Guidance

What is the Sustainable Economy Framework (SEF)?

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The world faces major issues – such as climate change, limited natural resources and changing age demographics. The need for transition to a more sustainable economy is creating risks for organisations that do not change, and global market opportunities for entirely new solutions.

To realise these opportunities we need to think about how sustainability shapes the operating context of organisations, for example through changing consumer needs, market attractiveness, competition and technology options. The Sustainable Economy Framework (SEF) was developed by Aviva and the Technology Strategy Board in collaboration with Forum for the Future, to help innovators think about sustainability risks and opportunities.

The SEF sets out the parameters for a sustainable future economy so that today's investments can work towards, rather than hinder, sustainability. The SEF defines the characteristics of a sustainable economy: one that operates within safe environmental limits and enriches people's lives. Fundamentally, it is not possible to be a sustainable, successful organisation in an unsustainable world. It is in every organisation's interest to shape a future in which it will be successful.

The SEF provides a series of challenges, prompts and questions to cover all aspects of a sustainable future economy. It is not a prescriptive process, and does not provide a unique answer, but we believe that you can use the SEF to identify risks to your future operations and the opportunities that will come from tackling them.

It will help you to answer the question: Is what I'm doing sustainable in the long term and am I approaching it in a sustainable way?

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How do you use the Sustainable Economy Framework?

Use the SEF when developing visions, strategies, innovative products, services or business models, or shaping individual concepts.

What is on the cards?

The cards cover 12 environmental boundaries, and 21 social and political foundations. Crossing one or more of the environmental boundaries increases the risk to your business. Costs can rise, and regulatory pressures may change how you operate. Conversely, helping to relieve pressure on an environmental boundary offers new opportunities. The social and political foundations describe structures and behaviours in society that make long-term success possible. Working where these foundations are not in place increases the threat to the success of your business.

Each of the cards defines a topic, explains why it is important to long-term sustainability, and suggests ways in which you can take account of the risks and opportunities. The implications for a business and public sector bodies are classified as **must**, **should** and **could**.

- **must** – follow this guideline or risk failure in the longer term due to lack of sustainability.
- **should** – follow this guideline wherever possible to improve the chances of success.
- **could** – desirable activities that will make an organisation more sustainable.

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Using the cards

Below are some suggestions for using the cards. We think they work best by prompting debate and discussion. The cards are meant to be adapted to suit individual circumstances and needs.

Understand the sustainable operating context. Translate each statement into a boundary or foundation for your sector for example 'people have reliable energy sources'. Use these to develop your vision and objectives.

Stimulate innovation. Select cards that are most relevant to your context. Not all the cards will be relevant to the situation that you are dealing with. Briefly review all the cards before making your selection, as sometimes an issue that seems at first glance not to connect provokes the most interesting discussion. For each selected card, discuss the implication for your topic, eg what does this mean for your strategy? Does it suggest a need to avoid some approaches, or to specify new requirements? What opportunities does that suggest to you? What sort of services, goods, processes or business models would most effectively respond to the sustainability challenge?

Develop an action plan that integrates the sustainability thinking with any other criteria that are part of your normal process. This is about adding another way of looking at an opportunity to what you already do, not replacing good practice.

Use as a gate in an innovation pipeline. Does a concept have any negative impacts? Are these unavoidable (in which case, stop developing the concept) or can they be addressed in the next stage of development?

We would like to know what you think of these cards, how you have used them, how others could use them and how we can improve them. Please contact us to let us know at SEF@forumforthefuture.org

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Desired Outcome

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Desired Outcome

Overarching goal for a sustainable economy:

Universal and continuous access for current and future generations to the resources and opportunities necessary to live well.

How are your plans contributing towards these outcomes?

Global Warming

The average global temperature must not rise more than 2°C above pre-industrial levels.

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Global Warming

What is global warming?

Greenhouse gases, such as carbon dioxide and methane, are being produced by human activity faster than natural processes can remove them, and are accumulating in the atmosphere. As a result, the mean global temperature is rising, leading to a range of effects such as extreme and unpredictable weather, rising sea levels, and the increased incidence and severity of drought and flooding. While the global average temperature will rise, some places will get colder.

Why is this critical?

Global warming is already causing 300,000 deaths a year and $125 billion of economic losses. By 2030 it could be costing $600 billion a year. Emissions to date mean that a certain amount of global warming, compared to pre-industrial temperatures, is now inevitable. The question is how much? A rise of more than 2°C above pre-industrial levels brings the additional significant risk of tipping the Earth's climate system into a new, irreversible configuration. This would seriously disrupt nearly all ecosystems on the planet, massively increase biodiversity loss and potentially collapse many important regional ecosystem services, such as water catchment and soil renewal, on which economies depend.

Implications:

- **must** reduce direct and indirect greenhouse gas emissions in line with global efforts to restrict warming to no more than 2°C;
- **must** demonstrate an understanding of the full range of risks and opportunities posed by climate change;
- **should** demonstrate an understanding of emissions and impacts arising in supply chains and associated with the use of any products and services offered, with efforts directed to those areas where the impact is greatest;
- **should** play a role in adapting natural and human systems to the inevitable impacts of climate change;
- **should** be a vocal and effective advocate for broad societal action on climate change.

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The ozone layer

The ozone layer must be protected and encouraged to recover.

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The ozone layer

What is the ozone layer?

Ozone (O3) is a gas occurring naturally in small amounts in the stratosphere. This ozone layer absorbs ultraviolet radiation from the sun and so protects life on Earth from the harmful effects of that radiation.

Why is this critical?

Ozone-depleting substances (ODS) are gases that damage the ozone layer, reducing its ability to absorb ultraviolet radiation and leading to more cases of skin cancer, cataracts and other health problems. ODS are mainly chlorine and bromine-containing materials such as CFCs, halons, some solvents and pesticides. Common uses for ODS include refrigeration and air conditioning equipment, aerosols, solvents, foam-blowing agents, fire-fighting fluids and high-voltage switchgear.

Most ODS are being phased out, but they can be found in older equipment. There are also a few exceptions for certain uses. If you manufacture, supply, use, install or service equipment containing ODS, you must comply with strict legislation.

Implications:

- **must not** reduce stratospheric ozone levels below 276 Dobson units by releasing any ozone-depleting substances;
- **should** phase out ODS from products.

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Blue water

Global consumption of blue water sources must not exceed 4,000 cubic km per year. Watersheds at the local level must be managed sustainably.

