

What Makes Sustainability Possible



Introduction

Achieving sustainable development is becoming ever more important. This brochure shows what can and should be understood by “sustainability”. The term, first used in forestry, at the time alluded to the idea that the annual rate of wood harvested should not exceed the rate of its regeneration. Hence, sustainability initially means carefully managing the available resources to ensure a good life both today and in the future.

In order to achieve this, the Helmholtz Association’s **Integrative Concept of Sustainable Development*** has been developed under the leadership of the Institute for Technology Assessment and Systems Analysis (ITAS), Karlsruhe/Germany. This scientific and ethical concept is based on the deliberations and resolutions of the United Nations going back to the 1980’s. It takes into account the needs of both present and future generations, and combines thinking on a global scale with actions at a local level. Its main objectives are to ensure human existence, to make sure fundamental needs are met, to protect people’s and societies’ scope for development and freedom of action. Yet, finally, each society must decide for itself how it wishes to shape sustainable development.

Fifteen rules of this concept are outlined on the following pages. These rules make sustainability tangible and help implement the objectives mentioned above. It is possible to determine whether a particular measure does or does not make a contribution towards sustainable development by assessing whether, to what extent and how these rules are met. To facilitate the application of these rules, they are underpinned with specific criteria and indicators, which are not presented in this overview.

The Integrative Concept of Sustainable Development and its 15 substantive rules, outlined below in abridged form, may be found – along with a further 10 instrumental rules – in the underlying study: Kopfmüller et al. (2001): Nachhaltige Entwicklung integrativ betrachtet. Konstitutive Elemente, Regeln, Indikatoren. Berlin.

* German original title:
Integratives Konzept Nachhaltiger Entwicklung (IKoNE)

1. Securing human existence

- 1.1 Protecting human health
- 1.2 Ensuring that basic needs are met
- 1.3 Enabling all people to secure their own livelihood
- 1.4 Offering equal opportunities of using the environment for everybody
- 1.5 Reducing excessive income or wealth inequalities

2. Maintaining society's ability to manufacture products or provide services

- 2.1 Using renewable material and energy resources sustainably
- 2.2 Using non-renewable material and energy resources sustainably
- 2.3 Using the environment without damaging its absorption capacity for harmful immissions
- 2.4 Avoiding unacceptable technical risks
- 2.5 Developing property as well as skills and knowledge sustainably

3. Preserving options for development and action

- 3.1 Providing equal opportunities in education, employment, public office, and information
- 3.2 Enabling participation in social decision-making processes
- 3.3 Preserving cultural heritage and cultural diversity
- 3.4 Conserving nature and landscape as cultural assets
- 3.5 Maintaining social cohesion



Protecting human health

Nobody may damage the environment through substances or other influences to an extent that will or may harm humans.

Human health may not be put at risk through hazardous substances released into the environment, nor may it be exposed to any other harmful influences. Human health is to be protected by reducing the emission of chemical substances and organisms damaging to health, by improving protection against harmful radiation, and by avoiding noise and stress.



Ensuring that basic needs are met

A minimum level of basic services as well as protection against key life risks must be guaranteed for all members of society.

Every person must at least have access to minimum standards of accommodation, food, clothing and health care. Everyone needs to be protected if he or she should become ill or unable to work or suffers from a disability. The purpose of this demand is to ensure that every person may be recognised as a full member of society.

1.3



Enabling all people to secure their own livelihood

All must be able to secure their livelihood through their own work undertaken voluntarily, including child care, caring for dependants, community work.

The working environment has in recent years undergone major changes and continues to do so. This has led, among others, to the loss of permanent employment and social protection mechanisms. However, everyone should have the opportunity to secure their own livelihood, and that of their family, through their own work and without having to rely on welfare payments.

Work in this context refers not only to "gainful employment" in the traditional sense, but also to raising children, household work, caring for relatives, community work, gardening, helping neighbours, and the like. Work may take one or more of the above-mentioned forms. In any event, the condition is that work is paid suitably to guarantee a decent living.

1.4



Offering equal opportunities of using the environment for everybody

All humans living today and in the future have a right to use nature for themselves. Resources shall be distributed fairly. Nobody may be excluded from their use.

The opportunities to use the environment should be shared fairly between people living today and in the future. A fair distribution of the utilisation possibilities amongst the people living today must be achieved first. Poverty, for instance, leads to migration, destruction of the environment, overpopulation, and civil wars, so that neither the people living in such conditions today nor their offspring concern themselves with preserving the environment for future generations. Hence, the rich members of the world community must support the poor members to ensure that they also receive a fair share of available material and energy resources. At the same time, they must help them protect nature and its resources.

1.5



Reducing excessive income or wealth inequalities

Extreme differences in income and wealth distribution need to be reduced.

