Glossary

A

Acidification: The pH of different aquatic ecosystems determines the health and biological characteristics of those systems. A range of industrial activities, including mining and power production from fossil fuels, can cause localized acidification of water systems.

Acid rain: Rainfall that is acidic due to contact with various air pollutants such as carbon dioxide, sulphates, and nitrogen oxides. Acid rain contaminates soil, plants, and water, damages building, and can affect human health.

Afforestation: The establishment of forest by natural succession or by the planting of trees on land where they did not formerly grow, e.g. establishment of monocultures of pines, eucalyptus, or wattles in primary grasslands in South Africa.

Agenda 21: A global plan of action for sustainable development agreed to by most of United Nations member States at the United Nations Conference on Environment and Development (also called the Earth Summit or UNCED) held in Rio de Janeiro, Brazil, in 2002. The Agenda 21 document contains 40 separate sections of concern and outlines a total of 2,500 recommendations. It focuses on partnership involving the public and relevant stakeholders to resolve developmental problems and to plan strategically for the future.

Agrarianization: The movement towards the economic activity of agriculture.

Agriculture: The cultivation of soil and rearing of animals to feed the human population. As more people move from rural areas to cities, more intensive farming methods and more extensive areas are used for farming to increase food production.

Algae: Simple plants containing chlorophyll or other photosynthetic pigments, found widely in freshwater and marine environments, and ranging from single cells to plants many metres in length.

Air pollution: Air containing gases, dust, fumes, or odour in potentially harmful amounts (that is, in amounts that could be harmful to the health or comfort of humans and animals, or that could damage plants and materials).

Ambient air: All air outside buildings, stacks, and exterior ducts.

Anopheles mosquito: The species of mosquito that is a carrier for the malaria parasite.

Anthropocentric: The idea that human beings are the central feature of the world; the interpretation of environmental and resource issues solely in terms of human values and standards.

Assimilation: The ability of an ecosystem to absorb substances such as human waste and pollutants. The capacity of an ecosystem to absorb human-derived impact without incurring long-term loss of integrity. Examples of assimilation are photosynthesis, nitrogen fixation, and the absorption of nutrients after digestion into the living tissue.

Aquatic: Growing, living, or found in water.

Aquifer: A body of permeable rock that can store significant amounts of water.

Atmosphere: The thin layer of gases surrounding earth which sustain life on the planet and which is composed mainly of nitrogen and oxygen. It consists of two main layers: the troposphere, which extends from sea level to about 17 km above sea level, and the stratosphere, which extends from 17 kilometres above sea level to about 48 km above sea level.

B

Basic sanitation: The prescribed minimum standard of services necessary for the safe, hygienic, and adequate collection, removal, disposal, and purification of human excreta, domestic wastewater, and sewage from households, including informal households.

Benthic: The lowermost region of a freshwater or marine profile in which organisms reside.

Biodiversity/biological diversity: The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part. The term also includes diversity within species, between species, and of ecosystems.

Biodiversity hotspot: An area that is identified as a conservation priority because it contains a high number of endemic species and faces extreme threats.

Biodiversity mainstreaming: The incorporation of biodiversity considerations into all human activities including programmes, plans, and policies.

Biodiversity target: A biodiversity objective expressed in a qualitative or quantitative manner, normally to be achieved by a specified date.

Biomass: The total mass of all living organisms present in an ecosystem, usually expressed as a dry weight.

Biome: One of the world's major environmental communities classified according to the predominant vegetation and characterized by adaptations of organisms to that particular environment. Major biomes include: aquatic, desert, forest, grassland and tundra.

Bio-prospecting: Research and development of indigenous biological resources for commercial exploitation.

Biosphere: The envelope around the earth containing the planet's life-supporting systems (e.g. the atmosphere, soil, inland water, and the sea).

Biosphere reserve: A locality that forms part of an international network of protected areas designated by the United Nations Educational, Scientific and Cultural Organization (UNESCO), located in areas of high biodiversity where research into and the monitoring of biodiversity is carried out with the participation of local people.

Biota: The combined flora and fauna of a particular region or period.

Birth rate: The number of childbirths per 1,000 persons per year.

Bush encroachment: The conversion of a grassland dominated vegetation type to one that is dominated by woody species; an increasing woody plant density.

C

CAPE Estuaries Programme: The Cape Action for People and the Environment (CAPE) Programme, and particularly the CAPE Estuaries Programme, aims to develop estuary management plans and the capacity to implement them. This programme was developed as a joint venture between government, NGOs and civil society and aims to unite stakeholders in conserving biodiversity and in creating benefits for the people of the Cape Floristic Region. The initiative is co-ordinated by the South African National Biodiversity Institute (SANBI).

Carbon dioxide (CO_2): A gas that occurs naturally in the atmosphere. It is produced when animals (including humans) breathe out, when vegetation rots, and when material containing carbon is burnt or broken down.

Carbon sinks: Carbon reservoirs and conditions that take in and store more carbon than they release (e.g. forests and oceans).

Carbon tax: A tariff charged by governments on business, industry, and energy sources that emit greenhouse gases, particularly carbon dioxide, through the burning of fossil fuels (coal, oil, natural gas). The charge is typically levied per tonne of carbon dioxide.

