making cities inclusive, safe, resilient and sustainable is one of the key priorities for the international community.

In October 2016, finally, world leaders will convene again for the United Nations Conference on Housing and Sustainable Urban Development, better known as Habitat III. UNEP is actively supporting the preparation process, as the conference represents a critical opportunity for countries, multilateral organizations, local governments, private sector and the civil society to jointly reflect on new ways to plan and govern our cities.

Aware of the demand for clarity generated by the increasing attention for sustainable urban development, and building on the successful experience with the "ABC of SCP", UNEP has decided to join hands with UN-Habitat and the International Federation of Consulting Engineers (FIDIC) to prepare a publication that explains key terms and concepts: the ABC for Sustainable Cities.

We hope that the ABC for Sustainable Cities can facilitate the discussion on the urban agenda and, by emphasizing the potential of cities, contribute to global objectives of sustainable development.

Arab Hoballah
United Nations Environment Programme



Introduction

Our time has been defined by many as the age of cities: in the 21st century cities are at the centre of all key demographic, environmental and socio-economic trends. The agglomeration benefits that characterise the urban form drive innovation and economic prosperity, giving to cities a leading role in the global economy. The concentration of people and economic production and consumption, however, is also a source of major environmental concerns. Cities and urban areas are hubs through which natural resources flow, are transformed, and expelled, with an impact on local, regional and global ecosystems. While the exact numbers can vary, it is widely acknowledged that cities are responsible for a large share of global GHG emissions, solid and liquid waste, pollution and ecosystem degradation.

Aware of the potential and the challenges of the urban form to drive development while reducing the human impact on the environment, numerous stakeholders today focus their attention on urban issues. Local and national governments, city networks, international organizations and donors among other stakeholders are working to bring the sustainability agenda at the city-level, and the concept of 'sustainable cities' is widely used. The great number of existing actors, approaches and initiatives, however, resulted into a variety of different definitions none of which can claim to cover the whole complexity of the issue.

The ABC for Sustainable Cities aims to bring clarity on this. Rather than providing a single univocal definition of what is a "Sustainable City", it brings together key elements of it by compiling terms and concepts from internationally recognised sources. In doing so, the ABC will contribute to a better understanding of city-level sustainable development, where new concepts, phrases, terms and expressions are developed and used across the world. By providing a reference easily accessible to technical and non-technical audience, moreover, the ABC helps developing a common language and fosters dialogue among stakeholders and sets the basis for cooperation.

A key component in the development of this glossary has been the process of peer-review and contribution by individual and institutional experts: this has allowed to reach a broad consensus on the list of words to be included and on the most appropriate definitions, and to produce a glossary that is useful for different stakeholders working on the topic from different angles and at different levels. Indeed, the objective of the ABC is not to provide globally agreed definitions, but rather collate the ones that already exist and may continue to evolve over time through the input of those who use them.



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Glossary

Agenda 2030 for Sustainable Development

The 2030 Agenda for Sustainable Development is the global framework launched in 2015 to help eradicate poverty and achieve sustainable development by 2030. It aims respond comprehensively to global challenges. It incorporates and follows on from the Millennium Development Goals (MDGs), the Rio+20 UN Conference on Sustainable Development, and the Financing for Development Conferences. It addresses poverty eradication and the economic, social and environmental dimensions of sustainable development together. The 2030 Agenda is a universal agreement; its implementation will require action by all countries, developed and developing. It will be underpinned by a Global Partnership, mobilising governments and stakeholders (citizens, civil society, private sector, academia, etc.), at all levels. The 2030 Agenda includes 17 Sustainable Development Goals and 169 associated targets integrate and balance the three dimensions of sustainable development.

Based on European Commission (2015), Sustainable Development Goals and the Agenda2030 -Fact Sheet, http://europa.eu/rapid/press-release_MEMO-15-5709_en.htm

Air Pollution

Air pollution is the presence of contaminant or pollutant substances in the air that do not disperse properly and that interfere with human health or welfare, or produce other harmful environmental effects (1). Air pollutants may include forms of matter of almost any natural or artificial composition capable of being airborne. They may consist of solid particles, liquid droplets or gases, or combinations of these forms. (2) Urban air pollution is linked to up to 1 million premature deaths and 1 million pre-natal deaths each year. Urban air pollution is estimated to cost approximately 2% of GDP in developed countries and 5% in developing countries. Rapid urbanisation has resulted in increasing urban air pollution in major cities, especially in developing countries. Over 90% of air pollution in cities in these countries is attributed to vehicle emissions brought about by high number of older vehicles coupled with poor vehicle maintenance, inadequate infrastructure and low fuel quality.

(1) OECD Glossary of Statistical Terms, <http://stats.oecd.org/glossary/index.htm>; (2) Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997; 3) UNEP (undated) http://www.unep.org/urban_environment/Issues/urban_air.asp

Biocapacity

The capacity of ecosystems to produce useful biological materials and to absorb waste materials generated by humans, using current management schemes and extraction technologies. The biocapacity of an area is calculated by multiplying the actual physical area by the yield factor and the appropriate equivalence factor. Biocapacity is usually expressed in units of global hectares.

UNEP 2012, Global Environment Outlook GEO 5, <http://www.unep.org/geo/geo5.asp>

Biodiversity

Biological diversity – or biodiversity – is the term given to the variety of life on Earth. It is the variety within and between all species of plants, animals and microorganisms and the ecosystems within which they live and interact. Biodiversity comprises all the millions of different species that live on our planet, as well as the genetic differences within species. It also refers to the multitude of different ecosystems in which species form unique communities, interacting with one another and the air, water and soil. Biodiversity is explored at three levels: genetic diversity, species diversity and ecosystem diversity. It includes diversity in abundance, distribution and behaviour. Biodiversity also incorporates human cultural diversity, which can both be affected by the same drivers as biodiversity, and itself has impacts on the diversity of genes, other species and ecosystems.

Based on WWF (undated), http://www.wwf.org.au/our_work/saving_the_natural_world/what_is_biodiversity/, and UNEP 2012; and Global Environment Outlook GEO 5, <http://www.unep.org/geo/geo5.asp>

Biogas

Biogas is gas consisting mainly of methane CH_4 produced by anaerobic digestion of organic waste. Biogas/digester gas (methane and some carbon dioxide, and small amounts of hydrogen sulphide (H_2S), moisture and siloxanes. Biogas or digester gas can be used as a fuel; heating purpose or also be used in a gas engine to convert the energy in the gas into electricity and heat. Biogas or digester gas can be produced and collected at community wastewater treatment works, or in smaller scale household biogas plants, as has been practiced widely in China and South Asia.

Based on Worldbank.org (undated), <http://water.worldbank.org/shw-resource-guide/infrastructure/menu-technical-options/wastewater-treatment>

Biotope Area Factor

Biotope Area Factor is the proportion of green space to the entire development area. The regulation is a part of a larger suite of documents relating to landscape planning, landscape design and species protection. It responds to the need to encourage more green space areas to be developed in densely built-up urban locations.

Based on Kazmierczak, A. and Carter, J. (2010) Adaptation to climate change using green and blue infrastructure. A database of case studies, http://www.stadtentwicklung.berlin.de/umwelt/landschaftsplanung/bff/download/Auszug_BFF_Gutachten_1990_eng.pdf

Blue water footprint

Volume of surface and groundwater consumed as a result of the production of a good or service. Consumption refers to the volume of freshwater used and then evaporated or incorporated into a product. It also includes water abstracted from surface or groundwater in a catchment and returned to another catchment or the sea. It is the amount of water abstracted from groundwater or surface water that does not return to the catchment from which it was withdrawn.

Water Footprint Network, glossary, <http://waterfootprint.org/en/water-footprint/glossary/>

Brownfield Land

Brownfield land is land available for development, which has previously been built on or used for purposes that have altered the condition of the soil. (1) Brownfield land or previously developed can be defined as: Land which is or was occupied by permanent, including the curtilage (parcel of land attached to a dwelling house and forming one enclosure with it) of the developed land and any associated fixed surface infrastructure. There are four main categories of a Brownfield land: vacant, derelict, contaminated and/or partially occupied or utilised. Effective use of land includes reusing land that has been previously developed. (2), Brownfield redevelopment means to encourage the reuse of land by developing sites that are complicated by environmental contamination, thereby reducing pressure on undeveloped land. (3)

(1) EU; 2011, Let's speak sustainable construction Multilingual Glossary, (2) Based on Building Research Establishment Ltd 2015 et al, http://www.designingbuildings.co.uk/wiki/Brownfield_land: The British National Planning Policy Framework (NPPF), (3) Based on <http://www.usgbc.org/credits/ss3>

Buffer zone

A buffer zone is a land area designated for safety purposes, which includes the highest sea level previously flooded (e.g., the tsunami level), together with an additional buffer area.

UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries

Building Envelope

Building envelope means the complete set of elements and components that are assembled in order to separate an internal occupied space from the external environment, thus creating a comfortable, habitable interior. (1), The building envelope is the interface between the interior of the building and the outdoor environment, including the walls, roof, and foundation. By acting as a thermal barrier, the building envelope plays an important role in regulating interior temperatures and helps determine the amount of energy required to maintain thermal comfort. Minimizing heat transfer through the building envelope is crucial for reducing the need for space heating and cooling. The building envelope can affect energy use and, consequently, GHG emissions in a variety of ways as embodied energy, insulation and air sealing, roofs, walls, windows, doors, and skylights. (2)

(1) EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, (2) Based on Centre for Climate and Energy Solutions, Arlington, VA, USA: <http://www.c2es.org/technology/factsheet/BuildingEnvelope>

Building Information Modelling (BIM)

Building Information Modelling (BIM) is a process for developing and using a computer generated three-dimensional (3D) parametric model to facilitate the planning, design, construction and use of a facility. It allows the physical and functional characteristics of a facility to be maintained as a digital portrayal of a building that can be shared by the various stakeholders involved throughout the whole lifecycle of buildings. Building information models characterize building component properties and quantities, define the geometric, spatial and geographic attributes of the project, and support cost estimations, project scheduling, monitoring of material utilisation and in use applications. This provides a reliable and efficient basis for making informed decisions throughout the project's lifespan, from concept definition and construction, through to its use and eventual demolition.

UNEP 2014, *Greening the building supply chain*, http://www.unep.org/sbcii/pdfs/greening_the_supply_chain_report.pdf

Building Management System

Building management system is system capable of making intelligent decisions based on information sent to it.

ISO/TR 25743:2010

Bus Rapid Transit (BRT):

A passenger traffic system that builds on the quality of rail transit and the flexibility of buses. The BRT combines intelligent transportation systems technology, priority for transit, cleaner and quieter vehicles, rapid and convenient fare collection, and integration with land use policy.

United Nations Environment Programme, 2013, *Integrating the environment in urban planning and management*

Car Sharing

Car sharing, car pool or car clubs are models of car rental or organisations, where people rent cars for short periods of time, often by the hour. They are attractive to customers who make only occasional use of a vehicle, as well as others who would like occasional access to a vehicle of a different type than they use day-to-day. (1), Car sharing is designed for local users in support of community transit and environmental goals. Its mission, vision and values lead to actions aimed at decreasing personal car ownership, reducing vehicle distance travelled, improving urban land use and development, providing affordable access to vehicles for all constituencies, as well as motivating residents to walk, cycle and take buses and trains, and decreasing dependence on fossil fuels while reducing the emission of greenhouse gases. (2)

(1) Based on *Strategies Towards Energy Performance and Urban Planning (STEP UP)* Gothenburg/Anna Svensson, 2015, <http://www.stepupsmartcities.eu>; (2) carsharing.org (undated), <http://carsharing.org/what-is-car-sharing/>, Car sharing Association CSA

Carbon Footprint

Carbon footprint is the total set of greenhouse gas (GHG) emissions caused by an organisation, event or product. For simplicity of reporting, it is often expressed in terms of the amount of carbon dioxide, or its equivalent of other GHGs, emitted (1). A tool to for calculating and reporting citywide GHG emissions was developed by WRI, C40 and ICLEI in 2015 (the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC)). Building on consolidated methodologies and approaches, the tool aim to overcome existing challenges including inconsistent methods, data quality, data aggregation, boundary setting and to allow for credible and meaningful reporting (2)

1) UK Carbon Trust, www.carbontrust.co.uk/cut-carbon-reduce-costs/calculate/carbon-foot-printing/Pages/carbon-footprinting.aspx; 2) the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) at http://ghgprotocol.org/files/ghgp/GHGP_GPC.pdf

Carbon Market

Carbon market trading system through which countries may buy or sell units of greenhouse gas emissions in an effort to meet their national limits on emissions, either under the Kyoto Protocol or under other agreements, such as that among Member States of the European Union.

EU; Climate change: Key terms in 23 languages.pdf

Carbon Tax

Carbon tax is a tax on the use of fossil fuel based on the relative carbon content of those fuels

United Nations, Glossary of Environment Statistics

Carrying Capacity of Ecosystems

Ecologists define “carrying capacity” as the population of a given specie that can be supported indefinitely in a given habitat without permanently damaging the ecosystem upon which it depends. For human beings, carrying capacity can be interpreted as the maximum rate of resource consumption and waste discharge that can be sustained indefinitely in a given region without progressively impairing the functional integrity and productivity of relevant ecosystems. The corresponding human population is a function of the per capita rates of resource consumption and waste production. This approach reveals how cities depend on the carrying capacity of ecosystems far beyond their administrative boundaries and the associated built-up areas.