While some people in Europe live in abundance, another part of the population lives below the poverty threshold. Wealth is also unevenly distributed globally, especially between developing and industrialised countries. The uneven distribution of goods is at the root of many global as well as national problems. Excessive wealth and income imbalances are to be avoided or reduced because they are the main cause of poverty and social marginalisation.

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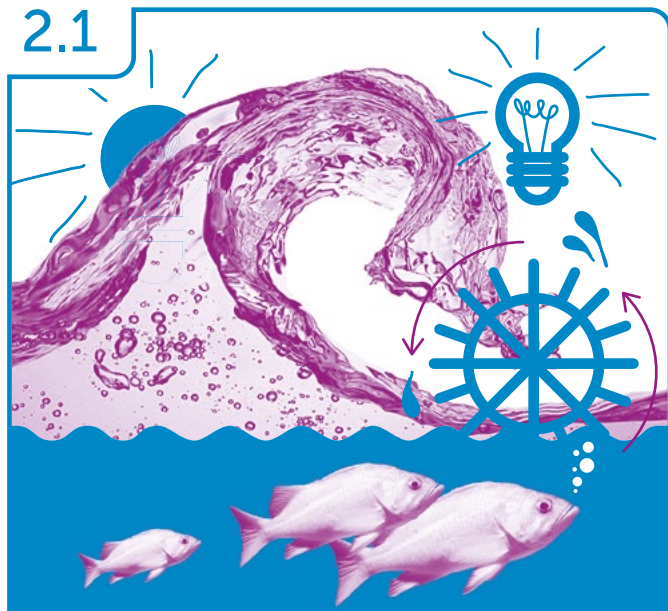
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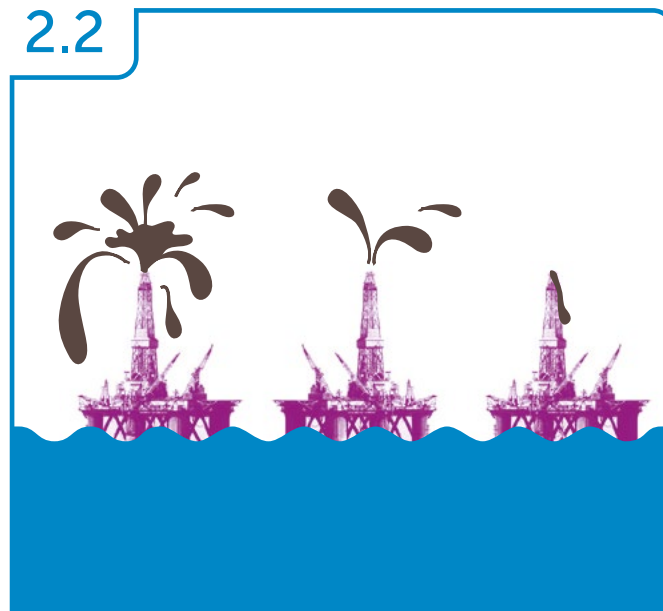
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2.1 Using renewable material and energy resources sustainably

Mankind shall not use more from nature than nature is able to provide or restore of its own accord. Every important ecosystem must have the chance to survive.

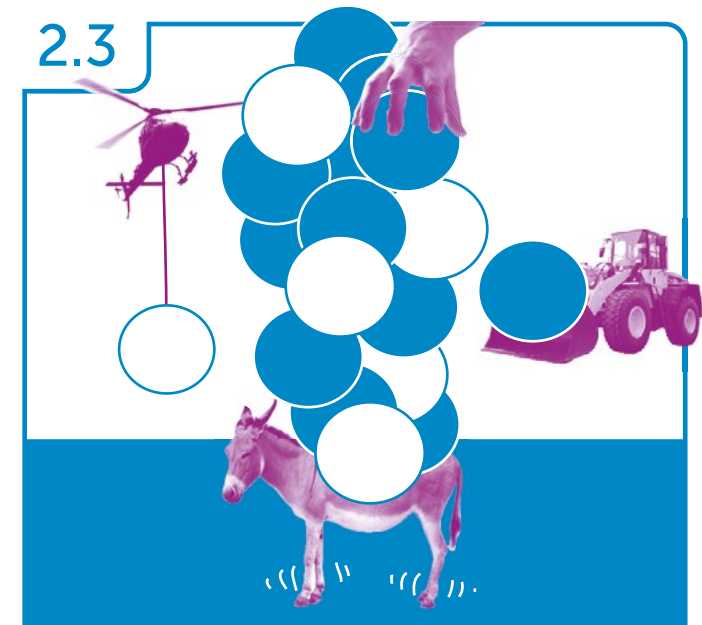
Sustainable use implies that we may not take more from nature than nature is able to restore. Hence, the first thing to find out is how much may be taken from nature without doing irreversible damage. Enough must be left to allow nature to recover. Every ecosystem must have the chance to survive, whether this ecosystem is important to mankind today or whether it could become important in the future. A high diversity of species is important to ensure a healthy ecosystem. For this, a sufficient number of individuals of the same species must exist if this species is to survive. Nature must therefore be protected as well as possible over the entire area. For that reason, certain rules must be defined and implemented in areas heavily exploited by agriculture and forestry.