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Blue water

What is blue water?

Surface water (collected on the ground or in a stream, river or lake) and ground water (located below the ground in soil pore spaces and in fractures in rock formations).

Why is this critical?

Water has been described as 'the oil of the 21st century'. People need blue water daily. It is vital for food production, industrial processes, hygiene and in many other ways. Currently the global economy uses about 2,600 cubic km of water per year and this is increasing rapidly. According to the World Bank, 80 countries currently have water shortages that threaten human health and economic activities, while 70% of the world's freshwater use is for agriculture. Some 800 million people live below UNEP's 'water stress' threshold and by 2025 this number will rise to three billion. Already, there is competition and local conflict for available clean water, and the costs of recycling polluted water will rise. The production of 1kg of plastic uses about 185 litres of water, a pair of jeans 11,000 litres and a car 400,000 litres.

Implications:

- **must** radically reduce the amount of blue water appropriated for human activity;
- **must** build resilience of water systems and minimise the pollution of aquifers;
- **should** radically improve efficiency of water use through recycling, treating and reusing whenever possible.

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Waste

Most industrial and domestic waste must be eliminated.

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Waste

What is waste?

Any substance or object that the owner or user discards.

Why is this critical?

Excessive or poorly managed waste has two effects. The most obvious is dealing with the waste itself, which can be damaging to the environment and human health. But before something becomes waste it is an input taken from a resource. The second effect of excessive waste is the depletion of renewable and non-renewable resources. The cost of resources will rise as they become more scarce.

It is estimated that the EU throws away 3,000 million tonnes of waste each year, of which around 90 million tonnes is hazardous. Biodegradable waste in landfill produces methane, a powerful greenhouse gas that contributes to climate change.

Implications:

- **must not** produce waste faster than natural systems can process;
- **should** help avoid production of waste and aid natural system waste processing, eg through using waste as a resource as part of closed-loop processes.

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Renewable resources

Stocks of renewable resources must be managed sustainably to meet both human and broader ecosystem needs.

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Renewable resources

What are renewable resources?

A natural resource is renewable if it is regenerated by natural processes within a reasonable timeframe, for example timber, water, solar radiation and wind energy.

Why is this critical?

Overuse of renewable resources through direct exploitation or habitat damage can impair their ability to replenish themselves and, in some cases, leads to extinction. For example, 70% of the world's fish stocks are fully fished or fished beyond their sustainable limits. Overexploitation can also increase the vulnerability of ecosystems to other dangers, such as climate change.

Renewable resources are only available for commercial exploitation in the long term if managed sustainably.

Implications:

- **must not** exploit stocks of renewable resources beyond their recovery point;
- **should** build stocks and flows of renewable resources;
- **should** improve the material efficiency of the economy.

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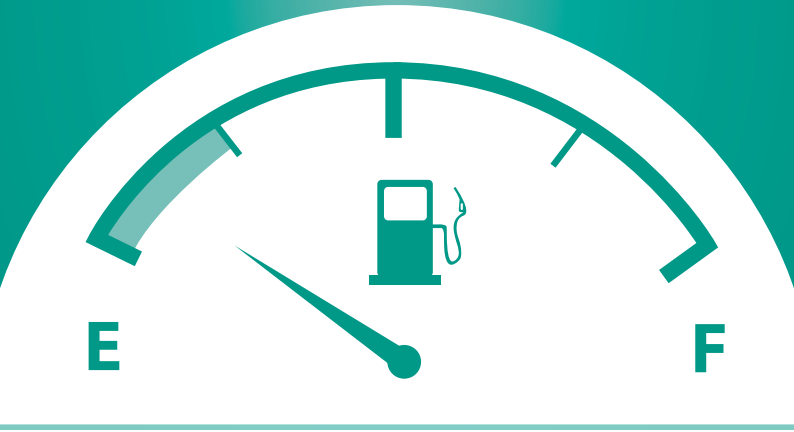
Non-renewable resources

Stocks of non-renewable resources must not be depleted faster than the introduction of substitutes or discovery of new sources.



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Non-renewable resources

What are non-renewable resources?
Natural resources that cannot be produced or generated, such as metals and fossil energy sources, eg oil and coal.

Why is this critical?
The growing global population - from seven billion today to more than nine billion by 2050 - will put huge pressure on resources. The increasing scarcity of non-renewable resources, in particular, will drive up competition and the cost of raw materials. It will also encourage exploration for new sources, more efficient use and development of alternative materials or processes that don't require the scarce resource.

The Chemistry Innovation Knowledge Transfer Network has identified nine elements that will be under serious threat in the next 100 years, and seven more that are under increasing threat. Only 1% of rare earth elements are re-used, compared with worldwide rates of 25-75% for commonly used materials such as aluminium, copper, lead, tin, iron and steel.

Oil prices are near their historical high. This makes it more commercially attractive to exploit difficult-to-extract fossil fuels, such as tar sands or shale gas. While these may satisfy the need for energy, they do so by damaging local biodiversity and land use, and adding to global warming in both extraction and use.

Implications:
- **must** reduce depletion rates of non-renewable resource stocks;
- **should** improve the material efficiency of the economy, for example by developing closed-loop material systems;
- **could** provide sustainable alternatives to non-renewable resources.

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Land-use

Level of land-use change must be managed sustainably to meet both human and broader ecosystem needs.

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Land-use

What is land-use?

Land use refers to how land is used by humans for agriculture, forestry, cities and so on. Land can be converted from non-human to human use (for instance, through deforestation for agricultural uses), and existing use can shift, say from farming to urban.

Why is this critical?

As the global population rises (from seven billion in 2011 to over nine billion in 2050), there will be huge pressure on land for food, energy and housing. The availability, condition, spatial distribution and intensity of land-use is critically important for the production of food, regulation of freshwater flows and other ecosystems services, such as soil renewal and pollination.

Currently 12% of global ice-free land is used for crops. Johan Rockstrom of The Stockholm Resilience Centre advocates that no more than 15% of global ice-free land should be converted to cropland. By 2050, the UN anticipates that we will need a 70% increase in food production to meet demand. Simultaneously, increases in agricultural yields are falling, from 3.6% per annum in 1960 to 1.5% in 2000.

Conversion of land from non-human to human use can lead to large releases of CO_2 and methane, increasing global warming. It can also contribute to biodiversity loss through habitat destruction, and has been identified as one of the causes of recent volatility in food prices.