Rees W. 1993, Ecological footprints and appropriated carrying capacity: what urban economics leaves out, in Environment and Urbanisation, vol. 4, no.2

CEEQUAL

CEEQUAL means Civil Engineering Quality Assessment System and is an international evidence-based sustainability assessment, rating and awards scheme for civil engineering, infrastructure, landscaping and works in public spaces

CEEQUAL Ltd. 2015, <http://www.ceequal.com/about;html>

Cement Sustainability Initiative (CSI)

The Cement Sustainability Initiative (CSI) is a global effort by 25 major cement producers with operations in more than 100 countries that believe there is a strong business case for the pursuit of sustainable development. Collectively these companies account for around 30% of the world's cement production and range in size from very large multinationals to smaller local producers.

Certified Environmental Profiling (CEP)

Certified Environmental Profiling (CEP) is a method to identify and assess the environmental effects associated with a building material over its life cycle (extraction, processing, use and maintenance and eventual disposal).

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Circular Economy

Circular Economy is an economy that balances economic development with environmental and resource conservation. It puts emphasis on environmental protection and the most efficient use of and recycling of resources. A Circular Economy features low consumption of energy, low emission of pollutants and high efficiency. It involves applying Cleaner Production in companies, eco-industrial park development and integrated resource-based planning for development in industry, agriculture and urban areas. The Circular Economy was adopted by the Chinese Government in the last five-year plan (2001-2005) as the development model for China to follow. (1),

(1) UNEP (undated), www.unep.fr/scp/nap/circular/about.htm

City Development Strategy (CDS)

An action-oriented process, developed and sustained through participation, to promote equitable growth in cities and their surrounding regions to improve the quality of life for all citizens. A CDS helps cities integrate a strategic development approach and a long-term perspective into their urban planning. With a CDS, cities move beyond planning around the short-term political or donor-funding cycle to considering where they should be in 20 or 30 years, and the steps that need to be taken to achieve those goals. The idea behind a CDS is that well-positioned, well-timed public, private and civil society strategic interventions can significantly change a city's development path and improve its performance.

Cities Alliance, <http://www.citiesalliance.org/about-cds>

Clean Development Mechanism (CDM)

Clean Development Mechanism (CDM) is a set out in Article 12 of the Kyoto Protocol, the Clean Development Mechanism (CDM) is a flexible mechanism which allows a country with an emission-reduction or emission-limitation commitment under the Protocol to implement an emission-reduction project in a developing country in order to earn sellable certified emission reduction (CER) credits, each equivalent to one tonne of CO² which can be counted towards meeting Kyoto targets.

UNFCCC.int, http://unfccc.int/kyoto_protocol/mechanisms/clean_development_mechanism/items/2718.php

Climate Change Adaptation

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects. (1), Cities face significant impacts from climate change, which have potentially serious consequences for human health, livelihoods, and assets, especially for the urban poor, informal settlements, and other vulnerable groups. Cities around the world have begun to plan for climate change by developing stand-alone climate plans or incorporating climate considerations into existing plans, policies, and projects. Climate change will have impacts on many sectors: land use, housing, transportation, public health, water supply and sanitation, solid waste, food security, and energy etc. (2)

(1) IPCC AR5 - WGII, https://www.ipcc.ch/pdf/assessment-report/ar5/wg2/WGIIAR5-AnnexII_FINAL.pdf,

(2) Based on 2011 The World Bank Group; *Guide to Climate Change Adaptation in Cities*

Climate Change Mitigation

Climate Change Mitigation is action to reduce the net amount of greenhouse gases released into the atmosphere, and thus help to slow down the process of climate change resulting from human activities. (1). Cities are responsible for at least 75% of Greenhouse Gas emissions. Seventy-five per cent of global energy consumption occurs in cities and roughly half of this comes from burning fossil fuels in cities for urban transport. As such, every single dollar spent reducing this consumption is the single most cost-effective measure local governments can take in terms of climate change mitigation (2). City officials have the responsibility to design their cities according to compact and mixed-use models to mitigate climate change as much as possible. When developing an urban strategy, for instance, investing in non-motorized transportation can serve to reduce greenhouse gas emissions while, at the same time, generate adaptation benefits by reducing health problems caused by traffic congestion and pollution (3).

(1) EU; Climate change: Key terms in 23 languages.pdf

(2) "Climate Change: Are cities really to blame?" Urban World (2009), <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2636>

(3) "Integrating Climate Change into City Development Strategies" (2015), <http://unhabitat.org/books/integrating-climate-change-into-city-development-strategies/>

CO² Equivalent

CO² Equivalent is the concentration of CO² that would cause the same amount of radiative forcing as the given mixture of CO² and other greenhouse gases. Carbon dioxide equivalents (CO² eq) provide a universal standard of measurement against which the impacts of releasing (or avoiding the release of) different greenhouse gases can be evaluated.

IPCC glossary, www1.ipcc.ch/pdf/glossary/ipcc-glossary.pdf

CO² Reduction Potential

CO² Reduction Potential is the potential of a replacement technology, material or process that is used in construction to reduce the CO² emissions as compared to the emissions arising from the technology, material or process it is replacing.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Cogeneration

Cogeneration is simultaneous on-site production of electric energy and process steam or heat from the same power source (1). Usually the generation of heat in the form of steam, and the generation of power in the form of electricity. Combined heat and power plants are able to convert a much higher proportion of the energy in fuel into final output. The steam produced may be used through heat exchangers in a district-heating scheme, while the electricity provides lighting and power (2).

(1) USFCC Fuel Cell Glossary; (2) European Environment Information and Observation Network <http://www.eionet.europa.eu>

Collaborative Consumption

Collaborative consumption is an economic model based on sharing, swapping, trading, or renting products and services, enabling access over ownership. Including three distinct systems: 1. Redistribution markets: Unwanted or underused goods redistributed, 2. Collaborative Lifestyles: Non-product assets such as space, skills and money are exchanged and traded in new ways, 3. Product Service Systems: Pay to access the benefit of a product versus needing to own it outright. (1), A Shareable City enables residents to efficiently and safely share all kinds of assets – from spaces to cars, skills and utilities – to create stronger, healthier and more connected communities. In the United States, 15 mayors signed the Shareable Cities resolution in summer 2013, declaring their support of the sharing economy. (2)

(1) Rachel Botsman; What's Mine Is Yours: The Rise of Collaborative Consumption Hardcover – September 14, 2010, (2) based on Collaborativeconsumption.com, 2013, how shareable is your city, <http://www.collaborativeconsumption.com/2013/10/25/how-shareable-is-your-city/>

Combined Heat and Power (CHP)/Co-generation

Combined heat and power (CHP)/Co-generation means use of a heat engine or a power station to simultaneously generate both electricity and useful heat.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Community

Community is a group of people with an arrangement of responsibilities, activities and relationships. In many cases, a community has a defined geographical boundary. [1] A group of people who are living in one particular area or people who are considered as a unit, because of their common interest, social group or nationality. [2] A group of households that identify themselves in some way as having common interests, connections, values, resources or needs as well as physical space. A social group of any size whose members reside in a specific locality, share government and often have a common cultural and historic heritage. [3]

[1] Based on « Sustainable Development in Communities » ISO/TC 268; [2] Based on Cambridge Advanced Learner's Dictionary; [3] UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries

Community Infrastructure

Community infrastructure is functions that are fundamental to supply communities with technical service as energy (power, heating and cooling), water (drinking and other) and sewage and waste water, transportation, waste, ICT, etc. [1] Community infrastructure is system of facilities, equipment and services that support the operations and activities of communities such as energy, water, transportation, waste and information and communication technologies. Smart community infrastructure is community infrastructure with enhanced technological performance that is designed, operated and maintained to contribute to sustainable development and resilience of the community [2]

(1) ISO TC 268 Sustainable development of communities — Vocabulary; (2) Based on « Sustainable Development in Communities » ISO/TC 268

Compact Cities

[Cities that embody] more efficient, inclusive and sustainable urban form. [A compact cities] approach argues for medium- to high-built densities, enabling efficient public transport and thresholds to support concentrations of economic activity, services and facilities. Mixed-use environments and good public open spaces are important, especially as places for small and informal businesses. Urban containment policies are common, often implemented through the demarcation of a growth boundary or urban edge, which will protect natural resources beyond the urban area and will encourage densification within it.

«Global Report on Human Settlements: Planning Sustainable Cities» (2009), <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2831>.

Compact of Mayors

The Compact of Mayors was launched by UN Secretary-General Ban Ki-moon and his Special Envoy for Cities and Climate Change, Michael R. Bloomberg, under the leadership of the world's global city networks – C40 Cities Climate Leadership Group (C40), ICLEI – Local Governments for Sustainability (ICLEI) and the United Cities and Local Governments (UCLG) –with support from UN-Habitat, the UN's lead agency on urban issues. The Compact establishes a common platform to capture the impact of cities' collective actions through standardized measurement of emissions and climate risk, and consistent, public reporting of their efforts. Through the Compact, cities are:

- Increasing their visibility as leaders responding to climate change;
- Demonstrating their commitment to an ambitious global climate solution, particularly as nations convene around a new climate agreement in Paris in December 2015;
- Encouraging direct public and private sector investments in cities by meeting transparent standards that are similar to those followed by national governments;
- Building a consistent and robust body of data on the impact of city action; and
- Accelerating more ambitious, collaborative, and sustainable local climate action. Ultimately, the Compact of Mayors provides hard evidence that cities are true climate leaders, and that local action can have a significant global impact.

Compact of Mayors, <http://www.compactofmayors.org>

Composting

Composting is a process of reducing vegetable and animal refuse, either by natural biological decomposition of organic material in the presence of air or by controlled mechanical methods.

Based on United Nations, Glossary of Environment Statistics

Conference of the parties (COP)

COP refers to the conference of the parties of an international treaty. A number of treaties, including several of the environmental and human rights conventions, provide for meetings of the COP to oversee the implementation of the convention or protocol and to approve its budget and financial regulations. The COP can also provide guidance, receive reports and make recommendations to the parties. COPs convene usually on an annual or biannual basis. Some are serviced by permanent secretariats. COP1, COP2, COP3... refer to the first, second, third, etc. session or meeting of the COP (to a particular treaty). COP21, held in Paris 2015 is the 21st session of the COP to the UNFCCC. Other treaties with a COP include the United Nations Convention to Combat Desertification (UNCCD), the Convention on Biological Diversity (CBD), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal...

UNITAR 2005, A Glossary of Terms for UN Delegates, http://www.unitar.org/mdp/sites/unitar.org/mdp/files/Glossary_E.pdf

Construction Material

Construction material is material used in the construction industry to create buildings and structures, e.g. steel, timber, aggregates, plaster, concrete and plastic products as well as manufactured products. (1) The pressures and impacts related to the various life cycle stages of construction materials can differ significantly. For metals, for instance, the mining and refinery stage is often very energy intensive, causing fossil-fuel-related emissions. In the use phase, impacts depend very much on the specific application of the material. Dissipative emissions of the material itself occur, for example, in the case of corrosion of surfaces exposed to weather, or in the case of inherently dissipative applications such as spraying paints. These emissions can be attributed to the material itself. Further emissions in the use phase are related to maintenance and upkeep but mostly to the energy consumption of products. Materials also influence product lifetimes and hence the need for replacement production. The attribution of environmental impacts to materials in the use phase is problematic, as materials are incorporated into products (i.e. buildings) and it is the products that provide functionality. However, the analysis of alternative designs that use different materials can provide an indication of the environmental implications of material choice. In houses, for instance, the use of extra insulating material provides even higher energy savings. In many cases, however, energy requirements in the use phase do not depend on the material. In such cases the connection with materials is lost. Thus, positive as well as negative impacts of materials should be assessed throughout their life cycle. In waste management, the main issue is the large difference in end-of-life options. Recycling is common for metals, while most bulk construction materials end up in landfill.

(1) EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>, (2) Based on UNEP (2010) *Assessing the Environmental Impacts of Consumption and Production: Priority Products and Materials, A Report of the Working Group on the Environmental Impacts of Products and Materials to the International Panel for Sustainable Resource Management*. Hertwich, E., van der Voet, E., Suh, S., Tukker, A., Huijbregts M., Kazmierczyk, P., Lenzen, M., McNeely, J., Moriguchi, Y.

Construction Waste

Construction waste is unwanted redundant construction material made directly or incidentally during the construction process. (1), Building materials account for about half of all materials used and about half the solid waste generated worldwide. They have an environmental impact at every step of the building process—extraction of raw materials, processing, manufacturing, transportation, construction and disposal at the end of a building's useful life. Construction and demolition waste can include high-value materials and resources for new construction. Choice of materials and design principles has also a significant impact on the energy required to construct a building. (2)

(1) Based on EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, (2) Based on Department of Environment, Australian government 2012, *Construction and demolition waste guide* <https://www.environment.gov.au/>

Consumer Education for Sustainable Development

Globalization has made consumers powerful actors in our world economy. Our daily choices as consumers affect the lives of workers in distant places and the way people live. Sustainable consumption means buying goods and services that do not harm the environment, society, and the economy. Although it is predominantly an issue for high-income and emerging economies, consumption is an excellent entry point for teaching about sustainable development. Consumer education is practical, touching the daily lives of people near and far away. Local consumer action can have a global, social, economic, and environmental impact, both today and tomorrow. Education therefore has an important role to play for consumers, in terms of: -learning to know about the products we buy; encourage curiosity about how and where goods are produced as well as what the working conditions are in the country of origin? How far are goods shipped to reach the supermarket shelves? What is the environmental footprint of the production and transport of certain products? -using knowledge about the impact of our economic choices in order to change our behaviour and consumption habits. However, knowledge is not enough. ESD is a transformative learning process and aims to change the way people interact with the world.