2.2 Using non-renewable material and energy resources sustainably

Non-renewable resources may only be consumed to a limited degree to ensure that future generations will still be able to use them.

If non-renewable resources (e.g. coal, oil, or copper) are consumed excessively, there will be nothing left for future generations. Yet, if a decision against their use were taken, the logical implication would be that future generations would not be allowed to use them either. The compromise stipulates that although mankind may extract and consume these resources it must ensure that these resources are still available to a certain extent to future generations for an appropriate period and until substitutes are found. Industrialised countries in particular must find ways to cut back their consumption either by in part renouncing the extraction and consumption or by using these resources more efficiently. Alternatively, they may substitute renewable resources and energy sources for non-renewable ones.



2.3 Using the environment without damaging its absorption capacity for harmful immissions

Mankind may not release more harmful residues and radiation into the environment than it is able to absorb.

Man releases many different substances (e.g. greenhouse gases or heavy metals) as well as radiation (nuclear radiation, waste heat, noise, light pollution) into nature which are harmful to nature as well as human health. Although nature is able to absorb a limited level of pollutants, man must ensure not to burden it with more than it can cope with. It is difficult to determine where exactly the limits are. Moreover, unexpected interaction with other substances may impact on these limits. It is therefore necessary to conduct analyses as comprehensive and precise as possible, considering the various uncertainties and knowledge gaps. To be on the safe side, the limits which have been set should not be exploited fully.



Avoiding unacceptable technical risks

Technical processes with potentially disastrous consequences for mankind and the environment must be avoided.

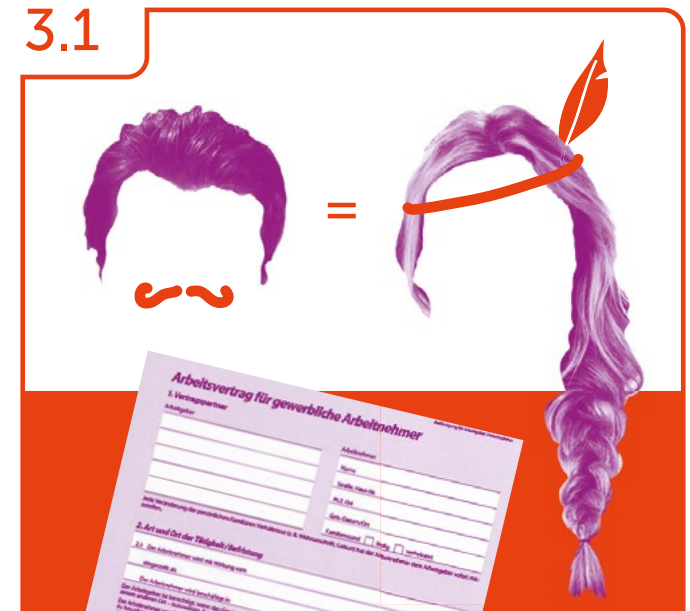
Modern technical processes promise great opportunities, e.g. in the fields of medicine, energy supply or nutrition. Yet, their deployment should always be critically examined since they often also harbour risks for man and the environment. Technical processes which are unlikely to have disastrous consequences but which would cause great damage in the event of an accident should be avoided if at all possible (for example, nuclear energy). Less risky solutions should be adopted instead. Processes which in each individual case only cause limited damage but which are used very frequently and hence increase the probability of a problematic impact should be used less and rendered safer (examples: transport of hazardous goods, oil tankers). Other processes, the use of which is viewed critically, are those where no adequate information is available yet about their consequences and the damage they might cause (examples: genetic engineering, nanotechnology).



Developing property as well as skills and knowledge sustainably

We must leave our descendants an inheritance made up not only of goods but also of suitable skills, competencies, knowledge, and know-how.

We must leave future generations an inheritance that enables them to manage and take care of themselves. This means that we must bequeath to them the production plants and their fittings (machines, tools) as well as the technical infrastructure in an appropriate amount and quality. Yet we must also pass on the skills and knowledge to use these and to develop them further. Sufficient means or resources should be available so that the rules of sustainable development may also be heeded in future. Knowledge may either be passed on directly from one person to the next or by way of publications, databases or laws. Similarly, it may also be passed on through institutions or traditions.