Implications:

- **must** avoid excessive use of land and further deteriorate land condition;
- **should** reserve most productive land for agricultural uses and maintain high conservation-value land in current state;
- **should** radically improve land-use efficiency of human activity.

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Nitrogen & phosphorus

Ensure the use of nitrogen and phosphorous does not deplete the source, or exceed the ability of ecosystems to absorb the pollution.

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Nitrogen & phosphorus

What are the nitrogen and phosphorous cycles?

Nitrogen and phosphorus are essential nutrients. The nitrogen cycle refers to the movement of nitrogen from the air into the biosphere and into organic compounds, then back into the atmosphere. The phosphorus cycle refers to the release of phosphorus from rocks by weathering, making it available to plants in soil, and eventually depositing it in the oceans, where new rocks are formed.

Why is this critical?

To increase food production, we remove enormous amounts of nitrogen from the air and mine large quantities of phosphorus to make fertilisers. These end up in rivers, lakes and oceans, where they cause algal blooms that can kill fish and dramatically reduce the productivity of the waters.

Through production of fertilisers, growing leguminous crops, and burning fossil fuels and biomass, we release about 150 million tonnes of nitrogen each year, the same as the total nitrogen fixed in natural systems. The amount released causes severe problems with fisheries and water supplies.

Presently, 20 million tonnes of phosphorus are mined every year, 80% for fertilisers. It is a critical non-renewable resource that has no substitute in food production. The US has approximately 25 years of reserves remaining, while China recently imposed a 135% export tariff to secure domestic fertiliser supply. Western Europe and India are dependent on imports. Global peak phosphorus production is expected to occur around 2034.

Implications:

- **must not** lead to nitrogen or phosphorus pollution;
- **should** use nitrogen and phosphorus more efficiently in agriculture;
- **could** develop new routes for recycling.

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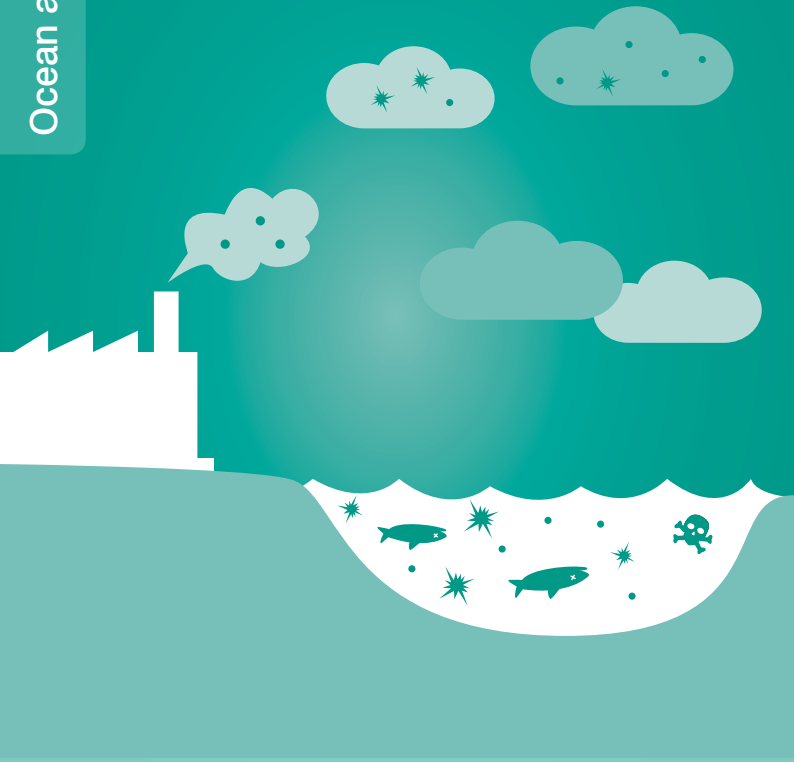
Ocean acidification

The concentration of acid compounds in the world's oceans must be reduced to pre-industrial levels.



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Ocean acidification

What is ocean acidification?

When CO_2 dissolves in seawater, carbonic acid is formed and the ocean becomes more acidic.

Why is this critical?

Our oceans have become 30% more acidic since the beginning of the Industrial Revolution. As the ocean waters become more acidic, marine organisms are not able to produce carbonate shells and skeletons. This could affect the organisms at the bottom of the marine food chain, threatening biodiversity and fish stocks. Millions of people depend on those stocks for food and livelihoods. It may also reduce the ability of the ocean to absorb CO_2 and contribute to coral reef erosion.

Implications:

- **should** radically reduce emissions of CO_2;
- **should** help ecosystems and human societies adapt to ocean acidification.

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Chemical pollution

Release of chemicals must be controlled in such a way as to reduce to zero any damage to natural systems and human health.

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Chemical Pollution

What is chemical pollution?

When chemicals resulting from human activities enter the environment, contaminating air, water or soil, eg acid rain or air pollution from vehicles and industry. Toxic chemicals are persistent pollutants with global distribution, for example mercury, certain plastics and Persistent Organic Pollutants (POPs), such as BPA, dioxins and DDT.

Why is this critical?

Chemical pollution damages the environment and threatens human health. Persistent pollutants are not quickly broken down by natural processes into harmless materials. They accumulate in human and animal tissue and can be amplified as they pass up the food chain. Chemical pollution has a variety of effects, from direct toxic effects on humans, such as increased risk of cancers and birth defects, to damaging whole ecosystems.

As a result of the concerns of society, many hazardous materials have been banned or restricted, and others are under threat of being banned. A business using hazardous chemicals will face additional costs to protect workers and the environment during manufacture, to clean up waste streams, and to manage the risks of release during the use and disposal phases of the life cycle.

Implications:

- **must not** increase the burden of persistent pollutants on the environment;
- **should not** produce toxic substances or chemical pollution that natural systems cannot process;
- **could** help remove chemical pollution from the environment.