UNESCO on Education for Sustainable Development (undated), <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/>

Cradle to Cradle

Cradle to cradle can be defined as the design and production of products of all types in such a way that at the end of their life, they can be truly recycled (upcycled), imitating nature's cycle with everything either recycled or returned to the earth, directly or indirectly through food, as a completely safe, nontoxic, and biodegradable nutrient. Cradle to cradle promotes the principle that products can be designed from the outset so that, after their useful lives, they will provide nourishment for something new. This could be either as a biological nutrient that will easily re-enter the water or soil without depositing synthetic materials and toxins or as technical nutrients that will continually circulate as pure and valuable material within a closed loop industrial cycle.

*William McDonough & Michael Braungart, 2002, Cradle to Cradle: Remaking the Way We Make Things, New York: North Point Press, <http://www.c2ccertified.org/about>; *Andrew Sherratt. Cradle to Cradle. Encyclopedia of Corporate Social Responsibility pp. 630-638*

Daylight Oriented Design

Daylight oriented design is a specific approach to the design of a building that ensures that a comfortable, acceptable indoor environment is achieved using natural light (and natural ventilation), thus reducing the demand for artificial lighting and its related energy and climate change impact.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Decarbonisation

Decarbonisation means phasing-out of dependence on carbon-containing fossil fuels, and carbon embedded in other societal and industrial processes (travel, manufacturing).

(1) EU; 2011, Let's speak sustainable construction Multilingual Glossary; <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Decoupling (impact)

Impact decoupling requires increasing economic output while reducing negative environmental impacts. Such impacts arise from the extraction of required resources (such as groundwater pollution due to mining or agriculture), production (such as land degradation, wastes and emissions), the use phase of commodities (for example transport resulting in CO² emissions), and in the post-consumption phase (again wastes and emissions). Methodologically, these impacts can be estimated by life cycle analysis (LCA) in combination with various input-output techniques (see UNEP, 2010b). Impact decoupling means that negative environmental impacts decline while value is added in economic terms. On aggregate system levels such as a national economy or an economic sector, it is methodologically very demanding to measure impact decoupling, because many environmental impacts need to be considered, their trends may be quite different or not even monitored across time, and system boundaries as well as weighting procedures are often contested.

UNEP (2011) Decoupling natural resource use and environmental impacts from economic growth, A Report of the Working Group on Decoupling to the International Resource Panel. Fischer-Kowalski, M., Swilling, M., von Weizsäcker, E.U., Ren, Y., Moriguchi, Y., Crane, W., Krausmann, F., Eisenmenger, N., Giljum, S., Hennicke, P., Romero Lankao, P., Siriban Manalang, A., Sewerin, S.

Decoupling (resources)

Resource decoupling means reducing the rate of use of (primary) resources per unit of economic activity. This 'dematerialization' is based on using less material, energy, water and land resources for the same economic output. Resource decoupling leads to an increase in the efficiency with which resources are used. Such enhanced resource productivity can usually be measured unequivocally: it can be expressed for a national economy, an economic sector or a certain economic process or production chain, by dividing added value by resource use (e.g. GDP/ Domestic Material Consumption). If this quotient increases with time, resource productivity is rising. Another way to demonstrate resource decoupling is comparing the gradient of economic output over time with the gradient of resource input; when the latter is smaller, resource decoupling is occurring

UNEP (2011) Decoupling natural resource use and environmental impacts from economic growth, A Report of the Working Group on Decoupling to the International Resource Panel. Fischer-Kowalski, M., Swilling, M., von Weizsäcker, E.U., Ren, Y., Moriguchi, Y., Crane, W., Krausmann, F., Eisenmenger, N., Giljum, S., Hennicke, P., Romero Lankao, P., Siriban Manalang, A., Sewerin, S.

Disaster

Disaster refers to a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.

United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

Disaster Preparedness

The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions (1). Preparedness measures include plans of action for potential disasters, maintenance and training of emergency services, the development and exercise of emergency population-warning methods combined with emergency shelters and evacuation plans, the stockpiling of supplies and equipment, and the development and practice of multi-agency coordination (2). In conjunction with government and industry, UNEP has developed the «Awareness and Preparedness for Emergencies at Local Level (APELL) programme, with the purpose of minimising the occurrence and harmful effects of technological accidents and environmental emergencies. The strategy of the APELL approach is to identify and create awareness of risks in an industrialised community, to initiate measures for risk reduction and mitigation, and to develop co-ordinated preparedness between the industry, the local authorities and the local population. (3)

(1) United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf; (2) UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries, (2) APELL, <http://www.unep.org/apell/>

Disaster risk

Disaster risk refers to the potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future time period.

United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

Disaster Risk Management

The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster

United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

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.

United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

District Energy System (District heating, District Cooling)

District Energy System (District heating, District Cooling) for distributing energy generated in a centralised location (1). District cooling (2) is cooling generated in special place or plant instead of each building having its own cooling plant. District cooling is based on cold water being distributed in a network of pipes in the same simple ways as district heating. Water is cooled and feed through a network of pipes to residential buildings, offices, hospitals, industry and used to cool the air circulating in the properties' ventilation systems. The same water is then fed back to the production plant to be cooled again. District heating (3) (also known as heat networks) is a system for distributing heat generated in a centralised location for residential and commercial heating requirements such as space heating and water heating. The heat is often obtained from a cogeneration plant burning fossil fuels but increasingly also biomass, although heat-only boiler stations, geothermal heating, heat pumps and central solar heating are also used, as well as nuclear power. District heating plants can provide higher efficiencies and better pollution control than localised boilers.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>; (2) <http://www.svenskjarvarme.se/In-English/District-Heating-in-Sweden/District-Cooling/What-is-district-cooling/> (3) Based on <http://www.stepupsmartcities.eu/>

Eco-building

Eco-building is a building that is designed to maximise energy efficiency and minimise use of resources. [1]

[1] Based on EU; 2011, Let's speak sustainable construction Multilingual Glossary; <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Eco-efficiency

Eco-efficiency is a management philosophy that encourages business to search for environmental improvements that yield parallel economic benefits. It focuses on business opportunities and allows companies to become more environmentally responsible and more profitable. It is a key business contribution to sustainable societies. Eco-efficiency is achieved by the delivery of competitively priced goods and services that satisfy human needs and bring quality of life, while progressively reducing ecological impacts and resource intensity throughout the life-cycle to a level at least in line with the earth's estimated carrying capacity. (1), The density of population and socio-economic activities that characterise most cities can lead to efficiency gains and technological innovation through the proximity of economic activities while reducing resource and energy consumption. Urban infrastructure including streets, railways, water, and sewage systems come at considerably lower cost per unit as urban density rises.

(1) World Business Council for Sustainable Development (www.wbcsd.org/plugins/DocSearch/details.asp?type=DocDet&Objectid=MTgwMjc); 2) UNEP 2011, Green Economy Report

Ecodesign

Ecodesign is the culmination of a holistic, conscious and proactive approach. It consists in designing a product -or service- so as to minimize its impacts on the environment. Ecodesign applies at every stage in a product's life: raw material extraction, production, packaging, distribution, use, recovery, recycling, incineration, etc.

UNEP/ECO-DESIGN, production without destruction, http://www.unep.org/PDF/sc/Eco-design_resourcekit-2.pdf

Ecological Corridor

Ecological Corridor is a strip of vegetation used by wildlife and potentially allowing movement of biotic factors between two areas.

Based on European Environment Agency (EEA), <http://glossary.eea.europa.eu>

Ecological Footprint

Ecological footprint is a measure of how much biologically productive land and water an individual, population or activity requires to produce all the resources it consumes and to absorb the waste it generates using prevailing technology and resource management practices. The ecological footprint is usually measured in global hectares (a common unit that encompasses the average productivity of all the biologically productive land and sea area in the world in a given year). Because trade is global, an individual or country's footprint includes land or sea from all over the world. [1] The Ecological Footprint measures the amount of biologically productive land and water area (bio capacity) required to produce the resources an individual, population or activity consumes, and to absorb carbon dioxide emissions they generate, given prevailing technology and resource management. This area is expressed in global hectares (hectares with world average biological productivity). [2]

(1) Global Footprint Network (www.footprintnetwork.org/en/index.php/GFN/page/glossary/); (2) SBN 978-2-940443-87-1 WWF; Living Planet Report© 2014

Ecological Overshoot

Ecological overshoot is when a population's demands on an ecosystem exceed the capacity of that ecosystem to regenerate the resources demanded. Overshoot results in ecological assets being diminished and carbon waste accumulating in the atmosphere (1). The overshoot day is that day of a year when humanity begins using more ecological resources and services in a given year than Earth can regenerate in that year. (2)

(1) Global Footprint Network, 2014; (2) EU, 2011, *Let's speak sustainable construction Multilingual Glossary*

Ecological Storm Water Management

In urban areas, storm water picks up pollution mainly from impervious surfaces and conveys it through pipes either directly to recipients or to a wastewater treatment plant. An alternative to this approach is ecological storm water management, where polluted storm water is treated and volumes are reduced through a variety of techniques that include infiltration, retention/detention, bio filters, and structural controls. [10]

Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015, <http://www.stepupsmarcities.eu/>,

Ecological Tax

Ecological taxation and pricing instruments are aimed to improve environmental management, including taxes on the exploitation of natural resources (e.g. forests, minerals, fisheries), user charges and fees (e.g. water charges, street parking fees and permits or licences on natural resources), taxes or charges on polluting emissions (e.g. air pollution) and reforms to subsidies (e.g. on pesticides, water, energy).

UNDP-UNEP Poverty-Environment Initiative (www.unpei.org/PDF/PEIhandbookAbbreviations-Acronyms-Glossary-References-index.pdf)

Ecosystem

Ecosystem is a system of interdependent organisms which share the same habitat, in an area functioning together with all of the physical (abiotic) factors of the environment.

EU, 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Ecosystem Services

Ecosystem services are defined as benefits that humans obtain from ecosystem functions, or as direct and indirect contributions from ecosystems to human well-being. Urban ecosystems are those where the built infrastructure covers a large proportion of the land surface, or those in which people live at high densities. They include all 'green and blue spaces' in urban areas, including parks, cemeteries, yards and gardens, urban allotments, urban forests, wetlands, rivers, lakes, and ponds. Urban ecosystems are especially important in providing services with direct impact on health and security such as air purification, noise reduction, urban cooling, and runoff mitigation. Which ecosystem services in a given city are most relevant varies greatly depending on the environmental and socio-economic characteristics of each site. For example, natural barriers to buffer environmental extremes are critical for cities located in or close to coastal areas (e.g. New Orleans); air quality regulation can be of significance in cities severely polluted due for instance to topography of heat inversions (e.g. Santiago de Chile), but may be of secondary importance in cities where atmospheric pollution is favoured by topography, as well as policy (e.g. Helsinki). Similarly, while urban green areas will generally play a secondary role in tourism, emblematic city parks can be an important part of the portfolio of attractions valued by city tourists (e.g. the Central Park in New York).

Gómez-Baggethuna E. and Bartonc David, Classifying and valuing ecosystem services for urban planning, in Ecological Economics, Volume 86, February 2013, Pages 235–245

Education for Sustainable Development

Education for sustainable development (ESD) aims to help people to develop the attitudes, skills and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these decisions. ESD supports five fundamental types of learning to provide quality education and foster sustainable human development: learning to know, learning to be, learning to live together, learning to do and learning to transform oneself and society.

ESD concerns all levels of education and all social contexts (family, school, workplace, community). It allows learners to acquire the skills, capacities, values and knowledge required to ensure sustainable development, and fosters responsible citizens.

UNESCO is leading the United Nations Decade on Education for Sustainable Development (UN DESD) – 2005-2014.

UNESCO Institute for Statistics, UOE data collection on education systems, 10.1 World Declaration on Education for All, Jomtien, 1990, Art. 1, para. 1.)

Embodied Energy

Embodied energy is the total of all the energy consumed in the processes associated with the production of the materials and products that go into a building or structure.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Embodied Environmental Impact

Environmental embodied impact is the total impact on the environment resulting from the sourcing, transporting, processing and manufacturing of all the raw materials, fuels and items that contribute to the production of a good or service.

[19] EU; 2011, Let's speak sustainable construction Multilingual Glossary

Energy Efficiency

Energy Efficiency (EE) encompasses all changes that result in a reduction in the energy used for a given energy service (heating, lighting...) or level of activity. This reduction in energy consumption is not necessarily associated with technical changes, since it can also result from a better organisation and management or improved economic efficiency in the sector (e.g. overall gains of productivity).

World Energy Council (WEC) (www.worldenergy.org/wec-geis)

Energy Performance Certificate

Energy Performance Certificate, required by EU law that informs a potential owner or user of a building of its designed energy performance and that contains recommendations on how the energy efficiency of the building can be improved. (1), The energy performance certificate for buildings shall include reference values such as current legal standards and benchmarks in order to make it possible for consumers to compare and assess the energy performance of the building (...) and shall be accompanied by recommendations for the cost-effective improvement of the energy performance. (2)

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>, (2) The Buildings Performance Institute Europe (BPIE), http://bpie.eu/uploads/lib/document/attachment/61/BPIE_Energy_Performance_Certificates_EU_mapping_-_2014.pdf

Environment

The environment is the totality of all the external conditions affecting the life, development and survival of an organism.