Carcinogenic: A substance contributing to the development of cancer in animal tissues.

Carrying capacity: The maximum population of a given organism that a particular environment can sustain.

Catchment: The area of land drained by a particular stream or river.

Catchment management: A philosophy, process, and implementation strategy to achieve a balance between the utilization and the protection of environmental resources in a particular catchment area.

Child mortality: Number of children dying before the age of five years, per 1,000 births per year.

Chlorofluorocarbons (CFCs): Ozone-destroying chemicals released mainly by cooling systems such as air conditioners and refrigerators.

Clean development mechanism: A proposition according to which industrialized countries or their companies could earn emissions credits, while developing countries acquire technology and capital and earn emissions credits that can be banked or sold.

Cleaner production: Improvements to an industrial production process in order to use less energy, water, or other inputs, or to reduce the generation of waste.

Climate change: The variation in the earth's global climate or in regional climates over time. It includes changes in the variability or in the average state of the atmosphere, or average weather, over timescales ranging from decades to millions of years. Anthropogenic climate change refers to climate change that is attributable directly or indirectly to human activities that alter the composition of the global atmosphere.

Coastal access: The means and ways to gain access to the wider coastal zone that is not always explicit, i.e. cannot always be mapped. Accessibility is often impeded by a lack of parking facilities, high entry fees, or in an urban context, a lack of public transportation to the beach.

Coastal zone: The area of land and sea along a coast. It includes estuaries, onshore areas, and offshore areas, wherever they form an integral part of the coastal system.

Commodity market: Market where raw/primary products are exchanged.

Communal areas: Areas of land that is owned and managed communally, generally by traditional authorities.

Conservation: The maintenance of environmental quality and functioning.

Consumption: The purchase and/or use of goods and services.

Contractual parks: Protected areas established as a result of contracts between government agencies and local communities, where the local communities retain their title to the land in the park.

Convention: An agreement drafted by an international, independent panel, which various governments then sign, to support specific action.

Co-operative governance: In South Africa, government is constituted as national, provincial and local spheres of government which are distinctive, interdependent and interrelated. All spheres of government must observe and adhere to the principles in Section 41 of the South African Constitution and must conduct their activities within the parameters that Chapter 3 provides.

D

Deforestation: The permanent clearing of an area of forest or woodland.

Degradation: The reduction or loss of the biological or ecological productivity of an area (see Desertification).

Demersal fish: Fish that live on, or adjacent to, the bottom of the sea.

Demography: The study of the structure of populations.

Dependency ratio: A measure of the portion of a population that is composed of dependents (that is, people who are too young or too old to support themselves).

Desalination: The process of removing dissolved salts from salt- or brackish (slightly salt) water, through the use of a wide spectrum of water treatment technologies, making it fit for consumption by humans or for use for agricultural and other activities.

Desertification: The degradation of land in arid, semi-arid, and dry sub-humid areas, resulting from various factors including climatic variations and human activities.

Development: A process of change that represents planned progress of some kind. For example, developing the economy of a region or country can take place through the expansion of economic activities, the improvement of people's skills, or job creation.

Drivers: These are the primary agents driving change in the environment, and may be human induced or natural. They include the underlying socio-economic and political agents of change, such as population growth and the desire for increased consumption. Drivers can also be described as 'wants'. Some indirect drivers such as governance structures, socio-cultural perceptions, population demographics and technological dependence can also be included. Driving forces emanating from natural processes (e.g. solar cycles) are possible, but are typically too infrequent, not well understood or operate over timescales that do not relate easily to the 4-yearly reporting framework of the Environment Outlook process.

E

Eco-efficiency: The ecological efficiency of goods and services, assessed by measuring their economic price and checking it against its production or manufacturing success in reducing environmental impact, improving quality of life, and lessening the overall adverse environmental impact on nature. Being more eco-efficient means creating more goods and services while using fewer resources and creating less waste and pollution.

Ecological footprint: A measure of the 'load' imposed by a given population on nature. It represents the land area of average quality needed to sustain current levels of resource consumption and waste discharge by that population. The bigger the footprint the greater is the impact that it represents.

Economic growth: The increase in a nation's capacity to produce goods and services, usually expressed as a rate of change in output from one year to the next.

Ecosystem: The dynamic complex of animal, plant, and micro-organism communities and their non-living environment (soil, water, climate, and atmosphere) interacting as a functional unit.

Ecosystem services: The beneficial functions provided by ecosystems, such as water quality regulation, nutrient cycling, soil fertility maintenance, regulation of the concentration of atmospheric gases, and cultural and recreational opportunities.

Ecotourism: Tourism in which the natural environment is the main tourist interest, and the exercise of which does not potentially harm the environment.

Effluent: Water (usually wastewater) that flows out of a man-made system into a river or the sea.

El Niño: (Meaning 'the Christ Child' in Spanish) is the name of a warm ocean current appearing periodically along the coast of Ecuador and Peru. In contrast to the normal, cold, north-flowing current, El Niño (when it flows) causes warming in the Pacific region, which influences world weather patterns by affecting air and ocean temperatures. A serious El Niño event can cause changes in climate over southern Africa (see La Niña).

Emission: A noise or a liquid or gaseous effluent that is discharged into the environment.