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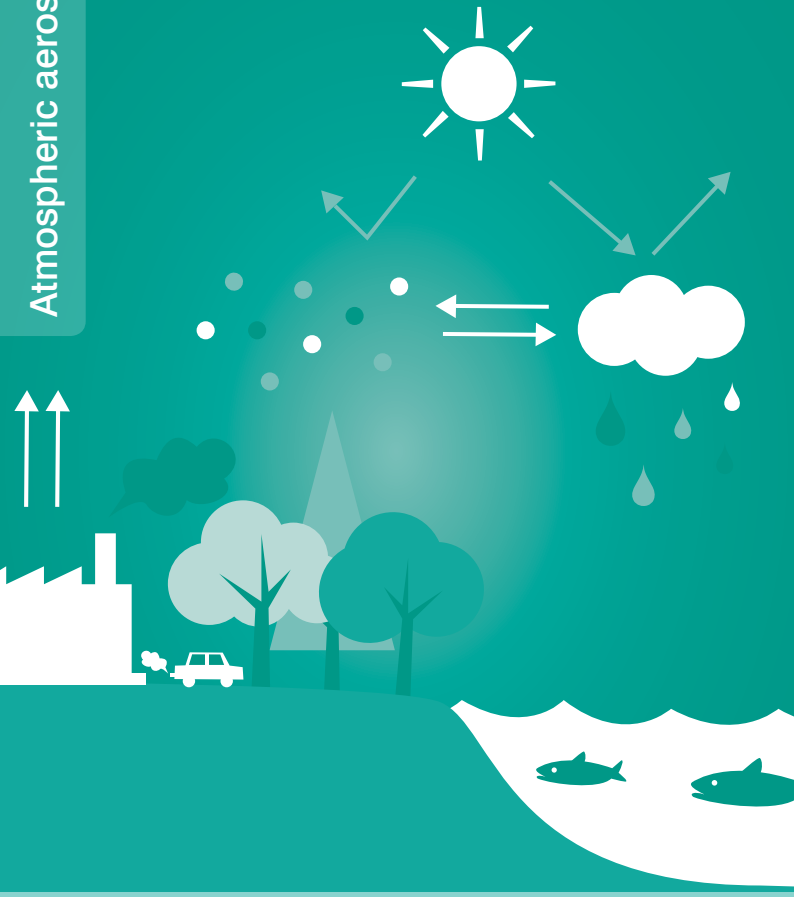
Atmospheric aerosols

Atmospheric aerosol loading must be limited.



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Atmosphere aerosols

What are atmospheric aerosols?

An aerosol is a system of tiny particles suspended in the air. Aerosols occur naturally (for example, from volcanic eruptions), but are also produced by human activity (for example, soot from coal-fired power stations).

Why is this critical?

Human activities since the pre-industrial era have doubled the global concentration of most aerosols. The main sources of human-produced aerosols include coal and oil-fired power stations, aircraft contrails and shipping exhaust, as well as burning forest to clear the land for farming.

Aerosols have many effects. They are a key component of photochemical smog, and have adverse effects on human health, increasing lung cancers and respiratory diseases. This creates a long-term health burden for societies and reduces labour productivity.

Aerosols also influence the climate system, particularly rainfall, and can disturb important weather patterns such as the monsoon. Aerosols tend to cause cooling of the Earth's surface immediately below them by reflecting sunlight back into space. Aerosols have also been linked to crop damage from exposure to ozone, and forest degradation and loss of freshwater fish due to acidic precipitation.

Implications:

- **must** comply with aerosols regulations;
- **should not** release or contribute to the release of aerosols beyond the loading capacity of relevant ecosystems.

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Biodiversity

Species extinction rate must be no higher than estimated background rate of 10 per million per year.

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Biodiversity

What is biodiversity?

The variability among living organisms within species, between species and between ecosystems.

Why is this critical?

The biodiversity of the planet provides many 'instrumental' benefits to humanity. These range from ecosystem services, such as pollination, to contributing to human wellbeing and health. The total annual economic cost of biodiversity loss and ecosystem degradation was estimated to be between $2 trillion and $4.5 trillion in 2008. The consequences will not just affect companies with direct reliance on natural resources, but will also affect the supply chains and growth objectives of most industry sectors in the developed and developing world.

There is also an ethical case preserving and enhancing biodiversity for its intrinsic value, and as part of human beings' role as custodians of the natural environment.

Implications:

- **must** reduce rate of loss of biodiversity;
- **should** build biodiversity locally and globally.

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Trust

Levels of trust must be high within society, for people and institutions.

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Trust

What is trust?

The belief that others will not knowingly act in a way that is detrimental to our interests or, better still, will act in a way that serves to maximise our interests.

Why is this critical?

It is argued that 'trust' is the key to the efficiency of markets and economic growth. Without trust business cannot function effectively. It also has social impacts, affecting rates of criminal offending and victimisation, morbidity and mortality, quality of life and the stability and responsiveness of democratic systems in government. Social and economic activity slow down in a low-trust environment. Trust levels have been shaken with the recent scandals around the globe in the banking sector, media, business and politics. These events have called into question the integrity of many institutions and reform will be needed to build up trust levels again.

Implications:

- **should** not undermine levels of trust in society;
- **could** build trust through actively engaging stakeholders and ensuring transparency.

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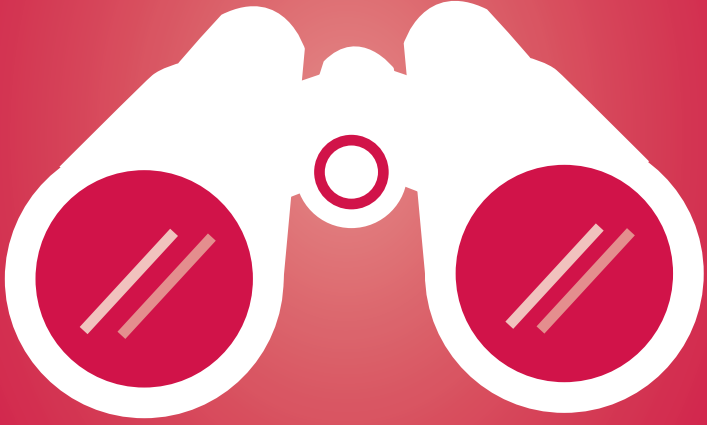
Long-termism

All key decisions must actively take into account the wellbeing of future generations.



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Long-termism

What is long-termism?

Long-termism is the principle that decisions, investments or otherwise, should be made for long-term value rather than just short-term returns.

Why is this critical?

Short-termism in business and the pressure for quick returns, both in capital markets and the consumption of products and services, is a major factor in creating unsustainable development. Extreme focus on the short term has been linked with unethical behaviour that can threaten the survival of a company (eg the collapse of Enron). It can also undermine strategy by ignoring long-term risks and opportunities. It fails to account for the impacts of economic activity on ecosystems and communities, and can lead to unintended and irreversible damage to both. Focusing on short-term value can actually undermine long-term value and society's ability to flourish and survive in the future.