OECD Glossary of Statistical Terms, <http://stats.oecd.org/glossary/index.htm>

Environmental Impact Assessment (EIA)

An analytical process or procedure that systematically examines the possible environmental consequences of a given activity or project. The aim is to ensure that the environmental implications are taken into account before the decisions are made.

UNEP 2012, Global Environment Outlook GEO 5, <http://www.unep.org/geo/geo5.asp>

Environmental mainstreaming

The informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sector-specific development policy, rules, plans, investment and action.

United Nations Environment Programme, 2013, Integrating the environment in urban planning and management

Environmental migration

Human migration involves movement over a significant distance and duration. Environmental migration refers to human migration where environmental risks or environmental change plays a significant role in influencing the migration decision and destination. Migration may involve distinct categories such as direct, involuntary, and temporary displacement due to weather-related disasters; voluntary relocation as settlements and economies become less viable; or planned resettlement encouraged by government actions or incentives. All migration decisions are multi-causal, and hence it is not meaningful to describe any migrant flow as being solely for environmental reasons.

IPCC, WGIIAR5 - Annex II FINAL Glossary

Environmental problems

Environmental problems are human and/or natural influences on ecosystems that lead to a constraint, cutback or even a cessation of their functioning. They may be broadly categorized into environmental problems with proven solutions, and problems with emerging solutions. Urban environmental problems are threats to present or future human well-being, resulting from human-induced damage to the physical environment originating in or affecting urban areas.

United Nations Environment Programme, 2013, Integrating the environment in urban planning and management

Environmental Sanitation

Environmental Sanitation means a wide range of interventions designed to create and maintain an environment conducive to human health. This includes sanitation (defined as the infrastructure and services required for the safe management of human excreta) but also includes solid waste management, drainage of surface water and sullage, vector control, air pollution control, etc. (Greywater or sullage is defined as wastewater generated from plates and wash-hand basins, showers and baths, which, because it is nearly as clean as potable water, can be recycled onsite for uses such as toilet flushing, landscape irrigation and constructed wetlands. Greywater often also includes wastewater from clothes washing machines and sometimes include discharge from dishwashers and kitchen sinks.)

Based on [worldbank.org](http://water.worldbank.org/shw-resource-guide/infrastructure/menu-technical-options/wastewater-treatment), <http://water.worldbank.org/shw-resource-guide/infrastructure/menu-technical-options/wastewater-treatment>

Environmental Tax

Environmental tax is a tax intended to promote environmentally sustainable activities via economic incentives. (1) An environmental tax is a tax whose base is a physical unit (or a proxy of a physical unit) of something that has a proven, specific negative impact on the environment. (2)

(1) EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>; (2) [eurostat.eu](http://ec.europa.eu/eurostat/web/environment/environmental-taxes), <http://ec.europa.eu/eurostat/web/environment/environmental-taxes>

Environmentally Sound Technologies

Environmentally Sound Technologies protect the environment and are less polluting, use resources in a more sustainable manner, recycle more of their wastes and products, and handle residual wastes in a more acceptable manner than other technologies. In the context of pollution, they are “process and product technologies” that generate low or no waste, for the prevention of pollution. They also cover “end of the pipe” technologies for treatment of pollution after it has been generated. They are total systems, which include knowhow, procedures, goods and services, and equipment as well as organisational and managerial procedures.

CSD/UNDESA, www.un.org/esa/dsd/agenda21/res_agenda21_34.shtml

Fly Ash

Fly ash is a residue generated from the combustion of coal at high temperature in power stations, which can be used as an alternative constituent in cement production.

EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Fossil Fuel

Fossil fuel is Hydrocarbons, primarily coal, fuel oil or natural gas, formed from the remains of dead plants and animals. Fossil fuel is a general term for buried combustible geologic deposits of organic materials, formed from decayed plants and animals that have been converted to crude oil, coal, natural gas, or heavy oils by exposure to heat and pressure in the earth's crust over hundreds of millions of years.

European Commission Strategic Energy Technologies Information System, Glossary, https://setis.ec.europa.eu/glossary#letter_f

Geographic Information System (GIS)

Geographic Information System (GIS) is a system, which integrates hardware, software and data for capturing, managing, analysing, and displaying all forms of geographically referenced information.

(1) EU; 2011, *Let's speak sustainable construction Multilingual Glossary*

Global Hectare

In 2010, Earth's bio capacity was approximately 12 billion global hectares (gha) – which amounts to about 1.7 gha for every person on the planet. This biologically productive land must also support the 10 million or more wild species with which we share the planet. A global hectare (gha) is a way of expressing productive capacity in a common unit. It is defined as a hectare with the world-average productivity of all biologically productive land and water in a given year (Kitzes et al., 2007). Ecological Footprint accounting normalises different types of areas to account for differences in land and sea productivity. Actual areas, in hectares, are converted into global hectares using equivalence factors, which account for productivity differences between land types (e.g., cropland versus forest product), and yield factors, which account for differences within land types between countries.

ISBN 978-2-940443-87-1 WWF; Living Planet Report© 2014

Global Initiative for Resource Efficient Cities/GI-REC

Global Initiative for Resource Efficient Cities/GI-REC is a United Nations Environmental Programme/UNEP-led initiative launched in June 2012 at the Rio+20 Summit. The initiative currently works with different stakeholders to promote energy efficient buildings, efficient water use, sustainable waste management and other activities. UNEP and its partners aim to assist cities in combining greater productivity and innovation with lower costs and reduced environmental impacts.

UNEP-DTIE Sustainable Consumption and Production Branch; Cities and Buildings

Governance

The manner with which society exercises control over resources. It denotes the mechanisms through which control over resources is defined and access is regulated. For example, there is governance through the state, the market, or through civil society groups and local organizations. Governance is exercised through institutions: laws, property rights systems and forms of social organization.

United Nations Environment Programme, 2013, Integrating the environment in urban planning and management

Green Belt

Green belt is a zone of land that encircles a city and on which development is forbidden.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Green Building

Green building is a holistic concept that starts with the understanding that the built environment can have profound effects, both positive and negative, on the natural environment, as well as the people who inhabit buildings every day. Green building is an effort to amplify the positive and mitigate the negative of these effects throughout the entire life cycle of a building. While there are many different definitions of green building out there, it is generally accepted as the planning, design, construction, and operations of buildings with several central, foremost considerations: energy use, water use, indoor environmental quality, material selection and the building's effects on its site. (2)

United States Green Buildings Council, <http://www.usgbc.org/articles/what-green-building>

Green Building rating tool

Green building rating tools provide third-party validation of the design and/or performance of a building. Certification systems are vital as they provide an independent assessment of the green performance of projects; increasingly a key consideration for owners, tenants, agents and capital providers. Certification systems have been particularly successful in raising awareness of green buildings, resulting in greater market demand and industry response. By defining what is considered 'green' in a particular market, rating tools are able to recognize and reward best practice and thereby help move the entire market beyond simple code compliance. In more mature green building markets, building codes often become more stringent as the baseline for what is considered standard performance – at least as defined by ratings tools – increases. Green building rating tools also help create demand for green buildings. There are currently 31 different certification systems currently supported by Green Building Councils; the most widely used examples include LEED, GreenStar and BREEAM. The systems often serve as a guideline from the first day of planning and throughout the construction phase, and increasingly focus on life cycle analysis and the in use phase of the building life-cycle. Ratings tools create a common language around green building by providing definitions and performance benchmarks, which can provide verification for capital providers and developers. They have expanded the understanding of green building beyond simply energy or water efficiency in operations. Areas of building design and operation that were previously overlooked, such as indoor environment quality and the life-cycle of buildings materials, have gained attention in the market and in policy. Meeting a certification standard can be a means for contractual agreement between all players in the design and construction process, as well as potential policy targets for the public and private sectors. For example, many public authorities are adopting certification as a requirement, primarily in public buildings.

UNEP 2014, Greening the building supply chain, http://www.unep.org/sbci/pdfs/greening_the_supply_chain_report.pdf

Green Infrastructure

Where as Infrastructures are defined as basic systems and services, such as transport and power supplies that a country or organisation uses in order to work effectively [1]; green infrastructure brings nature into the city, which can improve both mental and physical health, increase property value, conserve energy, enhance wildlife habitat and save money on more costly pipe infrastructure (2)

1] Cambridge Advanced Learner's Dictionary; 2] Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015, <http://www.stepupsmartcities.eu>

Green Roof

Green roof of a building that is partially or completely covered with seeded soil and vegetation laid over a waterproofing membrane. [1] Green roof, or rooftop garden, is a vegetative layer grown on a rooftop. Green roofs provide shade and remove heat from the air through evapotranspiration, reducing temperatures of the roof surface and the surrounding air. On hot summer days, the surface temperature of a green roof can be cooler than the air temperature. [2]

[1] EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>; [2] United States Environmental Protection Agency

Green Space Factor

It aims to secure a certain amount of green surface coverage in every building lot, and to minimise the degree of sealed or paved surfaces in the development. It is applied to the whole building lot, taking into account both the building areas and the open space. Developers describe their green gardening design, quality and proportion of surface etc.

Based on <http://www.grabs-eu.org/>, the green space factor and the green points system

Greenfield Land

Greenfield land is land on which no previous development has taken place.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Greenhouse Effect

The Sun powers Earth's climate, radiating energy at very short wavelengths, predominately in the visible or near-visible (e.g., ultraviolet) part of the spectrum. Roughly one-third of the solar energy that reaches the top of Earth's atmosphere is reflected directly back to space. The remaining two-thirds is absorbed by the surface and, to a lesser extent, by the atmosphere. To balance the absorbed incoming energy, the Earth must, on average, radiate the same amount of energy back to space. Because the Earth is much colder than the Sun, it radiates at much longer wavelengths, primarily in the infrared part of the spectrum (see Figure 1). Much of this thermal radiation emitted by the land and ocean is absorbed by the atmosphere, including clouds, and reradiated back to Earth. This is called the greenhouse effect. The glass walls in a greenhouse reduce airflow and increase the temperature of the air inside. Analogously, but through a different physical process, the Earth's greenhouse effect warms the surface of the planet. Without the natural greenhouse effect, the average temperature at Earth's surface would be below the freezing point of water. Thus, Earth's natural greenhouse effect makes life as we know it possible. However, human activities, primarily the burning of fossil fuels and clearing of forests, have greatly intensified the natural greenhouse effect, causing global warming.

IPCC, FAQ 1.3 What is the Greenhouse Effect?, https://www.ipcc.ch/publications_and_data/ar4/wg1/en/faq-1-3.html

Greenhouse Gas

Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of terrestrial radiation emitted by the Earth's surface, the atmosphere itself, and clouds. This property causes the greenhouse effect. Water vapour (H₂O), carbon dioxide (CO₂), nitrous oxide (N₂O), methane (CH₄), and ozone (O₃) are the primary greenhouse gases in the Earth's atmosphere. Moreover, there are a number of entirely human-made greenhouse gases in the atmosphere, such as the halocarbons and other chlorine- and bromine-containing substances, dealt with under the Montreal Protocol. Beside CO₂, N₂O, and CH₄, the Kyoto Protocol deals with the greenhouse gases sulphur hexafluoride (SF₆), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs). [1] The primary greenhouse gases in the Earth's atmosphere are water vapour, carbon dioxide, methane, nitrous oxide, and ozone. [2] Greenhouse gas (GHG) is a gas, such as water vapour, carbon dioxide, methane, chlorofluorocarbons (CFCs) and hydro chlorofluorocarbons (HCFCs), that absorbs and re-emits infrared radiation, warming the Earth's surface and contributing to climate change. Greenhouse gases are gases as carbon dioxide, nitrous oxide, methane, ozone and chlorofluorocarbons occurring naturally or from human activities and are contributing to the greenhouse effect (global warming).

[1] IPCC WGIIAR5-AnnexII_FINAL Glossary, [2] EU; Climate change: Key terms in 23 languages.pdf, [3] Based on United Nations, Glossary of Environment Statistics

Ground Source Heat Pump

Ground source heat pump is an electrically driven device that extracts heat from the ground in order to provide, via a simple heat exchange mechanism, space and water heating for a building.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Habitat conferences (e.g. Habitat III)

The Habitat Conferences are conferences convened by the United Nations General Assembly every 20 years since 1976 on issues related to urbanisation and sustainable human settlements. Habitat III (aka the United Nations Conference on Housing and Sustainable Urban Development) will take place in Quito, Ecuador, from 17 – 20 October 2016. Member States of the General Assembly, in resolution 67/216, decided that the objective of the Conference are to secure renewed political commitment for sustainable urban development, assess accomplishments to date, address poverty and identify and address new and emerging challenges.