Emissions inventory: A listing, by source, of the amounts of air pollutants discharged into the atmosphere. It is used to establish emission standards.

Emissions trading regime: A free market solution to problems caused by the adverse impacts of pollution, in which a country is allocated a 'pollution quota' and the freedom to sell the portion of the quota that it does not use (see Kyoto Protocol).

Endangered species: A plant or animal species whose number of individuals or whose population has been reduced to a critical level or whose habitats have been reduced so drastically as to cause an imminent risk of extinction.

Endemic: A plant or animal species that occurs and is restricted to a particular geographical region is said to be 'endemic' to that region, owing to factors such as isolation or response to soil or climatic conditions.

Energy: The capacity of matter or radiation to do work.

Environment: The surroundings within which humans exist.

Environmental degradation: The reduction of the capacity of the environment to meet social and ecological objectives and needs.

Environmental governance: The processes of decision making involved in the control and management of the environment and natural resources.

Environmental health: Well-being based on the health of the environment, both natural and built.

Environmental Impact Assessment (EIA): The process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of development proposals before major decisions are taken or commitments made. The EIA Regulations require that specific procedures be followed, and reports (scoping and/or EIA reports) prepared for those activities listed as potentially having a substantial detrimental effect on the environment.

Environmental Implementation Plan (EIP): A statutory instrument for promoting co-operative governance for environmental management among different spheres of government.

Environmental indicator: Physical, chemical, biological, or socio-economic measures that can be used to objectively assess the quality and quantity of natural resources and of the environment.

Environmental justice: A term used in the social sciences to describe injustices in the way in which natural resources are used. It is often also used in the context of attempts to right the wrongs of past practices that discriminated against the poor and the disadvantaged.

Environmental management: The deliberate and multidisciplinary process of managing environmental resources, which requires the careful preparation, planning, and administration of environmental policies and standards. It aims to ensure that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment (see ISO 14000 series).

Environmental Management System (EMS): Documented procedures drawn up in terms of a South African Bureau of Standards (SABS) code of practice to implement the requirements of ISO 14000. The code is an international standard and provides the basis for uniform EMS, which will conform to wider international standards and requirements.

Environmental Sustainability Index (ESI): An index constructed by Yale University that ranks countries according to their performance based on a range of aspects of environmental sustainability.

Estuary: The coastal body of water that has a free connection with the open sea and where fresh water, derived from land drainage, is mixed with sea water.

Eutrophication: A process of nutrient enrichment of aquatic ecosystems, mainly by nitrates and phosphates from agricultural pollution, which stimulates excessive plant growth (algal blooms). This growth in turn reduces dissolved oxygen in the water when dead plant material decomposes and can cause other organisms to die.

Evapotranspiration: A combined term for water lost as vapour from a soil or open water surface (evaporation) and water lost from the surface of a plant, mainly via the stomata (transpiration).

Exclusive Economic Zone (EEZ): A zone in the sea under a country's national control, up to 200 nautical miles wide. The coastal country has the right to explore and exploit and the responsibility to conserve and manage all living and non-living resources in its area.

Externality: Economic activities that cause uncompensated environmental loss or damage to others.

Extractive Industry Transparency Initiative (EITI): An international initiative that aims to ensure that the revenues from extractive industries contribute to sustainable development and poverty reduction.

F

Fauna: All the animal life of a habitat or a region at a given time.

Fertility rate: The number of children born alive to a woman during her lifetime.

Floodplain: An area beside a river that is seasonally flooded when water levels rise because of high rainfall.

Flora: All the plant species that make up the vegetation of a given habitat or area at a given time.

Forestry: The practice of growing and managing forest trees for commercial timber production. It includes the management of specifically planted forests and of native or exotic tree species, as well as the commercial use of existing indigenous forests.

Food security: The assured availability and access (physical and economic) to adequate food (in terms of quality and quantity) by all people at all times, as required for a healthy, active, and productive life.

Fossil fuels: Mined energy sources, such as coal, gas, and petroleum that are derived from the remains of prehistoric animals and plants.

Full-cost accounting: A method of accounting that aims to identify, quantify, and allocate all costs associated with a product or process, including environmental and social costs.

Fynbos: Afrikaans word for 'fine-leaved bush'; a biome in South Africa's southern Cape area, comprising shrubs and shrubby woodland with patches of hardwood.

G

Genetically modified organism (GMO): Is a type of genetically engineered organism through which a gene from one organism is isolated and transferred to cells of another organism, where it is incorporated into the recipient's chromosomes and expressed. During the 1990s, there was dramatic growth in the commercial applications of this new technology, including the development of genetically modified (GM) crops.

Gini-coefficient: A measure of inequality. It is normally used to measure income inequality, but can be used to measure any form of uneven distribution. The Gini-coefficient is a number between 0 and 1, where 0 corresponds with perfect equality (e.g. where everyone has the same income) and 1 corresponds with perfect inequality (where one person has all the income, and everyone else has zero income).

Global Environmental Facility (GEF): Established in 1991 by World Bank resolution, GEF helps developing countries to fund projects and programmes that protect the global environment.

Global Stewardship Corruption Perception Index: An annual measure compiled by Transparency International, designed to measure the performance of governments against set criteria of bribery and corruption.

