


# Principles of Ecology and Management:

## International Challenges for Future Practitioners

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 Published by Goodfellow Publishers Limited, Woodeaton, Oxford, OX3 9TJ  
<http://www.goodfellowpublishers.com>

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Design and setting by P.K. McBride

# Glossary

**Note.** The number at the end of each entry refers to the first chapter where the term can be found.

**Altruism:** Sense of greater concern for the welfare of others than for one's own immediate (material) self-interest. (7)

**Anthropocentric:** View that humans are the central feature of all existence. (1)

**Asset financing:** Where the borrower offers the lender a contingent equity position in an asset in order to collateralise a loan. (10)

**Balanced scorecard:** Strategy tool used to measure performance based on a range of financial and non-financial parameters. (5)

**Best practice:** Optimal performance becoming a benchmark for actors pursuing a similar line of activity. (3)

**Biodegradable:** Molecular compounds whose residues merge harmlessly into the surrounding environment once they have decomposed. (1)

**Biodiversity:** Extent to which genres of living organisms vary within a given ecosystem. (2)

**Biofuels:** Energy sources derived from living organisms, often through the release of calorific energy previously stored via photosynthetic processes. (9)

**Biological nutrients:** Natural inputs into the production process. (6)

**Biomass:** Raw materials derived from recently harvested plants and used for energy or heating purposes. (2)

**Biophilic:** Postulate of a deep connection between humankind and biosphere. (9)

**Biosphere:** Sum total of factors on Planet Earth that make it possible to sustain life. (1)

**Biota:** Living organisms in a particular biosphere at a given period of time. (3)

**Brand tribes:** Communities of consumers defined by their shared loyalty to (and often experiences with) a brand. (7)

**Bridge funding:** Loans granted for the express purpose of allowing the borrower to survive a temporary period of financial deficit attributable to a particular cause. (10)

**Brownfield sites:** Spaces that once hosted an industrial or commercial activity but are currently unused. (9)

**Carbon emission trading schemes:** Mechanisms whereby participants receive (or buy) initial permits enabling maximum carbon emissions over a specific period of time. Such allocations can only be exceeded by purchasing fellow participants' unused permits. Conversely, unused permits can be resold for a profit, providing an incentive to emit less carbon. (1)

**Cascade:** Flow via a series of discrete steps. (5)

**Clean energy:** Energy captured, distributed and used in a way characterised by a minimal environmental footprint (mostly involving renewable sources).. (4)

**Clean technology:** Set of industrial principles where energy or power are generated in an environmentally friendly manner. (6)

**Climate change:** Lasting variation in temperatures and weather. (1)

**Closed loop:** System whose existing components suffice for its continued functioning, i.e. which requires no further inputs. (1)

**CHP Combined heat and power:** Where heat waste created during energy or electricity generation processes is captured and reused for heating purposes, either on one site or across a wider area in so-called 'district heating' systems. (9)

**Code of conduct:** List of rules detailing accepted behaviour within an organisation. (5)

**Commoditisation:** Where goods are developed, processed and distributed according to an undifferentiated mass volume logic. (9)

**Congestion charge:** Levy on drivers entering certain crowded city sections to dissuade them from doing so. (9)

**Corporocracy:** Regime where power is wielded mainly and conceivably solely by and for corporate interests. (5)

**Corporate responsibility:** The idea that a company should ensure that all of its actions are both legal and ethical. (1)

**Degradation of the biosphere:** Where damage, often in the form of pollution caused by human activities, is done to the natural support systems sustaining life. (1)

**Dematerialisation:** Virtualisation. (6)

**Demography:** Study of population patterns (birth rates, mortality, migration, etc.). (3)

**Disclosure:** Provision of information. Often comes in a specified form complying with legal requirements. (5)

**Disassembly:** Act of breaking an item down into its component parts, usually at the end of its working life. (6)

**Downstream:** Later value chain activities relating to the interface between a company and its customers. (4)

**Dystopia:** Disturbing/nightmarish future – opposite of ‘utopian’. (1)

**e-waste:** Electronic and electrical equipment that has been discarded, having come to the end of its useful working life. (5)

**Eco-efficiency:** Organisational process characterised by lower material and energy intensities, less toxicity, greater recyclability and maximal use of renewable inputs. (6)