Based on Habitat III, the conference, <https://www.habitat3.org/the-new-urban-agenda/about>

Hazard

Hazard refers to 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. (1) Towns and urban agglomerations are affected by natural disasters. Large cities and mega-cities concentrate and magnify risk, but smaller cities also suffer from exposure to multiple risks. Involvement in reconstruction and rehabilitation efforts in urban and peri-urban areas has become increasingly significant as emergency shelter to more permanent housing solutions following a disaster, sustainable neighbourhoods and integrated settlement approaches including construction materials and technologies, energy efficiency and ecological aspects, alternative water supply and sanitation systems, solid waste and environmentally friendly site management in high-risk and poor-income areas etc. (2)

(1) United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf, (2) Based on UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries, (3)

Hazardous Waste

A used or discarded material that can damage human health and the environment. Hazardous wastes may include heavy metals, toxic chemicals, medical wastes or radioactive material. The fastest growing waste stream in both developing and developed countries concerns electrical and electronic products, which contain hazardous substances that make disposal even more of a challenge. Human health and the environment are increasingly at risk, particularly when dumpsites are uncontrolled or volume becomes unmanageable. Illnesses and infections, ground water pollution, GHG emission, and ecosystem destruction are just some of the impacts of our overfilled global dustbin. The goal is to produce as little waste as possible, recycle or remanufacture as much as possible, and treat any unavoidable waste in a manner that is the least harmful to the environment and humans – or even as a source of sustainable energy. (2)

UNEP 2012, Global Environment Outlook GEO 5, <http://www.unep.org/geo/geo5.asp>, (2) <http://www.unep.org/climatechange/mitigation/Waste/tabid/104349/Default.aspx>

Heat Pump (Air Source Heat Pump)

Air Source Heat Pump is a pump, which extracts heat from the outside air (in the same way that a fridge extracts heat from its inside) in order to heat a building.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Heat Recovery System

Heat recovery system is any conservation system whereby some space heating or water heating is done by actively capturing by-product heat that would otherwise be ejected into the environment.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Household Waste

Household waste is waste material usually generated in the residential environment. (1), Note: A holistic approach to waste management has positive consequences for GHG emissions from the energy, forestry, agriculture, mining, transport, and manufacturing sectors. The climate benefits of waste practices result from avoided landfill emissions, reduced raw material extraction and manufacturing, recovered materials and energy replacing virgin materials and fossil-fuel energy sources, carbon bound in soil through compost application, and carbon storage due to recalcitrant materials in landfills. (2), The European Union's approach to waste management five-step waste hierarchy where prevention is the best option, followed by re-use, recycling and other forms of recovery, with disposal such as landfill as the last resort (3)

(1) United Nations, Glossary of Environment Statistics (2) UNEP (undated) <http://www.unep.org/climatechange/mitigation/Waste/>, (3) European Commission <http://ec.europa.eu/environment/waste/>

Hypermobility

The notion that more travel at faster speeds covering longer distances generates greater economic prosperity. With approximately 7.5 billion trips being made each day in 2005, this is increasingly a distinguishing feature of urban areas,

Based on UN-Habitat 2013, Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements

Informal Settlements

Informal Settlements are areas where housing units have been constructed on land that the occupants have no legal right to or/and unplanned settlements where housing is not in compliance with current planning and building regulations.

Based on United Nations, Glossary of Environment Statistics

Information and Communications Technology/ICT

Information and communications technology/ICT is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.

Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015, <http://www.stepupsmartcities.eu/>

Intelligent Transportation Systems (ITS)

Intelligent transportation systems are advanced applications which, without embodying intelligence as such, aim to provide innovative services relating to different modes of transport and traffic management and enable various users to be better informed and make safer, more coordinated, and 'smarter' use of transport networks. Intelligent Transport Systems (ITS) can significantly contribute to a cleaner, safer and more efficient transport system.

Based on EU Directive 2010/40/EU (7 July 2010)

Inter Modal Transport

Intermodal transport is a form of combined transport, which is the movement of goods in one and the same loading unit or road vehicle, using successively two or more modes of transport without handling the goods themselves in changing modes. Combined transport is intermodal transport where the major part of the journey is by rail, inland waterways or sea, and any initial and/or final legs carried out by road are as short as possible.

European Reference Centre for Intermodal Freight Transport

Land Degradation

Land degradation is reduction or loss of the biological or economic productivity resulting from natural or human activities as contamination, soil erosion and destruction of vegetation.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Land-use Planning

Land-use planning refers to 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.

UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries

Landfill

Landfill is engineered depression in the ground into which waste is put. (1); the process of getting rid of large amounts of rubbish by burying it, or a place where rubbish is buried (2)

(1) EU; 2011, Let's speak sustainable construction Multilingual Glossary; (2) Cambridge English Dictionary & Thesaurus,

LEED for Neighbourhood Development

LEED for Neighbourhood Development (LEED-ND) integrates the principles of smart growth, New Urbanism and green building into the first national rating system for neighbourhood design. The rating system was developed by the U.S. Green Building Council (USGBC) in partnership with the Congress for the New Urbanism (CNU) and the Natural Resources Defence Council (NRDC).

United States Green Buildings Council, <http://www.usgbc.org/Docs/Archive/General/Docs6423.pdf>

Life Cycle

Consecutive and interlinked stages of a product system from raw material acquisition or generation from natural resources to end-of-life treatment. NOTE: life cycle includes activities, products and services and may include procured goods and services as well as end-of-life treatments of products and delivery of services, for example design, manufacture, transport, packaging and end-use or disposal.

ISO 14001

Life Cycle Assessment (LCA)

Life Cycle Assessment (LCA) is a tool to evaluate the environmental and social performance of products or services along their life cycle, encompassing extraction and processing of raw materials, manufacturing, distribution, use, re-use, maintenance, recycling, and final disposal. Under the Environmental Life Cycle Assessment (ELCA), extraction and consumption of resources (including energy), as well as releases to air, water and soil, are quantified through all stages of the life cycle. Their potential contribution to important environmental impact categories is then assessed. These include climate change, toxicity, ecosystem damage and resource base deterioration. Social Life Cycle Assessment (SLCA) is a social impact assessment technique that aims to assess the social and socioeconomic aspects of products and their positive and negative impacts (real and potential impacts) along their life cycle.

UNEP/SETAC Life Cycle Initiative

Life Cycle Management

Life cycle management (LCM) is a product management system aimed at minimising the environmental and socio-economic burdens associated with an organisation's product or product portfolio during its entire life cycle and value chain. LCM supports the business assimilation of product policies adopted by governments. This is done by making life cycle approaches operational and through the continuous improvement of product systems.

UNEP/SETAC Life Cycle Initiative

Local Authorities

Local Authorities include mayors, municipal councils and other decision-makers, who are involved in constructing, operating and maintaining economic, social and environmental infrastructure, governance and management of cities; they oversee planning processes, establish local policies and regulations, and assist in implementing national and sub-national policies. Since local authorities are the level of governance closest to people, they play a vital role in educating, mobilizing, and responding to public needs and to promoting sustainable urbanization and human settlements development.

Based on Habitat III Our Partners, <http://unhabitat.org/about-us/our-partners/>

Local Governments Organisations (LGOs)

Local Governments Organisations (aka city networks) are associations of cities, local and metropolitan governments that have banded together to show collective leadership on different issues, including sustainable development and climate change. They can have a global, national or regional scope, and often bring together cities around common priorities. LGOs typically work to support cities to collaborate effectively, share knowledge and drive meaningful action; the largest city networks often strive to represent and defend the interests of local governments on the world stage. They have an important role in environmental matters and can help to implement global agreements, influence policy and also contribute to safeguarding global common goods. Global City Networks include ICLEI-Local Governments for Sustainability; C40 Climate Leadership Group, United Cities Local Governments-UCLG Metropolis.

Based on UNEP Major Groups <http://www.unep.org/civil-society/MajorGroups/LocalAuthorities/tabid/78621/Default.aspx>; ICLEI, what we do, <http://www.iclei.org/about/who-is-iclei.html> ; C40, about, <http://www.c40.org/about/> ; UCLG, about, <http://www.uclg.org/en/organisation/about>

Locally Sourced Material

Locally sourced material is material obtained from a defined radius around a project site, helping to support the local economy and reducing transportation costs and energy.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Low Carbon Technologies

Low Carbon technologies mean existing and emerging industrial technologies, which aim to deliver low or zero carbon emissions when fully developed and implemented. [1] Low-carbon technology is technology, which results in reduced emissions of carbon dioxide compared with conventional technology. [2]

[1] Marrakech Process Secretariat www.unep.fr/scp/ <http://esa.un.org/marrakechprocess/index.shtml>]; [2] EU; Climate change: Key terms in 23 languages.pdf

Master Plan

Master plan refers to an organised set of decisions made by one person or a team of people about how to do something in the future.

Cambridge English Dictionary & Thesaurus, <http://dictionary.cambridge.org/dictionary/british/>

Material Flow Analysis (MFA)

In order to function, the global economy depends on a flow of materials that are extracted from the earth, processed via production and consumption processes to meet human needs, and then disbursed as wastes generated by the extraction, production and consumption processes. The most important materials extracted for use are biomass, fossil fuels, ores, industrial minerals and construction minerals. These material flows, which are referred to as the metabolic rate, are measured in tonnes per capita or per unit of GDP (tonnes/\$1 billion of GDP). Material Flow Analysis (MFA) is the methodology or accounting framework that has emerged to calculate these material flows. The advantage of MFA is that it makes it possible to quantify resource material flows, i.e. the total amounts extracted, the total amounts used, and the total amount extracted but not used.

International Panel on Sustainable Resource Management United Nations

Methane (Ch₄)

Methane (Ch₄) is a greenhouse gas that only lasts an average of 12 years in the atmosphere; it is an extremely powerful warmer during that period. One molecule of methane warms about 25 times more than CO₂ over 100 years (and 72 times as much over 20 years). Reduction methods are recovery and use from coal mines and oil production; reduced leaks from natural gas production and pipelines, improved management of municipal waste and wastewater, including recycling, composting, and gas capture and use, anaerobic digestion of livestock manure, improved rice irrigation etc. (1), Bio-methane from biomass offers an increasing substitution for fossil natural gas. The larger part of bio-methane is still produced from waste and wastewater at present and provides significant CO₂ savings. Methane gas vehicles can play an important role in urban and medium distance transport. (2)

(1) The World Bank and ClimateWorks Foundation 2014; Climate-Smart Development, (2) <http://ec.europa.eu/transport/themes/urban/cts/doc/2011-01-25-future-transport-fuels-report.pdf>

Metropolitan Area

Metropolitan regions can be defined as (i) region interrelated with a city, networks of cities and (ii) conurbated areas or areas with continuous high densities all across the territory, resulting from the process whereby cities become more economically interdependent with their surrounding settlements and hinterlands, creating regions with a single economy and labour market, a community with common interests and benefits of joint actions in various sectors. The defining scope for metropolitan regions are its spatial dimensions based upon the functional relationships of resource cycles, regional economic systems and formal as well as informal settlement structures. The functional linkages of metropolitan regions extend beyond administrative and political boundaries and usually include a number of local governments, peri-urban and rural lands as well as neighbouring cities. The economic links between the core and the periphery may become so close that one part cannot succeed without the other, and thus they are perceived and behave as a single entity. Metropolitan scale governance, at least with regard to some functions or subjects, is key for sustainable development given that fragmentation causes foregone opportunities for service provision efficiencies; spillovers across jurisdictional boundaries do not get addressed effectively, if at all; and regional income and service level inequalities tend to fester, or even grow over time.

Based on GIZ and UN-Habitat 2015, *Unpacking Metropolitan Governance for Sustainable Development*, retrieved at <http://unhabitat.org/books/unpacking-metropolitan-governance-for-sustainable-development/>

Microclimate

Microclimate is a local atmospheric zone where the climate differs from the surrounding area. The term may refer to areas as small as a few square feet (for example a garden bed) or as large as many square miles. Microclimates exist, for example, near bodies of water which may cool the local atmosphere, or in heavily urban areas where brick, concrete, and asphalt absorb the sun's energy, heat up, and reradiate that heat to the ambient air: the resulting urban heat island is a kind of microclimate. (1)

(1) Based on *Strategies Towards Energy Performance and Urban Planning (STEP UP)* Gothenburg/Anna Svensson, 201, <http://www.stepupsmarcities.eu/>

Mixed Use Development

[Development that] encourages increased density, cluster developments; a variety of housing types beyond detached units; protection of open space, agricultural lands and ecologically sensitive areas, the reduction in use of private and motorized forms of transport, the promotion of public transport systems, and the design and redesign of areas to support such use. (1) In [many] mixed-use urban areas, it is recommended that [the proportion] of land [that] is allocated for roads [be increased, as with the proportion of land allocated] for economic use in any neighbourhood, and [...] open public space. (2)

(1) =>Global Report on Human Settlements: *Planning Sustainable Cities* => (2009), <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=2831>.

Mobility Management

Mobility management can be described as a strategic approach to service coordination and customer service, which enhances the ease of use and accessibility of transportation networks. (1) Mobility Management (MM) is a concept to promote sustainable transport and manage the demand for car use by changing travellers' attitudes and behaviour. At the core of Mobility Management are «soft» measures like information and communication, organising services and coordinating activities of different partners. (2), Mobility in smart and sustainable cities means safe, comprehensive, dependable, efficient, accessible, affordable and environment friendly services for all passengers. (3)

(1) United States Department of Transport, http://www.unitedweride.gov/1_8_ENG_HTML.htm (2) EPOMM/ European Platform on Mobility Management <http://www.epomm.eu/index.php?id=2590>, (3) Based on ISIO37101 DIS V2

Modal Split

Modal split is defined as the percentage share of different transport modes in total inland passenger transport. These include transport by passenger cars, buses, coaches, and trains, but do not include air travel, tram and metro, cycling, and walking due to lack of availability of comparable data.

European Environment Agency, <http://www.eea.europa.eu/soer-2015/countries-comparison/transport>

Multi Modal Transportation

Multi modal or Intermodal passenger transport, also called mixed-mode commuting, involves using two or more modes of transportation in a journey. The goal of mixed-mode commuting is often to combine the strengths (and offset the weaknesses) of various transportation options. A major goal of modern intermodal passenger transport is to reduce dependence on the automobile as the major mode of ground transportation and increase use of public transport.