Global warming: A gradual warming of the air temperature in the earth's lower atmosphere as a result of the build-up of greenhouse gases (e.g. carbon dioxide, nitrous oxides, methane, and ozone) (see Greenhouse effect).

Globalization: The process by which the world's nations and communities are becoming more closely connected by modern telecommunications and more strongly interdependent economically, socially, and politically. The process carries with it the pressure to conform to global standards and economic approaches.

Governance: The systems of values, policies, and institutions by which society manages its economic, political, and social affairs through interactions within and among the state, civil society, and the private sector.

Grassland: A habitat/ecosystem/biome that has vegetation dominated by grasses.

Green Scorpions: The popular name of a South African enforcement unit empowered by the National Environmental Management Act to ensure statutory compliance with environmental legislation.

Greenfields site: A site on which no development has yet taken place.

Greenhouse effect: A warming effect of the earth's lower atmosphere resulting when greenhouse gases trap heat from the sun and prevent that heat from escaping back into space (see Global warming).

Greenhouse gas: Any gas that absorbs infrared radiation in the atmosphere, thus allowing heat to enter the earth's atmosphere but not to leave it.

Gross Domestic Product (GDP): The value of all goods and services produced by all factors of production in an economy by both residents and non-residents over a period of a year.

Groundwater: Water that is stored within the air spaces of soil and in rock formations.

Groundwater recharge: Replacement of water, normally through rainwater percolating into the ground to replenish water lost from the groundwater store by abstraction, evaporation, or transpiration.

H

Habitat: The place where an organism or community occurs. It is characterized by its physical properties and by the other life forms found there.

Habitat fragmentation: The break-up of natural habitat into small non-contiguous parts. This becomes problematic when the portions are too small to function effectively on their own.

Habitat loss: A process of land use change in which one habitat type is removed and replaced by some other habitat type. In the process of land use change, plants and animals that previously used the site are displaced or destroyed. This generally results in alteration or reduction in biodiversity (see Deforestation and Habitat fragmentation).

Hazardous waste: Waste that poses substantial or potential threats to public health or the environment.

Heritage: The sum total of sites of geological, zoological, botanical, archaeological, and historical importance. Heritage is that which we inherit wildlife and scenic parks, sites of scientific or historic importance, national monuments, historic buildings, works of art, literature and music, oral traditions, and museum collections, together with their documentation.

Holism: The term comes from the Greek holos, meaning 'complete, integrated'. This is a philosophy based on the idea that the whole is greater than the sum of its parts, that is, that a system may have properties over and above those of the parts and the way in which they are organized.

Homelands: Areas designated for black people according to their ethnic group, under the former apartheid government.

Human Development Index (HDI): A summary composite index that measures a country's average achievements in three aspects of human development: longevity, knowledge, and standard of living. It was created by the United Nations Development Programme (UNDP) and first presented in their Human Development Report in 1990.

Hydrocarbons: Any chemical compound that consists only of the elements carbon (C) and hydrogen (H). All hydrocarbons contain a carbon backbone, called a carbon skeleton, and have hydrogen atoms attached to that backbone. Examples of hydrocarbons include petroleum, coal and gas, and the fossilised remains of plants.

Hydrological cycle: The flow of water through the terrestrial and atmospheric environments.

Hydropower: Electricity generated by means of flowing water.

I

Immunosuppression: A state in which the ability of the body's immune system to respond to disease is decreased.

Impacts: 'Impacts' describe the consequences of the good or bad state of elements of the environment for sustainability, specifically on humans, the economy, ecosystems, as well as other environmental systems, and could include regional or global effects. For example: high levels of indoor air pollution may result in respiratory tract infections; land degradation may lead to decreased food production, increased food imports, increased fertilizer use, malnutrition and siltation of aquatic systems. The impacts should be seen as changes that are occurring within environmental, economic or social systems and their ability to perform functions or services for society.

Indicator: A measure that helps to assess the extent of the success with which goals are being achieved. Based on complex information or data, indicators are often used in State of the Environment reports to measure how resources are being managed.

Indicator species: A species whose presence or relative well-being in a given environment is indicative of the health of its ecosystem as a whole.

Indigenous species: Plants, animals, or microbes those are native to a particular area (see Fynbos).

Industrialization: A process of social and economic change, associated with technological innovation, through which a human society is transformed from a pre-industrial to industrial state.

Inflation rate: The percentage increase in the price of goods and services, normally measured year-on-year.

Infrastructure: The framework of key facilities that supports communities and their industrial and commercial activities and services.

Integrated Environmental Management (IEM): A code of practice to ensure that environmental considerations are fully integrated into the management of all activities, so as to achieve a desirable balance between conservation and development.

Integrated Pollution and Waste Management: Refers to an integrated approach adopted by the South African government to deal with the current problems relating to waste management and pollution.

Integrated resource management: See Integrated Environmental Management (IEM).

Inter-basin transfer: The transfer of water from one river system to another, in places where water would not naturally be transferred between the two systems.

Intergovernmental: This term refers to the relations among spheres of government and to relations among government agencies in the same sphere of government.

Intertidal zone: The area of the beach between the high and low tide watermarks.

Invasive alien species: Species that are intentionally or unintentionally introduced to an area where they would not naturally occur, which then reproduce and invade areas beyond those into which they were originally introduced.