Implications:

- **must** take into consideration long-term impacts of decisions;
- **should** invest in actions that will deliver long-term value;
- **should** seek to enable the success of future generations.

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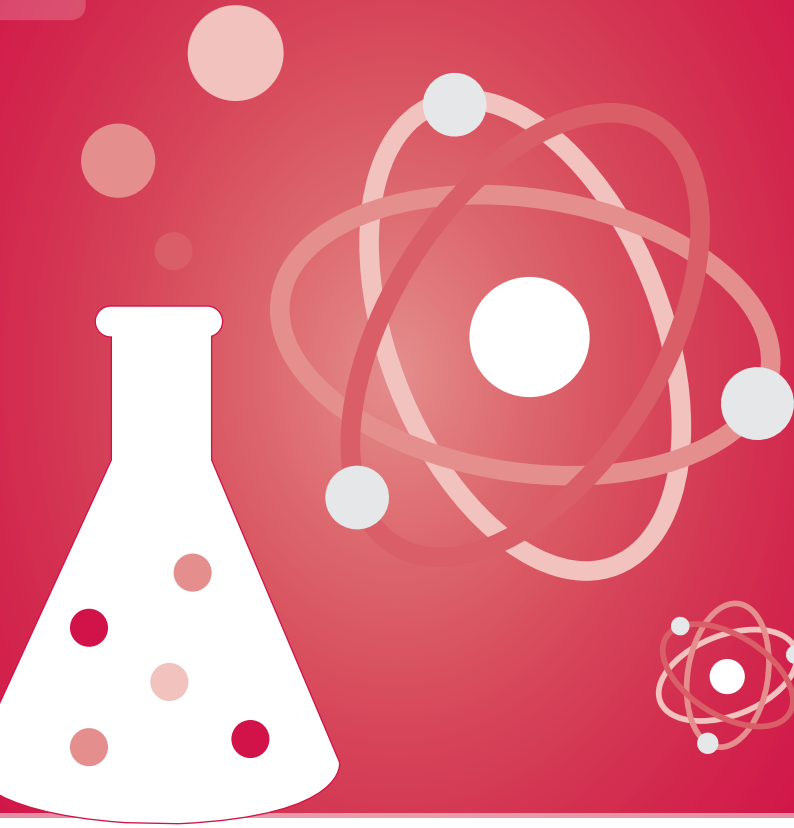
Science

Science must be valued by society and accepted universally as the foundation for sound policy-making.



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Science

What is science?

Science is the pursuit of knowledge and understanding of the natural and social world following a systematic methodology based on evidence.

Why is this critical?

Successful policy-making for the long term demands the careful examination of the evidence base, particularly in controversial areas. Public understanding of the scientific basis for environmental concerns such as climate change is crucial to give governments a mandate for action and policy-making. It was scientific evidence of the depletion of the ozone layer that led to an international agreement to reduce CFCs, the main cause of ozone depletion, for example. Incidents like 'climategate' undermine the open evaluation of the evidence, allowing critics to call into question the impartiality and transparency of scientists. In an EU survey, 58% of respondents agreed that: "We can no longer trust scientists to tell the truth about controversial scientific and technological issues because they depend more and more on money from industry."

Implications:

- **must** be transparent about uncertainties and probabilities;
- **must** take into account any relevant evidence in decision-making;
- **should** be open about evidence used in decision-making.

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Empathy

Empathy and understanding must exist between different communities and cultures globally.

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Empathy

What is empathy?

Empathy is our ability to step into the shoes of another person and comprehend the way they look at themselves and the world.

Why is this critical?

Some lifestyles lead to a greater depletion of the Earth's resources than others. Some people will be more vulnerable to changes in the Earth's ecosystems than others and at different times. It is important for people to see themselves as connected to each other and to look beyond national, cultural, biological or religious differences. Historian Theodore Zeldin concluded, "learning to empathise with people different from ourselves is one of the most effective means of establishing equality that modern society possesses". Empathy can help to avoid or mitigate environmental or social collapses, and strengthen markets and economies for the future.

Implications:

- **should** encourage cooperation between businesses, countries and communities;
- **could** promote flow of information and knowledge between people and communities.

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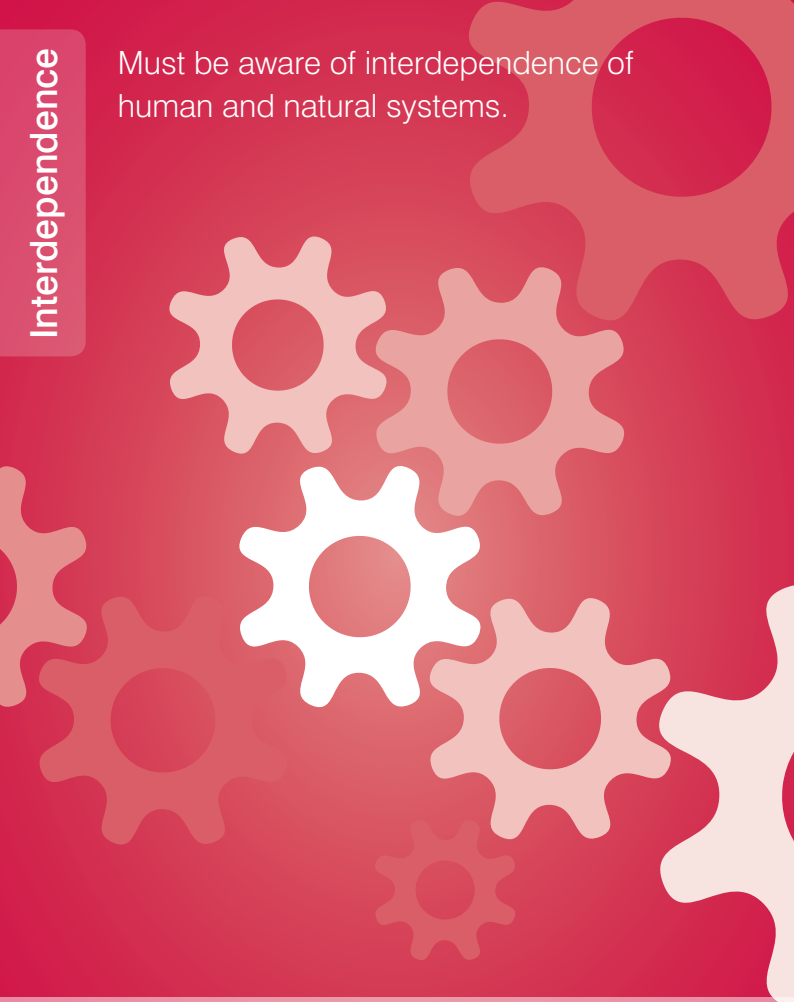
Interdependence

Must be aware of interdependence of human and natural systems.