Based on Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015 <http://www.stepupsmartcities.eu/>

Multilateral environmental agreements (MEAs)

Treaties, conventions, protocols and contracts between several states regarding specified environmental problems. MEAs which are relevant for urban development include the United Nations Framework Convention to Combat Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), the Convention on Biological Diversity (CBD), the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal

UNITAR 2005, A Glossary of Terms for UN Delegates, http://www.unitar.org/mdp/sites/unitar.org/mdp/files/Glossary_E.pdf

Natural Cooling

Natural cooling is the use of outdoor airflow into buildings to provide ventilation and space cooling.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Nearly Zero Energy Buildings

Nearly Zero Energy Buildings as a term was introduced in the Directive of the European Parliament on the energy performance of buildings: a "nearly zero-energy building means a building that has a very high energy performance and that the nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby" (European Parliament, 2010). It is up to each member state to determine how to quantify 'nearly zero'.

Jouri Kanters and Division of Energy and Building Design, Lund University, Lund Institute of Technology, Lund 2015, Report No EBD-T-15/19

Net Zero Carbon Building

Net zero carbon building is a building that, by virtue of the materials from which it is constructed and of the fact that it produces surplus energy from renewable sources, ensures that, over its design life, it compensates for all carbon emissions associated with the construction and use of the building.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Net Zero Energy Building

Net zero energy building is building where, as a result of its very high level of energy efficiency, the overall annual primary energy consumption is equal to the energy (produced from renewable energy sources) supplied to the building.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Noise Pollution

Noise pollution or noise disturbance is the disturbing or excessive noise that may harm the activity or balance of human or animal life. The source of most outdoor noise worldwide is mainly caused by machines and transportation systems, motor vehicles, aircraft, and trains. Outdoor noise is summarised by the word environmental noise. Poor urban planning may give rise to noise pollution, since side-by-side industrial and residential buildings can result in noise pollution in the residential areas.

Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015 <http://www.stepupsmartcities.eu/>

Non-Renewable Energy

Non-renewable energy can generally be classified as non-renewable and renewable. Over 85% of the energy used in the world is from non-renewable supplies. Most developed nations are dependent on non-renewable energy sources such as fossil fuels (coal and oil) and nuclear power. These sources are called non-renewable because they cannot be renewed or regenerated quickly enough to keep pace with their use. Oil, gas and coal are the most commonly used types of non-renewable energy.

Encyclopaedia of the Earth; www.eoearth.org/article/AP_Environmental_Science_Chapter_13_-_Non-Renewable

Participation / participatory approaches

Securing an adequate and equal opportunity for people to place questions on the agenda and to express their preferences about the final outcome during decision making to all group members. Participation can occur directly or through legitimate representatives. Participation may range from consultation to the obligation of achieving a consensus.

United Nations Environment Programme, 2013, Integrating the environment in urban planning and management

Passive Building Design

Passive building design is building design approach, which seeks to fulfil all of the energy needs for comfortable use without resorting to active systems for the maintenance of the indoor environment.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Passive House

Passive house/Passivhaus is a building that does not rely on the installation of active mechanical heating, cooling or ventilation systems to ensure a comfortable, healthy indoor environment. Passivhaus standard is rigorous voluntary standard for energy efficiency in buildings. (1) Passive Houses make use of the sun, internal heat sources and heat recovery, rendering conventional heating systems unnecessary. During warmer months, Passive Houses make use of passive cooling techniques such as strategic shading to keep comfortably cool. (2)

(1) EU; 2011, Let's speak sustainable construction Multilingual Glossary, (2) Based on Passivhaus Institute http://passiv.de/en/02_informations/01_what_is_a_passive_house/01_what_is_a_passive_house.htm

Photovoltaic Electricity

Photovoltaics is the direct conversion of light into electricity at the atomic level. Some materials exhibit a property known as the photoelectric effect that causes them to absorb photons of light and release electrons. When these free electrons are captured, an electric current results that can be used as electricity. (1) Photovoltaic electricity is generated by a photovoltaic cell. (2)

1) NASA, [nasa.gov, http://science.nasa.gov/science-news/science-at-nasa/2002/solarcells/](http://science.nasa.gov/science-news/science-at-nasa/2002/solarcells/); (2) EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Planetary Boundaries

Planetary boundaries define the safe operating space for humanity with respect to the earth's system and are associated with the planet's biophysical subsystems or processes. Nine such processes correspond to planetary boundaries: climate change; rate of biodiversity loss (terrestrial and marine); interference with the nitrogen and phosphorus cycles; stratospheric ozone depletion; ocean acidification; global freshwater use; change in land use; chemical pollution; and atmospheric aerosol loading.

Nature 461, 472-475 (24 September 2009) Published online 23 September 2009; A safe operating space for humanity, Johan Rockström et al.

Pollution

The presence of minerals, chemicals or physical properties at levels that exceed the values deemed to define a boundary between "good or acceptable" and "poor or unacceptable" quality, which is a function of the specific pollutant.

UNEP 2012, *Global Environment Outlook GEO 5*, <http://www.unep.org/geo/geo5.asp>

Positive Energy Building

Positive Energy Building is a building where, as a result of its very high level of energy efficiency, the overall annual primary energy consumption is less than the energy (produced from renewable energy sources) supplied to the building.

EU; 2011, *Let's speak sustainable construction Multilingual Glossary*, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Protected Area

Protected area is legally established land or water area that is regulated and managed to achieve specific conservation objectives.

Based on United Nations, *Glossary of Environment Statistics*

Rainwater Harvesting

Rain water harvesting (RWH), in its broadest sense, is a technique used for collecting and storing rainwater for human use from roof tops, land surfaces or rock catchments, which has been in practice for more than 4000 years owing to the temporal and spatial variability of rainfall. Simply stated a water harvesting system collects and stores water within accessible distance of its place of use. The physical and chemical properties of rainwater are usually superior to the sources of ground water that may have been subjected to contamination. Like other water resources, rainwater harvesting is an option to be considered when planning a community oriented water supply system. In some cities ground water extraction has reached very high levels and has brought problems like declining water table, failures of wells/ tube wells and deterioration in ground water quality and quantity. Depending on local environmental conditions, water harvesting may provide a supplementary supply, an alternative supply or the only feasible improved supply, especially in urban areas.

UN-Habitat (undated) *Measures for Ensuring Sustainability of Rainwater Harvesting, Policy paper*, <http://mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=2386&alt=1>

Recovery

The restoration, and improvement where appropriate, of facilities, livelihoods and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors. The recovery task of rehabilitation and reconstruction begins soon after the emergency phase has ended, and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for recovery action and enable public participation. Recovery programmes, coupled with the heightened public awareness and engagement after a disaster, afford a valuable opportunity to develop and implement disaster risk reduction measures and to apply the “build back better” principle.

United Nation, 2009 UNISDR Terminology on Disaster Risk Reduction, http://www.unisdr.org/files/7817_UNISDRTerminologyEnglish.pdf

Recovery of Waste, Materials, Energy

The recovery of waste is separated into categories: the recovery of materials and the recovery of energy. Whichever of these two choices is better for the environment and human health is the preferred option. The recovery of materials is most often preferred and includes activities such as recycling and composting. These management activities generally require a collection system and a method of material processing and conversion into a new product. Recovery of energy, such as incineration, is usually the less preferred option. The conversion of non-recyclable waste materials into usable heat, electricity, or fuel is done through a variety of processes, including anaerobic digestion, gasification, and pyrolysis.

Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015/ <http://www.stepupsmarcities.eu>

Recycling

Recycling is a process by which a discarded material is collected, sorted, processed and converted into raw materials which are then used in the production of new products.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Renewable Energy

Renewable energy is a source that is, within a short time frame relative to the earth's natural cycles; sustainable, and include non-carbon technologies such as solar energy, hydropower, and wind, as well as carbon-neutral technologies such as biomass. (1) Renewable energy resources capture their energy from natural energy sources, such as sunlight, wind, hydropower, biogas and geothermal heat that are self-replenishing (as opposed to non-renewable energy sources, e.g., oil, gas and coal, that can be used only one time). (2)

(1) IPCC glossary of terms: (<http://www.ipcc.ch/pdf/glossary/tar-ipcc-terms-en.pdf>), (2) UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries

Resilience (urban)

»The ability of a city as a socio-ecological-infrastructure system and its component parts to absorb and recover from shocks whilst retaining the essential same functions and identity, to adjust to stresses and learn from them to reorganise and develop, and to transform in order to adapt to social-economic and environmental changes, which involves framing resource management according to resource availability within this system over different temporal and spatial scales”

Dodman D and Diep L. (unpublished) making the case for the nexus between resilience and resource efficiency at the city level, prepared by IIED for UNEP in 2015

Resource Efficiency

Resource efficiency is about ensuring that natural resources are produced, processed, and consumed in a more sustainable way, reducing the environmental impact from the consumption and production of products over their full life cycles. By producing more wellbeing with less material consumption, resource efficiency enhances the means to meet human needs while respecting the ecological carrying capacity of the earth. (1),

Based on UNEP GI-REC (undated) http://www.unep.org/pdf/GI-REC_4pager.pdf

Resource Efficient city

[A] city that is significantly decoupled from resource exploitation and ecological impact and is socio-economically and ecologically sustainable in the long-term (1). This can be achieved through actions such as increasing renewable energy flows, recycling of waste and pollution reduction [...] and monitor[ing] the following: (i) water, electricity and energy consumption; (ii) efficiency interventions to improve the productivity of resource use; (iii) "unaccounted" water (water that is "lost" before reaching its intended customer because of leaks, theft, or other reasons); (iv) renewable energy generated per energy source; (v) amount of waste generated and recycled per type; (vi) greenhouse gas emissions per sector; (vii) urban food flows and food security; (viii) and identification, conservation and management of ecosystem services (2). [In particular, c]ompact urban forms create the maximum amount of opportunities for resource efficiencies by allowing for infrastructural services and amenities to be shared (3).

(1) UNEP 2012, *Sustainable Resource Efficient Cities, making it Happen!*, at http://www.unep.org/urban_environment/PDFs/SustainableResourceEfficientCities.pdf (2) UN-Habitat (2012), *Urban Patterns for a Green Economy: Working with Nature*, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3343> (3) UN-Habitat (2012), *Urban Patterns for a Green Economy: Optimizing Infrastructure*, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3343>

Resources

Resources refers to naturally occurring assets that provide use benefits through the provision of raw materials and energy used in economic activity (or that may provide such benefits one day) and that are subject primarily to quantitative depletion through human use. They are subdivided into four categories: mineral and energy resources, soil resources, water resources and biological resources

(1) *OECD Glossary of Statistical Terms*, <http://stats.oecd.org/glossary/index.htm>

Retrofitting

Retrofitting is reinforcement or upgrading of existing structures so that they become more resistant and resilient to the damaging effects of hazards. Retrofitting should entail measures that assist in improving buildings so they consume less energy and provide healthier indoor environments.

UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, *Sustainable Reconstruction in Disaster-Affected Countries*

Rio+20

Rio+20» is the short name for the United Nations Conference on Sustainable Development which took place in Rio de Janeiro, Brazil in June 2012 – twenty years after the landmark 1992 Earth Summit in Rio. At the Rio+20 Conference, world leaders, along with thousands of participants from the private sector, NGOs and other groups, came together to shape how we can reduce poverty, advance social equity and ensure environmental protection on an ever more crowded planet. The official discussions focussed on two main themes: how to build a green economy to achieve sustainable development and lift people out of poverty; and how to improve international coordination for sustainable development.

UN.org, *what is Rio+20?* <http://www.un.org/en/sustainablefuture/about.shtml>

Risk

Risk is the effect of uncertainty on objectives. (1) The combination of the probability of an event and its negative consequences. (2)

(1) ISO DTR 37102 « Sustainable Development in Communities » (2) UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, *Sustainable Reconstruction in Disaster-Affected Countries*

Sanitation

Sanitation is the system for taking care of/drainage and disposal of wastewater and other waste products in order to protect people's health.

Based on United Nations, *Glossary of Environment Statistics* respectively Cambridge Advanced Learner's Dictionary

Sharing Economy

Sharing economies allow individuals and groups to make money from underused assets. In this way, physical assets are shared as services. For example, a car owner may allow someone to rent out her vehicle while she is not using it, or a condo owner may rent out his condo while he's on vacation. <https://www.pwc.se/sv/media/assets/consumer-intelligence-series-the-sharing-economy.pdf>

PwC, the Sharing Economy, <https://www.pwc.se/sv/media/assets/consumer-intelligence-series-the-sharing-economy.pdf>

Smart Cities

SMART CITY should be described as a city that dramatically increases the pace at which it improves its sustainability and resilience, by fundamentally improving how it engages society, how it applies collaborative leadership methods, how it works across disciplines and city systems, and how it uses data and integrated technologies, in order to transform services and quality of life to those in and involved with the city (residents, businesses, visitors). (1), Note 1: smartness is embedded in the process of sustainable development, i.e. sustainable development is the overarching process, while smartness is a characteristic. It implies a holistic approach, including good governance and adequate organization, processes and behaviours, and appropriate innovative use of techniques, technologies and natural resources. NOTE 2: smartness is addressed in terms of performance, relevant to technologically implementable solutions. (2)

(1) ISO TMB WD 42/2015: TECHNICAL MANAGEMENT BOARD RESOLUTION 68/2015 Adopted at the 63rd meeting of the Technical Management Board, Geneva (Switzerland) 17-18 June 2015; (2) ISO TR 37150

Smart Community Infrastructure

Smart community infrastructure is community infrastructure with enhanced technological performance that is designed, operated and maintained to contribute to sustainable development and resilience of the community. NOTE 1: It is the infrastructure that is considered to be "smart" in this standard and not the community. NOTE 2: Sustainable development tends to require community infrastructures that meet multiple, often contradictory, needs at the same time. NOTE 3: ICT is an enabler but not a precondition for achieving smart community infrastructures. [ISO/TS 37151:2015, 3.3]

ISO DTR 37102 «Sustainable Development in Communities»

Smart Grid

Electric grid system, which is characterised by the use of communication networks and the control of grid components and loads. (1); Smart grid is a modernised electrical grid that uses analogue or digital information and communications technology to gather and act on information - such as information about the behaviours of suppliers and consumers - in an automated fashion to improve the efficiency, reliability, economics, and sustainability of the production and distribution of electricity. Electronic power conditioning and control of the production and distribution of electricity are important aspects of the smart grid. (2)

(1) ISO/IEC TR 27019:2013; (2) Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015 <http://www.stepsmartcities.eu/>

Smartness

Smartness means to contribute to sustainable development and resilience, through soundly based decision making and the adoption of a long and short-term perspective. NOTE 1: smartness is embedded in the process of sustainable development, i.e. sustainable development is the overarching process, while smartness is a characteristic. It implies a holistic approach, including good governance and adequate organization, processes and behaviours, and appropriate innovative use of techniques, technologies and natural resources. NOTE 2: smartness is addressed in terms of performance, relevant to technologically implementable solutions.