Invertebrate: A species of animal without a backbone, e.g. a butterfly or a lobster.

ISO 14000 series: An international standard for environmental management systems developed by the International Standards Organisation (ISO), which ensures that actions and processes are carried out in a uniform manner. ISO 14000 sets out guidelines on how to manage environmental matters in different companies in different countries, and is often used to certify organizations as environmentally sound (see Environmental Management System (EMS)).

J

Johannesburg Plan of Implementation: A key outcome of the 2002 World Summit on Sustainable Development which constitutes a plan of action for more sustainable global development.

K

Karoo: Shrubby, semi-desert landscape.

Kyoto Protocol: The international protocol named for the city in Japan where it was adopted on 11 December 1997 at the Conference of Parties of the United Nations Framework Convention on Climate Change. It sets individual emissions limitations and reduction targets on six greenhouse gases through three flexible mechanisms: joint implementation, emissions trading, and cleaner development mechanism (CDM).

L

La Niña: (From the Spanish for 'female child') unusually cold sea surface temperatures found in the eastern tropical Pacific ocean. La Niña occurs approximately half as often as El Niño.

Land administration: The act or process of authoritative control over land.

Land degradation: Reduction or loss, in arid, semi-arid and dry sub-humid areas, of the biological or economic productivity and complexity of rain-fed cropland, irrigated cropland, or range, pasture, forest and woodlands, as a result of land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns such as: (i) Soil erosion caused by wind and/or water; (ii) Deterioration of the physical, chemical and biological or economic properties of soil; and, (iii) Long-term loss of natural vegetation (see Soil degradation).

Land reform: Redistribution of land to recognize the rights of all citizens.

Land rehabilitation: The process of returning land in a given area to some degree of its former self, after a process (such as may be conducted by business, industry, or a natural disaster) has damaged it.

Landfill: Places, such as quarries, used for disposing household and industrial waste. Normally, land is excavated and sealed to prevent the contamination of adjacent land or underground water.

Landscape: The patterns and structure of a specific geographic area or place, including its natural, physical, built, and socio-economic environments.

Land tenure: A type of land ownership.

Land transformation: The conversion of land, normally from natural habitat to human uses such as agriculture or settlements.

Land use change: Changes in the purpose for which land is used, as, for example, where land that was previously used for pasture becomes a human settlement.

Legislation: Is statutory law that is enacted (or 'promulgated') by a legislature or other governing body. The term may refer to a single law or to the collective body of enacted law. Before legislation becomes law it is known as a bill. In South Africa, legislation must be confirmed by the executive branch of government before it enters into force as law. Under the Westminster system, an item of legislation is known as an Act of Parliament.

M

Macroeconomics: A study of national economic aggregates.

Mariculture: The rearing of fish, shell-fish, and certain aquatic plants under controlled and managed conditions either in their natural environment in the sea or on land-based sea farms. Also called aquaculture or fish farming.

Marine: An umbrella term for things relating to the ocean, as in the terms 'marine biology' and 'marine geology'. In scientific contexts, the term almost always refers exclusively to saltwater environments.

Marine Protected Area (MPA): An area of marine or estuarine habitat where certain fish or plants are protected or where an entire ecosystem is set aside as a park or reserve.

Millennium Development Goals: The set of development goals contained in the Millennium Declaration of 2000, which are intended to guide actions for development globally.

Methane: An odourless and colourless hydrocarbon gas produced either by natural or artificial decomposition of organic material (see Greenhouse gas and Hydrocarbon).

Microbial contamination: contamination with bacteria, fungi, or other microbes that can cause disease.

Migration: Movement of all or part of a population to and from a geographical area. The movement may be temporary or permanent.

Mitigation: Measures taken to reduce adverse effects on the environment and humans.

Morbidity: The frequency of a sickness in a population.

Mortality: The frequency of death in a population or community.

Multilateral Environmental Agreements (MEAs): International environmental treaties that contain measures to prevent the degradation of environmental resources, such as the Convention on Biological Diversity (CBD).

N

Natural environment: The physical environment comprising all living and non-living things that occur naturally on earth.

Natural heritage: Natural features consisting of physical and biological formations, or groups of such formations, which are of outstanding universal value from an aesthetic or scientific point of view.

Natural resources: The basic minerals and resources that are produced through the earth's own inherent natural processes and systems.

National park: Land set aside for the protection of plants, animals, and scenery, and for human enjoyment.

Non-governmental organization (NGO): An organization that is not part of a government and was not founded by a state. NGOs are typically independent of governments. Although the definition can technically include for-profit corporations, the term is normally restricted to social, cultural, legal, and environmental advocacy groups having goals that are primarily non-commercial.

Non-renewable resources: Resources that do not renew themselves in a human time-scale and cannot be replenished once exhausted, such as fossil fuels and copper.

Nutrient loading: The release of excessive nutrients into a water body from the catchment area, often through the use of fertilizers or other pollutants (see Eutrophication).

Nuclear power: Energy created by the process of fission from atomic nuclei, as generated by nuclear power stations (see Radioactive waste).

O

Overgrazing: Grazing by livestock or wildlife to the point where grass cover is depleted; leaving bare, unprotected patches of soil, with a corresponding increase in erosion by water and wind.