**Ecological deficit:** Excess of human consumption of planetary resources over their natural regeneration. (1)

**Ecological imperative:** View that ecosystem protection is a priority for all social, political and economic endeavours and probably a sine qua non condition for the preservation of modern civilisation. Also known as the ‘green’ or ‘environmentalist’ agenda. (1)

**Ecological inertia:** Slower adaptation to environmental problems than would normally be expected using rational analysis. (4)

**Ecological justice:** Extent to which different segments within a society enjoy equal access to a sustainable environment. (4)

**Ecological myopia:** Unwillingness or inability to envision the long-term environmental consequences of one’s own behaviour. (3)

**Ecosystem:** Sum total of living ‘biotic’ flora or fauna and inanimate ‘abiotic’ elements whose interactions enable life on Earth, often through the self-sustaining food chains that have evolved. (1)

**Effluents:** Outflows, runoffs or sewage from a transformation activity. (1)

**Elasticity:** Correlation between the movement of one variable, like price, on another, like supply or demand. ‘Inelasticity’ signifies that no such correlation exists. (2)

**Embedded inputs:** Total amount of energy or water consumed during the entire production process leading to the materialisation of a final product. (5)

**End-of-pipeline:** Total output following the completion of all transformation processes. (2)

**End users:** Ultimate customers of a product that is fully evolved and not destined for further enhancement. (2)

**Energy density:** Calculation of the volume of energy stored within a container of a given size. (10)

**Energy elasticity:** Relationship between changes in a country’s economic expansion and its energy use. (2)

**Energy-intensive:** Description of activities requiring a higher than average injection of energy resources. (2)

**Energy productivity:** Quantity of outputs produced with fixed level of inputs. (2)

**Energy security:** Confidence that a country (or company) can source the energy it needs to achieve its ambitions. (2)

**Environmental footprint:** The measurable effects of an activity on the ecosphere. (1)

**Environmental management system (EMS):** 'Framework through which [a company's] environmental performance can be monitored, improved and controlled' (see <http://www.envirowise.gov.uk>). (5)

**Externalities:** Impact of a transaction on a third party. (3)

**Fair trade:** Markets organised to ensure that the producer receives a living wage, even if this involves consumers paying more than the market minimum for the good in question. (8)

**Fair value:** Estimate of what a good is worth objectively, irrespective of potential buyers and sellers' interests or sentiments. (10)

**Feed-in tariffs:** Sums that a utility (often supported by the state) pays to private parties producing and selling their own renewable energy. (4)

**Finite:** A quantity characterised by limited total supply. (1)

**Food miles:** Distance a foodstuff has travelled from its place of production to its place of consumption. (6 & 8)

**Foodshed:** Conception of a food system as stretching from its original rural source to its urban marketplace. (9)

**Foreign Direct Investment (FDI):** Where a firm funds a permanent or semi-permanent physical unit abroad. (8)

**Frictional costs:** Costs relating to the transfer of economic actors from one sector to another, often because the former has faltered due to the arrival of new technology. (8)

**Genetically modified (GM) organisms:** Living entities whose biomolecular composition has been altered to induce certain characteristics. (9)

**Global governance:** Where regulatory and supervisory functions are fulfilled by authorities whose responsibilities supersede national borders. (4 & 8)

**Global North:** Generic reference to the world's older industrialised nations. Sometimes referred to as the OECD countries. (8)

**Green chemistry:** Where companies develop and apply natural compounds producing certain performance attributes while avoiding the bio-hazards associated with traditional industrial compounds. (3)

**Green marketing:** Where companies offer products or services that are largely defined by their environmental benefits. (7)

**Green premium:** Surcharge paid for a green product over a non-green product offering the same functionalities. (7)

**Green redemption:** Where a company that once suffered from a reputation of environmental destruction restores its brand image through green (marketing) actions. (7)

**Green Revolution:** International campaign during the mid-20th century to modernise agricultural practices, particularly in LDCs, through technological and infrastructural improvements. (9)

**Green sacrifice:** Actors' willingness to renounce personal material advantage in favour of ecological benefits enjoyed by the wider community. (1)

**Greenhouse effect:** Condition where heat (often in light form) entering a partially hermetic environment is prevented from dissipating. (3)