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Interdependance

What is interdependence?

Interdependence refers to the fact that human systems are critically linked to other systems such as biodiversity, climate and weather patterns, and water flows, and that human societies are reliant on each other for life-sustaining resources, protection and knowledge.

Why is this critical?

We are one small part of a much wider system and our impact on food production, land use, consumption and resource use has effects on all other parts of the system. For example, an intervention in one location can cause the breakdown of the local ecosystem which in turn leads to impacts such as soil erosion, flooding and the loss of valuable species elsewhere. Because there is no direct cost of these ecosystem services, they have been treated as being without value. Yet the economy uses a multitude of ecosystem services, the value of which is estimated in trillions. For example, forests contribute directly to the livelihood of billions of people, and annual cost of deforestation and forest degradation alone may equate to $2-$4 trillion.

Failure of these services will at a minimum increase costs, and potentially threaten entire business models.

Implications:

- **should** contribute to the development of a common global standard for valuing ecosystem services
- **should** take into account direct and indirect impacts of economic activity on human and natural systems;
- **should** value and report the true costs and impacts of resources used.

Human Rights

Must have broad-based respect for human rights: people should have freedom to exercise choice and participate in decision-making that affects their lives.

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Human Rights

What are human rights?

Human rights are rights inherent to all human beings, regardless of nationality, place of residence, sex, national or ethnic origin, colour, religion, language or any other status. We are all equally entitled to our human rights without discrimination. These rights are all interrelated, interdependent and indivisible.

Why is this critical?

The recognition that all people are equal and are entitled to basic human rights is essential for quality of human life. This lays the foundation for enabling participation from all, regardless of background, gender or religion in political, social and economic activity. It also requires us to respect the rights of future generations and their need for access to resources. Globalisation presents new and complex challenges for human rights.

Implications:

- **must not** violate human rights, and at a minimum must adhere to legal standards;
- **should** promote and respect human rights in all commercial operations;
- **could** raise standards to ensure that no individual or group's rights are marginalised.

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Accountable governance

Must have broad access to accountable, transparent and participatory governance systems.

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Accountable governance

What is accountable governance?
Systems, checks and balances that require individuals and organisations to account for, explain or justify their actions.

Why is this critical?
Many decisions that have a large impact on society and on the environment are made by a very few people. As these decisions affect the many, it is essential to have checks and balances in place to ensure that they are not made to benefit the few. Political, media and company transparency can also increase levels of accounability.

Lack of accountability and transparency is the most important cause of corruption, the cost of which is huge, adding an estimated 10% or more to the costs of doing business in many parts of the world. It also accelerates the depletion of natural resources, which business and society rely on.

Implications:

- **must** be transparent and accountable;
- **could** seek to raise standards on visibility and transparency.

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Civil society

Civil society must play a strong and active role in raising awareness and strengthening accountability.

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Civil Society

What is civil society?

The space of organised activity not undertaken by either government or for-profit business. It encompasses the voluntary and community sectors, trades unions, faith groups, co-operatives and mutuals, political parties and philanthropic foundations.

Why is this critical?

A strong and active civil society plays a key role in holding government and business to account, as well as delivering services that are not provided by the state. Participation in civil society activities can help to strengthen communities and unite people with common beliefs and areas of interest. CSOs are playing an expanding role in supporting business to reach its goals, as are businesses playing an expanding role in supporting CSOs to reach their developmental objectives. Global challenges such as climate change in particular call for partnerships between business, government and civil society.

Implications:

- **should** take an active role in civil society, by forging relationships and co-operate with external partners to help deliver a sustainable economy;
- **could** work to strengthen civil society (eg Unilever helping found the Roundtable on Sustainable Palm Oil).

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Measurement & Validation

Measures of success should be aligned to desired sustainable economic outcomes, and validated.

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Measurement & Validation

What is measurement?

Monitoring the status of a system to understand its characteristics or detect changes. Measurement doesn't have to track quantity or numbers (quantitative); it can also be about quality (qualitative) or direction (directional). Validation is having someone else check your work and letting people know about it.

Why is this critical?

What is measured is managed: measuring the right things is vital because it helps us understand how something works and so how to improve it. Measuring the wrong things can lead to the wrong results. For example, a country's economic success is typically measured through its Gross Domestic Product (GDP), but this only indicates economic throughput and can be misleading. If a country suffers an oil spill, GDP will increase due to the money spent on clean up, but the society will have incurred real costs. The inability to account for these 'externalities' has led to questioning of GDP as the sole indicator of economic success, and experimenting with measures of 'wellbeing' or 'happiness'.

Validation has three main benefits: it brings in an external perspective; it encourages you to be rigorous in the first place; and it opens a window on you to the outside world – if others know you better, they are more likely to understand and trust you.

Implications:

- **must** value wider social and environmental factors when measuring economic success;
- **should** pursue solutions which are economically viable when environmental and social externalities are taken into account;
- **should** report impact of activities on society and environment through transparent and systematic measurement and evaluation.

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Equity

Must promote the equitable distribution of resources.

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Equity

What is equity?

Equity is about enabling fair and equal access to resources and opportunities.

Why is this critical?

The principal aim of economic development is to promote the welfare of the population. A fair distribution of resources, both globally and nationally, is essential to achieve this. Unequal distribution of resources can lead to overexploitation of some resources and irresponsible management of others. This has a direct impact on the ability of people to meet their needs and to live well. Unfair access to resources damages global markets for goods and services, and can ultimately lead to political and social instability. Recent IMF research found that periods of sustained economic growth tend to result in greater income inequality.

A fifth of the world's population earns just 2% of global income, and inequality is higher in the OCED nations than it was 20 years ago. In the US, the top 1% owned 47% of the wealth in 2007, up from 28% in 1968.