Over-utilization: Overuse of resources, thereby affecting their future use and the condition of the environment.

Ozone: A gas molecule composed of three oxygen molecules, which occurs naturally in the stratosphere where it protects earth's surface from harmful ultraviolet radiation. In the troposphere it acts as a greenhouse gas.

Ozone depletion: The destruction or thinning of the stratospheric ozone layer that shields the earth from harmful ultraviolet radiation.

P

Particulates: A term used to describe either particles of solid matter (for example, dust, soil, soot and ash) or droplets of liquid (for example, sulphuric acid, salts, dioxins and pesticides) that are small or light enough to remain suspended in the atmosphere for relatively short periods of time (See PM_{10}).

Pelagic: Relating to communities of marine organisms that belong to the open sea, living free from direct dependence on the sea bottom or shore.

Persistent Organic Pollutants (POPs): Chemical substances that are toxic persist in the environment for long periods of time, and bio-accumulate as they move up through the food chain.

Perennial: (In reference to a water body) flowing or occurring throughout the year.

Pesticides: Can be categorized as a diverse group of chemicals that kill insects or weeds, and which can harm humans and the natural environment. Pesticides can migrate by wind or water to areas that they were not intended to reach, thus causing unintended damage to insect ecological systems that are essential for pollination.

Petrochemical industry: Broadly defined as that industrial activity which uses petroleum or natural gas as a source of raw materials, and whose products are neither fuels nor fertilizer.

PM_{10}: Any particulate matter with a diameter less than or equal to 10 micrometers.

Policy: A framework or basis of action to overcome identified problems or to achieve stated goals and objectives, which sets out guidelines for decision-making and action.

Pollution: The concentration of substances that are beyond the environment's capacity to handle. It refers to any substance released into the air, water, or soil by any process, which is capable of causing harm to humans or other living organisms. Pollution comes in many forms, including liquid effluent, solid waste, air emissions, noise, and smells (see Air Pollution, Solid waste, and Wastewater).

Population density: The number of organisms, species, or humans found in a given area.

Population dynamics: The study of the changes in the size, age, and gender composition of a population due to major biotic and/or abiotic factors.

Population growth: An increase in the number of organisms or species. In human demography, the population growth rate refers to the annual growth rate of the population calculated from mid-year.

Poverty: A certain level of material deprivation below which a person suffers physically, emotionally, and socially.

Poverty gap: The total income shortfall (expressed in proportion to the poverty line) of families with income below the poverty threshold, divided by the number of families.

Poverty line: A poverty threshold that takes into account household size and age composition and that is intended to indicate an income level below which subsistence needs are not met.

Precautionary principle: The principle included in policy and laws requiring that where the environmental consequences of a particular project, proposal, or course of action are uncertain, then the project, proposal, or course of action should not be taken.

Precipitation: All the forms in which water falls to the ground such as rain, sleet, snow, hail, and drizzle. It can also refer to the deposition of dust or other substances.

Pressures: The human activities and processes that act on the environment and cause environmental change. They are distinct from the driving forces since they relate directly to the use and exploitation of natural resources, as opposed to the driving forces which determine the scope or extent of the pressures. Effectively, the pressures satisfy the 'wants' or driving forces. Pressures can be divided into three main types: (i) excessive use of environmental resources; (ii) changes in land use; and, (iii) emissions (of chemicals, waste, radiation, noise) to air, water and soil.

Productivity: The rate at which plants, animals, and humans produce or have the capacity to produce.

Promulgation: The act of formally proclaiming new legislation to the public. This occurs when the law receives final formal approval. It is generally performed by the head of state who acts according to constitutional rules or convention.

Q

Quaternary catchment: A catchment on the fourth level of sub-division of catchments into sub-catchments; often used as a management unit.

R

Radioactive waste: Substances from nuclear processes that are contaminated and not reusable. Radioactive waste covers a spectrum from low-level waste (clothing and materials that have been used by people when handling radioactive sources) to high level waste (spent fuel elements) arising from the fission process in nuclear power stations (see Nuclear power).

Rainfall variability: The term used to describe a pattern of rainfall in which the amount of rain differs over a period of time, such as from year to year.

Ratification: Formal approval of an international agreement by a state's highest authority. In ratifying a Convention, a country agrees to be bound by the terms of the agreement and indicates to the international community a commitment to meet implementation goals.

Recycling: The process of collecting, cleaning and re-using waste materials that would otherwise be thrown away.

Recharge: Water added to underground water – for instance, rainfall that seeps into the ground.

Red List: A catalogue of species in danger of extinction and those already extinct, published by the International Union for the Conservation of Nature (IUCN).

Red List species: A species which appears on a Red List.

Red tide: A proliferation of marine plankton that is toxic and often fatal to fish and other organisms, including humans.

Regulation: A set of rules of conduct, standards, or procedures, which must be followed in order to comply with legislation, or a governmental or ministerial order that has the force of law.

Rehabilitation: See Land rehabilitation.

Renewable energy: Energy obtained from sources that are essentially inexhaustible (for example, wind energy, solar energy, and hydropower) (see Renewable resource).