**Greenwash:** Where companies' advertising overstates the extent of the environmental activism. (7)

**Grid:** Interconnected power supply infrastructure bringing energy from the location where it is generated to the sites where it is consumed. (4)

**Grid parity:** Where energy from different sources costs the same to end consumers sourcing it via the grid. (10)

**Habitat:** Where a population normally lives. (2)

**Halo effect:** Where a company gains marketing goodwill in certain areas because consumers appreciate its actions in others. (7)

**Heat waste:** Energy dissipating in heat form as the by product of a chemical or mechanical action. (10)

**Hinterland:** Regions surrounding a population centre and sustaining it with goods while relying on it as a trade hub. (9)

**Holistic:** View that a system is defined by the interactions between its components rather than by their sum total. (1)

**Initial public offering:** Where a firm floats shares on public financial markets for the first time in order to expand its capital base. (10)

**Intangibles:** Immaterial, non-physical assets such as patents or brand image. (8)

**Intergovernmental organisation:** International body created by nation-states, often for coordination purposes, to deal with cross-border issues. (8)

**Intermittency:** Inconsistent behaviour – energy from wind turbines or solar panels that only operate when the wind blows or the sun shines is, by definition, intermittent. (10)

**Internal waste tax:** Invoicing system where the different entities comprising a multidivisional company pay notional fines for the waste they produce. (8)

**Kinetic energy:** Energy wielded by an object in movement. (10)

**Knock-on effect:** Where events occurring at the upstream level of a sector's value chain affect its downstream phases. (6)

**Licence to operate:** Permission to engage in a productive activity. (4)

**Lifecycle assessment:** Analysis of an asset's total value including acquisition price, performance and residual value. (4)

**Lifecycle costing:** Total cost of an item once all expenditures are accounted for, particularly relating to the minimisation of its environmental footprint (pollution permits, disposal, safety measures). (6)

**Lightweighting:** Engineering initiatives aimed at reducing the mass of materials comprising a manufactured item. (6)

**Localism:** Social/economic organisation emphasising the consumption of goods/services that have been produced locally. (9)

**LOHAS:** Acronym for Lifestyles of Health and Sustainability, a market segment focused on health and fitness, the environment, personal development, sustainable living, and social justice, c.f. <http://www.lohas.com/>. (7)

**Market failure:** Inability of a market system to achieve an optimal outcome (allocation of resources, accurate pricing, etc.). (4)

**Metrics:** Indicators chosen as measurement instruments. (5)

**Micro-generation:** Production of power from small, local sources. (2)

**Monoculture:** Where an agricultural production region specialises in a single plant genus instead of diversifying. (8)

**Moral hazard:** Where incentives are skewed so that a party is motivated to take a risk because it does not suffer the consequences if things go wrong.

**Nano-technology:** Study of matter on a very small atomic level. (10)

**Nearsourcing:** Where a company moves to procure supplies from a provider located in relative proximity instead of at a great distance.

**Neo-liberal:** Belief in a minimal interference of government in the economy. (2 & 8)

**NIMBY:** Not In My Back Yard. Where individuals avail themselves of the outcomes of an activity but do not wish to be directly confronted with the operations required to produce it. (10)

**Non-governmental organisation:** Civil society associations created to deal with specific issues or promote a particular ethos or policy. International NGOs usually focus on problems that are cross-border in nature. (5)

**Non-product ratio:** Percentage of inputs that are transformed over the course of a production process into waste. (6)



**Offtake contract:** Where a utility or other energy buyer commits to buying the energy output from the project for a sufficiently long period of time to justify the original investment in plant capacities. (10)

**Opportunity cost:** Cost of not doing something. (5)

**Organic:** Grown without any synthetic additives. (7)

**Outsourcing:** Where a company buys supplies that it needs for its products or services from an outside company instead of making them itself. (8)

**Paradigm:** Worldview, general philosophy. (4)

**Passivhaus:** Structure designed to reduce internal–external heat flows using triple-glazed windows and an airtight outer envelope. Contrast with hi-tech ‘active’ green structure that uses onsite renewable energy sources but needs pumps and motors to circulate heat (Steffen 2008). (9)

**Pathogen:** Agent causing disease in a living organism. (3)

**Planned obsolescence:** Where companies design products to wear out prematurely so that consumers are forced to buy replacements. (2)