ISO TR 37150

Social Life Cycle Assessment (SLCA)

Social Life Cycle Assessment (SLCA) is a social impact assessment technique that aims to assess the social and socioeconomic aspects of products and their positive and negative impacts (real and potential impacts) along their life cycle, encompassing extraction and processing of raw materials, manufacturing, distribution, use, re-use, maintenance, recycling, and final disposal.

UNEP/SETAC Life Cycle Initiative

Solar Panel/Solar Collector

Solar Panel/Solar Collector is a collector specifically intended to absorb sunlight to provide heat.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Solar Shading

Solar shading is a system which controls the amount of heat and light admitted to a building, permitting users to control heat gains from the sun.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Solar Thermal Energy

Solar thermal energy is energy absorbed by a heat transfer medium (usually a fluid) and used to provide hot water for cleaning and heating purposes.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Solid Waste

Solid waste is non-soluble, discarded solid materials, including sewage sludge, municipal garbage, industrial wastes, agricultural refuse, demolition-wastes, and mining residues.

ISO DTR 37102 «Sustainable Development in Communities»

Sufficiency

The concept of "sufficiency" has emerged over the years in planning and development circles as well as transnational civil society movements as an alternative economic model to consumerism, and a necessary component of sustainable lifestyles. It is a philosophical ideal that offers the possibility of a higher quality of life while simultaneously reducing the human impact on the natural world. Sufficiency challenges the notion that if "some" is good, then "more" must be better; instead, it emphasises "enough-ness". Sufficiency is not about sacrifice, denial, asceticism or doing without; it is about well-being and being well.

Based on Thomas Princen, The Logic of Sufficiency (2005) E. F. Schumacher, Small is Beautiful 1973

Sustainability

Sustainability calls for a decent standard of living for everyone today without compromising the needs of future. It is inextricably linked to basic questions of equity — that is, fairness, social justice and greater access to a better quality of life.

United Nations, <http://www.un.org/en/sustainablefuture/sustainability.shtml>

Sustainable Architecture

Sustainable architecture is application of sustainable development principles to the design and the whole building/construction process life cycle

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Sustainable Building Management

Sustainable building management is process that ensures that a building is designed, built and operated with low environmental impacts while enhancing the health, welfare and quality of life for the people that live inside.

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Sustainable Buildings and Construction (SBC)

The concept “Sustainable Buildings and Construction”, refers to the sustainability performance of buildings along their entire life cycle, including design, materials production, transport, construction, use and maintenance, renovation, deconstruction and recycling. The concept seeks to optimise the performance and reduce negative impacts with regard to use of materials, energy, water and land, as well as to indoor air quality and comfort, and generation of waste, wastewater and air emissions, including greenhouse gases, particulates and other pollutants. The concept applies to new and existing buildings regardless of their location.

UNEP DTIE/ United Nations Environment Programme Division of Technology, Industry and Economics.

Sustainable Construction

Sustainable construction is application of sustainable development principles to the design and construction process, i.e.: use of fewer virgin materials, less energy in construction, less energy in use, less pollution and less waste; ‘whole life’ approach to design, construction and life use; and providing safe places and work with acceptable social conditions integrated into sustainable communities.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Sustainable Consumption and Production (SCP)

The use of services and related products, which respond to basic needs and bring a better quality of life while minimising the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardise the needs of future generations

UNEP 2010, The ABC of SCP, [http://www.unep.itie.org/scp/marrakech/pdf/ABC of SCP - Clarifying Concepts on SCP.pdf](http://www.unep.itie.org/scp/marrakech/pdf/ABC%20of%20SCP%20-%20Clarifying%20Concepts%20on%20SCP.pdf)

Sustainable Development

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development includes economic, environmental and social sustainability, which are independent and mutually reinforcing pillars, and can be achieved by rationally managing physical, natural and human capital. Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of, and essential requirements for, sustainable development”. (1)

(1) Based on the Report of the Brundtland Commission, Our Common Future, 1987, and the Johannesburg Plan of Implementation.

Sustainable Development Goals (SDGs)

The Sustainable Development Goals are 17 goals set by the 2030 Agenda for Sustainable Development and formally adopted by the international community at a dedicated UN Summit that took place on 25 to 27 September 2015. The new 17 Sustainable Development Goals and 169 associated targets integrate and balance the three dimensions of sustainable development, covering areas such as poverty, inequality, food security, health, sustainable consumption and production, growth, employment, infrastructure, sustainable management of natural resources, oceans, climate change, but also gender equality, peaceful and inclusive societies, access to justice and accountable institutions. The Sustainable Development Goals (SDGs) and targets are global in nature and universally applicable, taking into account different national realities, capacities and levels of development and respecting national policies and priorities. They are not independent from each other—they need to be implemented in an integrated manner. The SDGs are the result of a three-year-long transparent, participatory process inclusive of all stakeholders and people's voices. They represent an unprecedented agreement around sustainable development priorities among 193 Member States. They have received world-wide support from civil society, business, parliamentarians and other actors. They build on the achievements of the Millennium Development Goals (MDGs), which were adopted in 2000 and guided development action for the last 15 years, helping to lift millions out of poverty.

The 17 SDGs include a stand-alone goal on Sustainable Cities and Human Settlements - Goal 11: Make Cities and Human settlements Inclusive, Safe, resilient, and sustainable. A number of other goals including those on ending poverty, food security, health, education, water and sanitation, sustainable energy, resilient infrastructure, inclusive economic growth and productive employment, gender equality and climate change action are intimately linked to urban areas and Goal 11. The outcome document, also, outlines the linkage between the SDG process and the Habitat III conference, to be held in Quito in October 2016.

Based on: Press Kit for the Sustainable Development Summit 2015: Time for Global Action for People and Planet, http://www.un.org/sustainabledevelopment/wp-content/uploads/2015/08/FAQs_Sustainable_Development_Summit.pdf, and on European Commission 2015, Sustainable Development Goals and the Agenda2030 Fact Sheet, http://europa.eu/rapid/press-release_MEMO-15-5709_en.htm; and <http://urbansdg.org/>

Sustainable Energy

Sustainable energy is energy derived from renewable sources such as biofuel, wind, tidal and solar power

EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Sustainable Lifestyles

A "sustainable lifestyle" is a cluster of habits, embedded in a social context and enabled by efficient infrastructures, framing individual choices and actions that minimize the use of natural resources and generation of emissions, wastes and pollution, while supporting fairness and prosperity for all. Creating sustainable lifestyles requires a change in social norms, policies and design of infrastructure; it means rethinking our ways of living, how we buy and how we organize our everyday life. It is also about altering how we socialize, exchange, share, educate and build identities. It is about transforming our societies and living in balance with our natural environment. As citizens, at home and at work, many of our choices on energy use, food, transport, waste, communication and interaction contribute to building sustainable lifestyles. Governments have a key role to play by creating the conducive policy environment that facilitates products and services, infrastructure, and systems of provision that make the sustainable option the norm. Education and capacity building are essential, as well as the full participation of civil society in the transition, and the involvement of the business sector to develop innovative solutions for sustainable lifestyles.

Based on UNEP CLU (unpublished)

Sustainable Procurement

Sustainable procurement is a process whereby organisations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organisation, but also to society and the economy, whilst minimising damage to the environment. Sustainable Procurement seeks to achieve the appropriate balance between the three pillars of sustainable development i.e. economic, social and environmental.

- Economic factors include the costs of goods and services over their entire life cycle, such as: acquisition, maintenance, operations and end-of-life management costs (including waste disposal) in line with good financial management;
- Social factors include social justice and equity; safety and security; human rights and employment conditions;
- Environmental factors include emissions to air, land and water, climate change, biodiversity, natural resource use and water scarcity over the whole product life cycle.

(1) Procuring the Future – report of the UK Sustainable Procurement Task Force, June 2006. Definition adopted by the Task Force on Sustainable Public Procurement led by Switzerland (membership includes Switzerland, USA, UK, Norway, Philippines, Argentina, Ghana, Mexico, China, Czech Republic, State of Sao Paulo (Brazil)), UNEP, IISD, International Labour Organization (ILO), European Commission (DG-Environment) and International Council for Local Environmental Initiatives (ICLE) and adopted in the context of the Marrakech Process on Sustainable Production and consumption led by UNEP and UNDESA

Sustainable Transport/ Mobility

Sustainable transport or mobility:

- Allows the basic access needs of individuals and societies to be met safely and in a manner consistent with human and ecosystem health.
- Is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
- Limits emissions and waste within the planet's ability to absorb them, minimises consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimises the use of land and the production of noise.

Sustainable transport involves:

- Urban planning, changing lifestyles and production patterns to reduce the need for transport at the source;
- Rethinking transport systems, promoting inter-modality and encouraging the use of the most energy efficient mode of transport, i.e. wherever possible switch from air to rail, from personal vehicles to public transport or non-motorised transportation;
- Improving fuel efficiency of each mode of transport, and promoting the use of alternative fuels.

Based on The Centre for Sustainable Transportation, www.cstctd.org; and UNEP DTIE, www.unep.fr/enquiry/transport/

Sustainable Urban Drainage System

Sustainable Urban Drainage System is Drainage system which controls the quantity of run-off from a development, improves the quality of the run-off and enhances the nature conservation, landscape and amenity value of a site and its surroundings.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Transit-Oriented Development (TOD)

Transit-oriented development is a mixed-use residential and commercial area designed to maximise access to public, and often incorporates features to encourage transit ridership. A TOD neighbourhood typically has a centre with a transit station or stop (train station, metro station, tram stop, or bus stop), surrounded by relatively high-density development with progressively lower-density development spreading outward from the centre. TODs generally are located within a radius of one-quarter to one-half mile (400 to 800 m) from a transit stop, as this is considered to be an appropriate scale for pedestrians, thus solving the last mile problem.

Institute for Transportation & Development Policy <https://www.itdp.org/tod-standard/>

Urban Agglomeration

Urban agglomeration is defined by UN-Habitat as “the built-up or densely populated area containing the city proper; suburbs, and continuously settled commuter areas. This may be smaller or larger than the metropolitan area.

UN-Habitat, 1995

Urban Agriculture

Urban and peri-urban agriculture (UPA) can be defined as the growing of plants and the raising of animals within and around cities. Urban and peri-urban agriculture provides food products from different types of crops (grains, root crops, vegetables, mushrooms, fruits), animals (poultry, rabbits, goats, sheep, cattle, pigs, guinea pigs, fish, etc.) as well as non-food products (e.g. aromatic and medicinal herbs, ornamental plants, tree products). UPA includes trees managed for producing fruit and fuelwood, as well as tree systems integrated and managed with crops (agroforestry) and small-scale aquaculture.

FAO (undated), <http://www.fao.org/urban-agriculture/en/>

Urban Area

Urban area is generally understood as a continuously built-up area with a population over 2,000 inhabitants at a density of around or over 1,000 per square kilometre and with primarily non-agriculture activities.

Based on UN World Urbanization Prospect 2007

Urban Ecology

Urban ecology is concept derived from biology: the city is viewed as a total environment, as a life-supporting system for the large number of people concentrated there, and within this people organise themselves and adapt to a constantly changing environment. Regarded as the same as human ecology.

European Environment Information and Observation Network, <http://www.eionet.europa.eu>

Urban Encroachment

Urban encroachment is the result of urban sprawl whereby planned or unplanned development of the built environment invades previously undeveloped (and frequently productive) land. This includes agricultural land, as well as natural habitat that performs ecosystem services, particularly the regulating and supportive services that underlie urban infrastructure.

Based on EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>

Urban Environmental Accords (UEA)

The Urban Environmental Accords (UEA) is a set of 21 objectives designed to achieve an “ecologically sustainable, economically dynamic, and socially equitable” urban future. The UEA objectives are based on existing best practices and applied to seven sectors: energy, waste reduction, urban design, urban nature, transportation, environmental health and water.

United Nations Environment Programme, 2012; WORKING Paper: Framework elements for assessing urban environmental performance.

Urban Green Growth

Urban green growth means fostering economic growth and development through urban activities that reduce negative environmental externalities, the impact on natural resources and the pressure on ecosystem services. The greening of the traditional urban economy and expanding the green urban sector can generate growth (through increased supply and demand), job creation and increased urban attractiveness. These effects are in part the result of stronger interactions at the urban level among economic efficiency, equity and environmental objectives.