Implications:

- **must** seek to enable fair and equal access to resources and opportunities.

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Nutrition

There must be access to adequate nutrition for all.

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Nutrition

What is adequate nutrition?

On average a person needs about 1,800 kcal per day as part of their minimum energy intake, as well as a wide range of nutrients, from iron to vitamin C, to maintain health.

Why is this critical?

As a global average, one in seven people was malnourished in 2010. Malnutrition is the underlying cause of 3.5 million deaths among mothers and children in the developing world each year. Yet malnutrition is rarely a function of absolute lack of food; it is rather a problem of access to food supply. Financial crises and food price spikes exacerbate this situation, with the poor less able to afford adequate nutrition.

In contrast, by 2030 the number of overweight and obese adults is projected to reach almost two billion. Obese people are more likely to develop chronic illnesses such as diabetes and cardiovascular diseases, which cause 60% of all deaths worldwide.

Implications:

- **must** leverage agricultural practices and product distribution to maximise food security;
- **should** promote public policies which incentivise proper nutrition;
- **should** develop products, services and marketing approaches that improve nutritional outcomes.

Dec. 2011

Poverty

There must be no extreme poverty.

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Poverty

What is extreme poverty?

In 2005 the World Bank defined extreme poverty as living on less than $1.25 a day. At the time, an estimated 1.4 billion people were still in extreme poverty. In 2011 terms, this means surviving on the equivalent to $1.50 a day.

Why is this critical?

Extreme poverty is one of the most critical barriers to human development. It is the most important barrier to accessing education, and uneducated people (especially women and girls) are less likely to attain productive employment, access family-planning resources and achieve gender equality. When these are out of reach it can lead to a vicious cycle of further poverty. Poverty is also the most important driver of poor health outcomes.

Implications:

- **must** address key areas of action articulated against other social boundaries;
- **should** support pro-poor economic growth policies;
- **could** develop products, services and business models that address the needs of the poor.

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Health

There must be universal access to preventative and restorative healthcare.

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What are preventative and restorative healthcare?
Preventative care focuses on preventing diseases and injuries rather than treating them once they've already happened; restorative care aims to bring patients back to functional health. Together, they are critical to protecting human welfare and sustaining economic and social development.

Why is this critical?
Keeping people healthy enhances economic growth, increases political stability and reduces the likelihood of conflict. Yet millions suffer because they do not have the money to pay for healthcare, or because they pay for what they can't afford. Every year, 100 million people are pushed into poverty because of payment for medical treatments. The link goes both ways: malaria is responsible for a 'growth penalty' of up to 1.3% per year in some African countries, and diabetes costs the world approximately €150 billion already. By 2020 there will be over a billion elderly people on the planet, placing further pressure on healthcare systems. And climate change will be an exacerbating factor, changing patterns of disease and increasing water and food insecurity.

Implications:
- **must** focus on preventative measures for key chronic diseases;
- **must** devise cost-effective care approaches;
- **must** increase coverage of health insurance and health services.

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Reproductive rights

All women must have access to reproductive healthcare.

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Reproductive rights

What are reproductive rights?

Reproductive health is a basis for having healthy children, intimate relationships and happy families. Every woman and adolescent girl has a right to reproductive health.

Why is this critical?

Roughly 215 million women in developing countries continue to use ineffective methods of birth control or no birth control at all. Women who have greater access to information and education are better equipped to make independent choices about their reproductive health and take up job opportunities, thereby boosting the economy and sustaining their children's livelihoods. Women who have a secondary or higher education are four times more likely to use contraception than women who have received no education at all, for example. By addressing the unmet need for contraceptive information and services, roughly 22 million unplanned births, 25 million induced abortions and over 150,000 maternal deaths could be avoided.

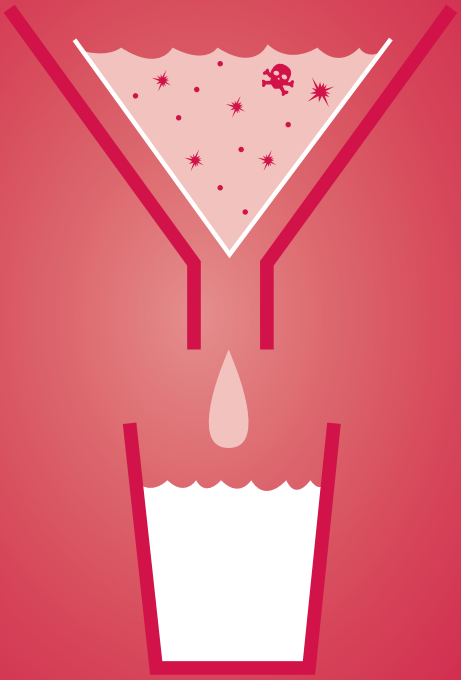
Implications:

- **must** increase access to education for women;
- **should** support access to facilities for contraceptive information and services;
- **could** increase understanding of reproductive health.

Dec. 2011

Water & Sanitation

There must be universal access to safe drinking water and proper sanitation.



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Water & Sanitation

What is safe drinking water and proper sanitation?

Water for human consumption with no impurities that threaten health in the short or long term. Proper sanitation comprises hygienic sewage disposal for a clean and healthy living environment.

Why is this critical?

Safe water and hygienic sanitation are essential for health. Today, 84% of people have access to improved sources of drinking water, but the longer-term future is less certain: 47% of the world's population will be living under severe water stress by 2030, a situation that will almost certainly be exacerbated by climate change. Some 2.5 billion people worldwide still do not have access to sanitation. About one in four children under the age of five is underweight partly as a consequence of this. The economic benefits of investing in improving water and sanitation are $3 to $4 for each $1 invested.

Implications:

- **must** improve access to water supplies and sanitation facilities;
- **must not** pollute water supplies;
- **should** deploy affordable technologies to address water and sanitation issues.

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Education

There must be universal access to education.

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Education

What is education?

The process of acquiring knowledge and understanding.

Why is this critical?

Education provides children and adults with the tools for learning. Literacy, in particular, is at the heart of basic education, and is essential for eradicating poverty, reducing child mortality, curbing population growth and achieving gender equality. An estimated 776 million adults – or 16% of the world's adult population – lack basic literacy skills. About two thirds are women. Most countries have made little progress in this area in recent years.

The education and training of a country's workers is a key factor in determining productivity levels and business growth. The benefits of education are also felt through lower crime, increased civic participation, better health and so on. There are also huge disparities in the quality of education that children receive, which has knock-on effects on life skills and opportunities.