**Portability:** Ease with which an asset, like an energy source, can be transported from one location to another. (10)

**Precautionary principle:** Philosophy that when faced with an indeterminate choice, the best option is the one that minimises potential risks. (4)

**Protectionism:** General policy where a national government adopts policies restricting foreign producers’ access to its domestic market. (8)

**Public goods:** Goods that are ‘rivalrous’ but ‘non-excludable’, meaning that (1) their consumption by one party will prevent others from enjoying them, yet (2) no one can be excluded from their use. (4)

**Race to the bottom:** Where competition among disadvantaged producers forces them to accept lower remuneration for their services. (8)

**Regime arbitrage:** Where multinational enterprises put pressure on a national government to relax regulations under threat of investing elsewhere. (8)

**Relative price:** Value attributed to one category of asset compared to another. (4)

**Renewables obligation:** Requirement that a certain percentage of total energy production come from renewable sources by a certain deadline. (10)

**Resilience:** Concept increasingly used in environmental studies to refer to an entity’s ability to withstand external shocks and continue to perform and/or survive. (9)

**Resource depletion:** Exhaustion of irreplaceable stocks of raw physical commodities consumed as a result of human activity. (1)



**Retrofitting:** Adjoining new technological features on old platforms. Often refers to modernisation of building stock. (5)

**Reverse logistics:** Where a company organises shipment channels enabling the return of its used goods for recycling purposes. (2)

**Sequestering:** Containing an unwanted substance so that it does not permeate and damage the surrounding environment. (3)

**Slurry:** Liquid thickened by the solid particles that it has accumulated, often after use as a cleansing agent. (3)

**Smart grid:** Energy distribution network that uses information technology to optimise power allocations and reduce wastage. (6)

**Social marketing:** Commercial efforts by companies to affect consumers' behaviour in a way that will enhance the broader social good. (7)

**Solar array:** Large number of solar panels arranged in a way that maximises their thermal effects. (10)

**Stakeholder:** Anyone affected, however indirectly, by an organisation's actions. Often understood to include employees, local governments, suppliers, consumers and host communities. (5)

**State capitalism:** Where large swathes of market activities are undertaken by publicly owned enterprise. (8)

**Stewardship:** Idea that one entity has a practical if not moral obligation to take responsibility for another. (1)

**Stressor:** Any agent disturbing the biological processes of another. (3)

**Sunk costs:** Sums already invested in assets that cannot be sold off. (4)

**Sustainability:** Capacity for survival for unlimited period of time through infinite repetition of existing regulation mechanisms - or adoption of new ones - enabling adjusting to changing external circumstances. (1)

**Sustainomics:** Vision of economics in which the minimum requirement for the solutions on offer is that they be sustainable. (8)

**Sustenance:** Factors supporting the existence of life. (1)

**Symbiosis:** Interdependent relationship. (6)

**Synthetic:** Human-made. The opposite of natural. (3)

**Technical nutrients:** Synthetic inert inputs into the production process. (6)

**Throughput:** Holistic overview of elements in all of their different stages as they transit through a transformation process. (3)

**Toxicity:** Extent to which an agent causes harm to different living organisms. (3)

**Triple bottom line:** Idea that firms should report not only financial but also social and environmental outcomes; formulated by John Elkington in 1994. (5)

**Upgradeability:** Ease with which an object can accommodate modernisation. (6)

**Upstream:** Early value chain activities undertaken when processing or transforming a product or service. (2)

**Urban sprawl:** Municipalities' extension towards their fringes, often leading to the development of previously rural land. (9)

**Urban infill:** Policy of directing future growth to undeveloped spaces within a metropolitan region's existing boundaries instead of expanding further on the fringes. (9)

**Utilitarian:** Designed solely to fulfil a practical function. (6)

**Value chain:** The succession of acts that successfully add value to an item as it is transformed from a raw material or input stage to a finished product or service. (2)

**Venality:** Willingness to sell one's services for a material reward. (1)

**Vertical integration:** Where a firm controls, and/or moves towards controlling, both the upstream and downstream sides of its value chain. (2)

**Virtual:** Intangible replication of reality. (6)

**Weatherisation:** Work done to improve physical structures' ability to withstand the elements while consuming a minimum of energy. (10)

**Zeitgeist:** Dominant paradigm at a particular moment in history. (1)

**Chapter extract**

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