Renewable resource: A resource produced as part of the functioning of natural systems at rates comparable with its rate of consumption. Under normal conditions these resources are continuously renewing themselves.

Resilience: The capacity to recover from a disturbance, for example, the capacity of a degraded natural area to return to its original state.

Resource: A general term for whatever can be used to provide the means to satisfy human needs and wants.

Resource management: The control of resources in a planned and responsible way.

Resource base: All the resources on which human societies depend, including natural resources such as land, water, and minerals, for example.

Response: The societal actions taken collectively or individually to ease or prevent negative environmental impacts, correct damage or conserve natural resources can be seen as 'responses'. Responses may include policy and regulatory action, environmental or research expenditures, public opinion and consumer preferences, changes in management strategies and the provision of environmental information.

Reverse osmosis: A process by which a solvent, such as water, is purified of solutes by being forced through a semi-permeable membrane through which the solvent, but not the solutes, may pass.

Riparian vegetation: Vegetation on or immediately adjacent to a river bank.

River catchment: All the land from mountain-top to seashore that is drained by a single river and its tributaries. Catchment areas vary in size. A big river may have a catchment area of several thousand square kilometres, whereas a smaller tributary could have a catchment area of only a few hectares.

Runoff: The flow of water over the ground surface.

S

Salinity: The measure of the total quantity of dissolved solids in water, in parts per thousand by weight.

Scenario: A story, told in words and numbers, about the manner in which future events could unfold, and offering lessons on how to direct the flow of events towards sustainable paths and away from unsustainable ones.

Sea level: The position of the air–sea-level interface against which all terrestrial elevations and sea depths are referred.

Sediment: Finely divided solid matter suspended in or falling to the bottom of a liquid or gas. Materials such as rocks and sands deposited by glaciers, wind or water.

Semi-arid: An area in which annual rainfall ranges from about 250–600 mm, rainfall is seasonal and variable, and evaporation is high.

Set-back line: A prescribed boundary indicating the limit of development activity along an ecologically sensitive or vulnerable area (e.g., wetland), or an area that poses a hazard or risk to humans (e.g., sea shore).

Shoreline access: The ability to move from an existing 'right-of-way' such as a road or public parking area, to a public beach. This is usually a route that provides direct access to the sea shore and that can be indicated on a map.

Siltation: The deposition of soil or fine rock particles on the bottom of river beds or other water bodies, often as a result of soil erosion in the surrounding area.

Social capital: The collaboration and co-operation within a community or society (through such mechanisms as networks, shared trust, norms, and values) to achieve mutual benefits.

Socio-economic: Linked to human activities, for example social, economic, cultural, and political activities. Themes that form part of the socio-economic environment are the economy, health, education, safety, and security as well as environmental governance.

Soil erosion: The loss or movement of soil by agents such as running water, wind, and gravity.

Soil conservation: An intervention to stop soil degradation and even reverse it, through physical structures such as contours and terraces, or through biological means such as intercropping and grass strips.

Soil degradation: The declining productivity of soils through physical, chemical, or biological deterioration resulting from a combination of physical factors such as drought, management factors such as cultivation of marginal land or overstocking, and historical and socio-economic factors such as inequitable distribution of land (see Land degradation).

Solid waste: Any solid, semi-solid, liquid, or contained gaseous materials discarded from industrial, commercial, mining, or agricultural operations, and from community activities. Solid waste includes garbage, construction debris, commercial refuse, sludge from water supply or waste treatment plants or air pollution control facilities, and from other discarded materials.

Species: A population of plants or animals that is able to interbreed to produce fertile offspring.

Species diversity: The range of different species in an area or habitat, expressed as a combination of the number of species and the abundance of each species.

Species richness: The number of species in an area or habitat.

Stakeholders: People and/or organizations involved or interested in an area or an issue, for example, residents, councillors, business people, trade unions, government institutions.

State: The 'State' describes the actual condition of the environment resulting from the pressures outlined above. For example, air quality in terms of the level of air pollution, and proportion of degraded area of land. The 'State' is described both in terms of current state and trends over time. A study of environmental trends will reveal whether the state of the environment is getting better or worse. It also gives an indication of how quickly changes are happening (the rate of change) and whether rates of change are increasing or decreasing.

Strategic Environmental Assessment (SEA): An environmental assessment that is carried out in connection with one or more strategic actions, policies, plans, or programmes. It is an important tool for helping planners and decision-makers to understand what will happen to an area if it were to accommodate different land uses.

Stratospheric ozone: The ozone in the layer of the earth's atmosphere, which extends from 15 to 35 km's above the surface and protects life on the planet from harmful ultraviolet rays.

Subsistence: A situation in which people provide for all their own needs from their immediate environment, rather than earning wages to pay for goods and services. Subsistence fishing, for example, refers to the level of fishing where the catch is enough to feed only the person fishing and his or her family.

Sulphur dioxide (SO_2): A colourless, acrid gas formed by the combustion of sulphur. It is an oxidizing and reducing agent and is used as a refrigerant, disinfectant, preservative, and bleach. It reacts with water to make sulphuric acid.

Surface water: Water found on the surface of the land, for example in rivers and dams.

Sustainable agriculture: Agriculture that does not degrade the soil or other resources on which it depends.

Sustainable development: Development that meets the needs of the current generation without compromising the ability of future generations to meet their needs, in turn.