Hammer, S. et al. (2011), "Cities and Green Growth: A Conceptual Framework", OECD Regional Development Working Papers 2011/08, OECD Publishing, <http://dx.doi.org/10.1787/5kg0t1mzx34-en>

Urban Heat Island Effect

The Urban heat island is a microclimatic phenomenon that occurs in urban areas, and results in a tendency to be hotter than its surroundings. It consists in a significant increasing of the temperature in the urban area respect to the surrounding peri-urban and rural neighbourhoods. This phenomenon is known and studied since eighties and is caused by: physical characteristics of the surfaces: materials composing urban surfaces, such as concrete and asphalt, that absorb rather than reflecting solar radiations; lack of natural evaporative surfaces (vegetation) that, in rural areas, contribute to maintain a stable energy balance; augmentation of the vertical surface that both provide an increased surface absorbing and reflecting solar radiation as well as block winds that could contribute to the lowering of the temperature (canyon effect); human activities that mainly consists in heat produced by heating and cooling plants, industrial activities, vehicles, etc.; high level of pollutants that alter the atmosphere.(2)

Based on EU; 2011, Let's speak sustainable construction Multilingual Glossary, <http://www.eesc.europa.eu/resources/docs/eesc-2011-01-en-fr-de-es.pdf>; (2) eu.uhi.eu, CENTRAL EUROPE Programme

Urban Management

Urban management is the administration, organisation and planning performed for cities or towns, particularly the process of converting farmland or undeveloped land into offices, businesses, housing and other forms of development.

European Environment Information and Observation Network, <http://www.eionet.europa.eu>

Urban Metabolism

Urban Metabolism is a model that facilitates the description and analysis of the flows of materials and energy within cities. A city is a large group of living organisms. As such, it obeys physical and biological laws and the activities of a city – the 'urban metabolism' – generates two different types of environmental impact: the city takes resources from the environment (inputs) and produces different types of waste (outputs) which are variously assimilated by the environment. The inputs can cause depletion of resources and the outputs can generate toxicity and contribute to the depletion of resources (e.g. groundwater pollution). Outputs can also have direct impact on the health and well-being of people (e.g. local air and water pollution). Today's cities have large linear metabolisms characterised by high flows of energy and materials. The study of urban metabolism quantifies the inputs, outputs and storage of energy, water, nutrients, materials and wastes for an urban region.

United Nations Environment Programme, 2012; WORKING Paper: Framework elements for assessing urban environmental performance.

Urban Mining

Urban mining is the process of reclaiming compounds and elements from products, buildings and waste. It implies the reduction of influx of resources by making better use of the existing stocks of materials available in the urban environment through increased recycling rates. It contributes to move toward more resource efficient cities and to scale-up their benefits.

Based on urban mining.org, <http://urbanmining.org/> and on UNEP (undated) cities and buildings, http://www.unep.org/SBCI/pdfs/Cities_and_Buildings-UNEP_DTIE_Initiatives_and_projects_hd.pdf

Urban Planning

Urban planning is the activity of designing, organising or preparing for the future lay-out and condition of a city or town; it consist of a conscious control of growth or change in a city, town, or community, taking into account aesthetics, industry, utilities, transportation, and many other factors that affect the quality of life.

based on *European Environment Information and Observation Network*, <http://www.eionet.europa.eu/>; and *Dictionary of Construction*, <http://www.dictionaryofconstruction.com/definition/city-planning.html>

Urban Regeneration

Urban regeneration is a process of upgrading and redeveloping a part of a city, led by either a municipality or by private developers. Developing planned residential areas can yield more socioeconomic benefits to a city – more extensive basic urban infrastructure, more secure tenure and property rights, and higher returns on public investments – than upgrading neighbourhoods. Urban regeneration, and in particular the redevelopment of informal areas and squatter settlements into areas representing mixed income, have benefits to inner-city redevelopment and modernization.

UN-Habitat (2012), Urban Patterns for a Green Economy: Leveraging Density, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3343>

Urban Sprawl

[T]he increasing geographical spread of urban areas into areas that were not previously built up. (1) This urban form is often costly to service and has often led to socio-spatial fragmentation of cities. Additionally, sprawl into peri-urban areas has a negative impact on agricultural and natural land and systems. (2) Sprawl is a result of urban and commercial development coupled with growing economic prosperity. In many places in the world, there is also a traditional preference for suburban development going hand in hand with a preference for larger homes. This has led to a surge in energy use and dependence on motorized transport, as well as an overall increase in per capita GHG emissions. The number of personal vehicles grows much faster than the urban population, posing a negative impact on the environment and on infrastructure. Developing countries are increasingly affected by peri-urbanization. The resulting problems of this type of urbanization are manifold, and include intense pressures on resources, slum formation, lack of adequate services such as water and sanitation, poor planning, and degradation of farmland. They are of particular significance in developing countries, where planning regulations may be weak or weakly enforced, and result in areas with complex patterns of land tenure and land use. (1)

(1) *Global Report on Human Settlements 2011: Cities and Climate Change* (2) *UN-Habitat (2012), Urban Patterns for a Green Economy: Leveraging Density*, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3343>

Urban Village

Urban village is the Urban form typically characterised by: medium density development (to maximise space use); mixed use zoning (housing mixed with shops, services and industry to reduce travel); the provision of good public transport (to reduce car dependency) and an emphasis on integrating pedestrian and public spaces to create a 'village' feel in a city context (to enhance quality of life).

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Urban Waste Water

Urban wastewater is domestic wastewater or the mixture of domestic wastewater with industrial wastewater and/or run-off rainwater.

European Commission, Glossary of terms related to Urban Waste Water, http://ec.europa.eu/environment/water/water-urbanwaste/info/glossary_en.htm

Urbanization

»[The] growing share of the population lives in urban settlements (1) [often due to] the physical growth of urban areas [that] result[s in] global change in population location (2). Urbanisation is often used more loosely, however, to refer to a broad-based rural-to-urban transition involving population, land use, economic activity and culture, or indeed any one of these. Thus, it is frequently used to refer to changes in land-use for specific areas (usually on the periphery of urban concentrations) as this land becomes 'urbanised' and is sold and developed for urban use (e.g. the sale of plots for housing) (1). [In any case, t]he "pull" of the city has always been based on the benefits of urban agglomeration because living in cities permits the individual to take advantage of the opportunities of proximity, diversity and marketplace competition. However, most urbanization is likely to occur in cities relatively unprepared to accommodate these numbers, with potential negative repercussions for quality of life, economic development and the natural environment. (2) Rapid, unmanaged development often results in a pattern of urban sprawl and/or development on productive and biologically critical areas and habitats, which radically alters the form of the ecological and biodiverse landscape. (3)

(1) Gordon McGranahan and David Satterthwaite. 2014. *Urbanisation concepts and trends*. IIED Working Paper. IIED, London. <http://pubs.iied.org/10709IIED> (2) UN-Habitat (2012), *Urban Patterns for a Green Economy: Leveraging Density*, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3343> (2) UN-Habitat (2012), *Urban Patterns for a Green Economy: Working with Nature*, <http://mirror.unhabitat.org/pmss/listItemDetails.aspx?publicationID=3343>

Vulnerability

Vulnerability refers to the characteristics and circumstances of a community, system or asset that make it subject to the damaging effects of a hazard. The relative lack of capacity of a community or ability of an asset to resist damage and loss from a hazard. The conditions determined by physical, social, economic, political and environmental factors or processes that increase the exposure of a community to the impact of hazards.

UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries

Walkable Urbanism

Walkable urbanism is a development strategy in opposition to suburban sprawl. It advocates housing for a diverse population, a full mix of uses, walkable streets, positive public space, integrated civic and commercial centres, transit orientation and accessible open space. It also advocates for density and accessibility of commercial and government activity.

Based on Strategies Towards Energy Performance and Urban Planning (STEP UP) Gothenburg/Anna Svensson, 2015 <http://http://www.stepupsmarcities.eu>

Waste

Wastes are defined as "substances or objects which are disposed of or are intended to be disposed of or are required to be disposed of by the provisions of national law". Wastes may be generated during the extraction of raw materials, the processing of raw materials into intermediate and final products, the consumption of final products, and other human activities. Residuals recycled or reused at the place of generation are excluded. (1)

(1) *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, article 2, OECD Glossary of statistical terms (<http://stats.oecd.org/glossary/detail.asp?ID=2896>, Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997)*

Waste Hierarchy

Waste hierarchy is a five-step waste hierarchy where prevention is the best option, followed by re-use, recycling and other forms of recovery, with disposal such as landfill as the last resort.

Based on Being wise with waste: the EU's approach to waste management

Waste Management

Waste management is the collection, transport, recovery and disposal of waste, as well as strategies that aim to reduce the likelihood of waste being produced. Strategies and systems for collecting, transporting, processing (waste treatment), recycling or disposing of waste materials.

UNEP and Skat – Swiss Resource Centre and Consultancies for Development, 2012, Sustainable Reconstruction in Disaster-Affected Countries

Wastewater

Wastewater is spent used water of a community or industry which usually contains dissolved and suspended matter.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Water Conservation

Water conservation means reducing the usage of water and recycling of waste water for different purposes like cleaning, manufacturing, agriculture etc.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

Water Footprint

Water footprint is a measure of the impacts of the direct and indirect water consumption associated with all activities in a product's life cycle. This is especially relevant for water-intensive processes and at locations where water scarcity is a serious problem. The water footprint helps us comprehend the massive volumes of water required to support our lifestyles – especially to grow food. As human population and consumption continue to grow, so too do our demands for water – but the volume of freshwater available does not.

Based on UNEP/SETAC Life Cycle Initiative and on ISBN 978-2-940443-87-1 WWF; Living Planet Report® 2014

Water Supply System

System Water supply system is a system for collecting, transmission, treatment, storage and distribution of water from source to consumers, for example, homes, commercial establishments, industry, irrigation facilities and public agencies for water-related activities (fire-fighting, street flushing and so forth).

United Nations, Glossary of Environment Statistics

Water Treatment

Purification of water to make it suitable for drinking or for any other use.

United Nations, Glossary of Environment Statistics

Well-being

Well-being means access to opportunities; education; happiness; healthy environment; human capital improvement; liveable city; prosperity; quality of life; security; welfare.

Based on ISO 37101

World Green Building Council

The World Green Building Council is a network of national green building councils in more than one hundred countries, making it the world's largest international organisation influencing the green building marketplace. The WorldGBC's mission is to strengthen green building councils in member countries by championing their leadership and connecting them to a network of knowledge, inspiration and practical support. Green building councils are member-based organisations that empower industry leaders to effect the transformation of the local building industry toward sustainability. With one hundred thousand buildings and almost one billion square metres of green building space registered, the influence and impact of this global network is a significant force for social and environmental change.

World Green Buildings Council , <http://www.worldgbc.org/>

Zero Carbon Building

Zero carbon building is the designing of a building with an annual zero net energy consumption and zero carbon emissions.

EU; 2011, Let's speak sustainable construction Multilingual Glossary

About the UNEP Division of Technology, Industry and Economics

Set up in 1975, three years after UNEP began, the Division of Technology, Industry and Economics (DTIE) provides solutions to decision-makers and helps change the business environment by offering platforms for multi-stakeholder dialogue and cooperation, innovative policy options, pilot projects and creative market mechanisms to improve the quality of the environment and the well-being of citizens.

Within UNEP, DTIE has the mandate of delivering on environmental sustainability through technology, industry and economic policy by addressing environmental issues at global and regional levels, providing leadership and encouraging partnerships, and by informing and enabling nations and people to improve their quality of life without compromising that of future generations.

DTIE plays a leading role in three of UNEP's seven strategic priorities, namely in climate change, chemicals and waste, and resource efficiency.

The Office of the Director, located in Paris, coordinates activities through:

- > **The Chemicals and Waste Branch** (Geneva, Paris and Osaka), which catalyses global actions to bring about the sound management of chemicals, the improvement of chemical safety and the management of waste.
 - > **The International Environmental Technology Centre - IETC** (Osaka) promotes the collection and dissemination of knowledge on Environmentally Sound Technologies with a focus on waste management. The broad objective is to enhance the understanding of converting waste into a resource and thus reduce impacts on human health and the environment (land, water and air).
 - > **OzonAction** (Paris) supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition to ensure implementation of the Montreal Protocol.
- > **The Economy and Trade Branch** (Geneva), which helps countries to integrate environmental considerations into economic and trade policies, and works with the finance sector to incorporate sustainable development policies. This branch is also charged with producing green economy reports.
- > **The Energy, Climate, and Technology** (Paris, Nairobi, and Copenhagen), which fosters energy and transport policies for sustainable development and encourages investment in renewable energy and energy efficiency.
- > **The Sustainable Lifestyles, Cities and Industry Branch** (Paris), which delivers support to the shift to sustainable consumption and production patterns as a core contribution to sustainable development.

DTIE works with many partners (other UN agencies and programmes, international organizations, governments, non-governmental organizations, business, industry, the media and the public) to raise awareness, improve the transfer of knowledge and information, foster technological cooperation and implement international conventions and agreements.

For more information,
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Global events such as Rio+20, the Summit for the adoption of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals, the COP 21, and the Habitat III conference show how the international community increasingly recognizes that many solutions to social, environmental and economic challenges facing our planet can be found in cities.

In the context of a proliferation of initiatives and projects, the ABC for Sustainable Cities aims to contribute to the international debate and action by clarifying key terms and concepts and providing policy makers with a key tool to understand a complex reality.

DTI/1949/PA