Implications:

- **must** support universal access to free primary and secondary education, and ensure marginalised groups, such as girls and rural dwellers, have full access to educational opportunities;
- **should** improve standards and consistency of education;
- **could** use schools as critical hubs for promoting a better understanding of sustainable development.

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Skills

Must build skills and capabilities for individuals to participate in the economy and society.

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What are skills?

A skill is the learned capacity to carry out a task for predetermined results.

Why is this critical?

Skills enable people to participate in society and the economy. Without basic skills, it is difficult, if not impossible, for people to engage with many of the social foundations that make up a sustainable economy. For instance, universal access to information is almost useless without literacy and numeracy; resilient communities depend on people having good interpersonal skills.

Good skills are vital for a business's success, particularly management and leadership skills. People's skills are vital to their job prospects, and therefore to their ability to learn and participate in the economy. The skill of knowing how to learn enables everyone to grow, flourish and adapt.

Implications:

- **must** enable people to gain the basic skills for participating in society and the economy. These will often be delivered through education and experience;
- **should** build wide-ranging skills and capacity of individuals to realise their potential;
- **should** build the skill of how to learn.

Information

There must be universal access to information.

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Information

What is information?

Knowledge acquired in any manner.

Why is this critical?

Affordable access to information increases understanding and subsequently guides behaviour and decisions. The ongoing digital revolution will drive increased access to information. Information technology (IT) enables the media to contribute more to transparent, accountable politics by opening public debates and exposing corruption and abuse. The rise of social media platforms such as blogs and social networking have led to more individuals being involved in calling key institutions to account across the world.

Access to IT is closely linked to a country's level of economic development, for example, access to broadband is an important foundation for future growth in employment and productivity.

Research by Vodafone suggests that, in a typical developing country, an increase of 10 mobile phones per 100 people boosts GDP growth by 6%.

Implications:

- **must** support affordable and open flow of information and knowledge between people, business and communities;
- **should** enable others to provide universal access to information;
- **could** develop platforms for open, transparent sharing of information.

Dec. 2011

Shelter

There must be adequate shelter for all.

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Shelter

What is adequate shelter?

The Habitat Agenda defines 'adequate housing' as "more than a roof over one's head". It also means adequate privacy; space; physical accessibility; security; security of tenure; structural stability and durability; lighting, heating and ventilation; as well as associated adequate basic infrastructure, such as water supply at an affordable cost.

Why is this critical?

Adequate shelter provides security and warmth, which enable people to live well. It is a cornerstone for the realisation of human rights, for livelihoods and for poverty reduction.

Good affordable housing is in short supply, both in the developed world and developing countries. According to UN Habitat more than a billion people "still lack adequate shelter and are living in unacceptable conditions of poverty." It is estimated that 78% of the world's urban population is low-income families living in slums, and the absolute number of slum dwellers is rising due to rural-urban migration and population growth. Households need an average of 8 to 12.5 times their annual income to buy a house in developing countries.

The provision of housing impacts local economies through the economic activity it generates (eg construction), and the provision of spaces for living, working and leisure activities.

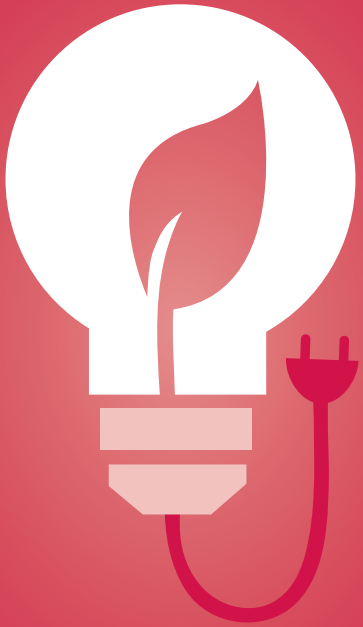
Implications:

- **must** provide adequate housing available to all and a stable market for housing;
- **should** raise standards of homes so that they are more accessible, environmentally sustainable, affordable and so on;
- **could** enable others to provide adequate housing.

Dec. 2011

Energy

Must provide universal access to sustainable energy.



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Energy

What is energy?

Energy is the ability or capacity of a physical system to do work. Energy exists in several forms such as heat, kinetic or mechanical energy, light, potential energy and electrical.

Why is this critical?

Access to and use of energy in various forms is fundamental to achieving and maintaining quality of life. Energy is a pivotal factor in reducing poverty, for without it opportunities for education, employment and good health are limited. Some 1.3 billion people do not currently have access to electricity.

Energy is a global industry that directly affects many other industries and political security, and energy demand from developing countries is growing exponentially. The volatility of energy prices (as evidenced by the price of oil) in the short term has a major impact on economies and businesses, in their ability to access and pay for vital goods and services.

The IEA estimates that $48 billion needs to be invested each year if universal access is to be achieved by 2030, and renewable energy technologies could account for half the new capacity installed. This is creating significant risks and opportunities for business, government and communities worldwide in terms of generating and supplying efficient and low-carbon energy in the future.

Implications:

- **must** provide access to sustainable energy and use energy as efficiently as possible;
- **should** explore innovative solutions in energy supply, demand, storage and distribution;
- **could** seek to achieve a greater level of self-sufficiency by generating own low or zero-carbon energy.

Dec. 2011

Resilience

Must build resilience of natural and human systems to cope with shocks and stresses.

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Resilience

What is resilience?

Resilience is the ability to absorb disturbances, and adapt and learn from the experience.

Why is this critical?

A system with a low resilience – whether a natural habitat, a city or the financial capital markets –can only cope with smaller shocks and stresses. All our systems are vulnerable to shocks and stresses from at least two causes. First, the current mode of unsustainable development is putting many natural and human systems under strain, resulting in extreme events (from droughts to civil unrest). Second, in our global society, shocks are transmitted further, faster and with greater complexity. Therefore building resilience is vital because predicting exactly what will happen is impossible. For example, the collapse of Lehman Brothers affected financial markets, the world economy and government debt, with further consequences on job prospects for young people, provision of public services and civil unrest. If the financial capital markets had been more resilient then these cascading effects could arguably have been reduced or avoided.

Implications:

- **must** design and act for recovery and flexibility, not only growth and efficiency;
- **should** build ongoing processes for learning, recovery and flexibility into strategy.

Dec. 2011