Sustainable harvesting: The harvesting of natural resources (for example, fish) in such a manner that there is no long term decline in the population or its ability to reproduce.

Sustainability: The ability to meet the needs of present and future generations through the responsible use of resources.

T

Taxa: Plural of taxon (see Taxon).

Taxon/taxonomic group: A group of living organisms with similar characteristics of any taxonomic rank (family, genus, or species), e.g. mammals, insects, and flowering plants.

Taxonomy: The science of discovering, identifying, naming, and documenting the various life-forms making up the earth's biological diversity.

Terrestrial: Of or associated with land.

Thermal efficiencies: The efficiency with which a power source transforms the potential heat of its fuel into work or output, expressed as a ratio of the useful work done by the power source in a given time interval to the total heat energy contained in the fuel burned during the same time interval, both work and heat being expressed in the same units.

Threatened species: Plants or animals that are likely to become endangered within the foreseeable future.

Total Allowable Catch (TAC): The total amount (in kilograms or tonnes) permitted to be caught by the fisheries as a whole (subdivided into quotas allocated to participating permit holders).

Total Allowable Effort (TAE): The amount of effort (vessels, fishermen or hours) applied to a fishery.

Tradable emissions: Emissions that fall under a tradable emissions permit, which allows the holder to release a certain quantity of a specific emission. Should the permit holder reduce his or her emissions, he or she can sell the quantity that remains on the permit.

Trade liberalization: The reduction of tariffs and other measures that restrict trade.

Tragedy of the commons: The idea that if there is no clear ownership of the rights to use a natural resource, this resource tends to be over-exploited.

Transfrontier Conservation Area (TFCA): Relatively large areas, straddling frontiers between two or more countries and cover large-scale natural systems encompassing one or more protected areas. TFCAs involve a unique level of international co-operation between the participating countries.

Transparency International: An organization dedicated to fighting corruption.

Trickle-down effect: An economic theory that an increase in wealth in society will eventually increase the standard of living of all the people in that society.

Triple bottom line: One of the theories of sustainable development conceptualized by John Elkington, which suggests that true sustainable development in business, must consider not just the financial 'bottom line' of prosperity and profit, but also the bottom lines of environmental quality and social equity.

U

Ultraviolet (UV) radiation: The light between visible light and X-rays on the light spectrum, further divided by wavelength into A, B, and C bands. Most UV radiation is absorbed by the ozone layer before it reaches the lower reaches of the atmosphere. Excessive exposure to UV radiation results in skin cancer.

Unemployed: People who are unable to find a job but will accept work if given the opportunity.

Untransformed: When used in an environmental context, a term describing land or habitat in its natural state.

Upwelling: Vertical movement of deeper cold water towards the sea surface resulting from strong winds found along the West and South coasts of South Africa.

Urbanization: The main process driving the creation and ongoing remaking of towns and cities. An area is deemed urban if it has a population of more than 20,000 people. The term is often used with reference to the movement of people from rural to urban areas.

V

Vector-borne diseases: Diseases that are commonly transmitted through vectors. 'Vector' is a term used broadly to refer to any animal that transmits human disease or plays an essential role in a parasite's life cycle (for example, anopheles mosquitoes transmitting malaria, snail hosts of schistosomiasis, or rodent reservoirs of leshmaniasis).

Vegetation: The plant life of an area or region.

Veld: South African term for natural vegetation, usually grassland or savannah, typically containing scattered shrubs or trees.

Volatile Organic Compounds (VOCs): Primarily the lighter 'fractions' of oil or hydrocarbons, that is, the parts that evaporate easily because they have a low boiling point.

W

Waste: Something which nobody wants at a particular time and which needs to be disposed of (see Solid waste).

Waste management: A control system to limit, collect, and dispose of waste, through policies and environmental standards.

Waste treatment: The treatment of industrial or municipal waste with chemicals or natural organisms to reduce the amount of nutrients and other contaminants in the water before it is released to the environment.

Wastewater: Water left over after it has been used, for example in homes, gardens, and factories.

Water abstraction: The removal of water from a body of water.

Water balance: The balance between incoming water and the loss or use of water in a given area or system.

Water-borne diseases: Diseases such as cholera, typhoid fever, dysentery, gastroenteritis, hepatitis, and schistosomiasis, which are commonly transmitted through contaminated water.

Water erosion: A process of soil erosion beginning when raindrops bombard bare soil, loosening and washing away soil particles and culminating eventually in gully formation.

Water table: A more or less horizontal layer in the soil below which all spaces between soil particles are saturated with water.

Wetland: Land that is transitional between terrestrial and aquatic systems, where the water table is usually at or near the surface, or where the land is periodically covered with shallow water; in normal circumstances, such land supports or would support vegetation typically adapted to life in saturated soil.

Wind erosion: A process of soil erosion, most severe in dry flat areas where vegetative cover is poor and winds blow strongly.

World Heritage Site: Architectural works, works of monumental sculpture and painting, elements or structures of natural or archaeological elements, structures or landscapes, and combinations of features, which are of outstanding universal value from the point of view of history, art, or science. The protection of world heritage sites is the duty of the international community as a whole, and is governed by the United Nations World Heritage Convention.