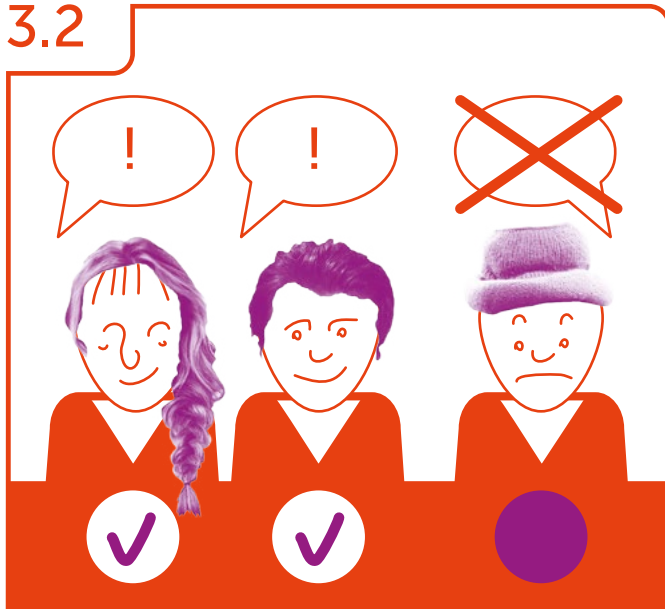


Providing equal opportunities in education, employment, public office, and information

All members of a society must enjoy equal opportunities when it comes to access to education, information, employment, social standing, and political office.

All members of a society must enjoy equal opportunities to exercise their personal liberty and their political rights. They must also be able to develop their own talents and realise their life ambitions. All should have or receive equal access to basic social necessities, namely self-confidence and self-respect as well as access to education, information, employment opportunities, political office, and positions. This applies in particular to those social groups hitherto disadvantaged and still suffering disadvantages today. Differences in gender, national or ethnic origin, skin colour, culture, age, and sexual orientation shall not stand in the way of access to basic social necessities. Children from disadvantaged backgrounds must receive the same initial opportunities as children with a better starting position.

3.2



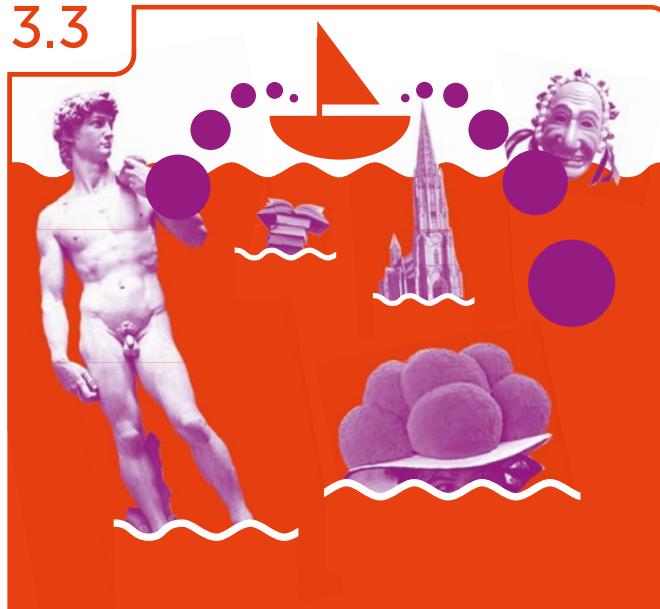
Enabling participation in social decision-making processes

All members of a society must be empowered to take part in decision-making processes of societal importance.

A society may only develop sustainably if the interests and knowledge of its members have some influence on the political opinion-forming process and if everybody is able to take part in societal decision making. In a modern democracy, this is made possible through the chance to vote and be elected, through access to public office, through freedom of opinion and freedom of assembly, and through further forms of civil participation.

Further forms of participation in decision-making processes that are to be encouraged and used include: voluntary civic commitment, citizens' forums, round tables, more corporate co-determination, and new forms of direct democracy such as petitions and referenda on central societal issues of future relevance.

3.3



Preserving cultural heritage and cultural diversity

The cultural heritage of mankind and its cultural diversity must be preserved.

Culture is reflected not only in the attractions of a country, but also in the diversity of its lifestyles and languages, and other traditions. Culture is not rigid, but ever-changing. It is influenced by other cultures and in turn influences other cultures. Every society itself includes a variety of cultures. Culture is a very important source of creativity, and its diversity must therefore be preserved. A key precondition for this is the mutual respect between cultures. The culture of a country reflects its history, customs, conflicts, and struggles, while at the same time continuing to develop. It is, therefore, subject to the tension between tradition and modernity. Sustainable development is a process of cultural change: It does not impact on cultures from the outside but must be itself part of a society's culture.

3.4



Conserving nature and landscape as cultural assets

Especially unique landscapes which have either been created by man or left untouched must be conserved.

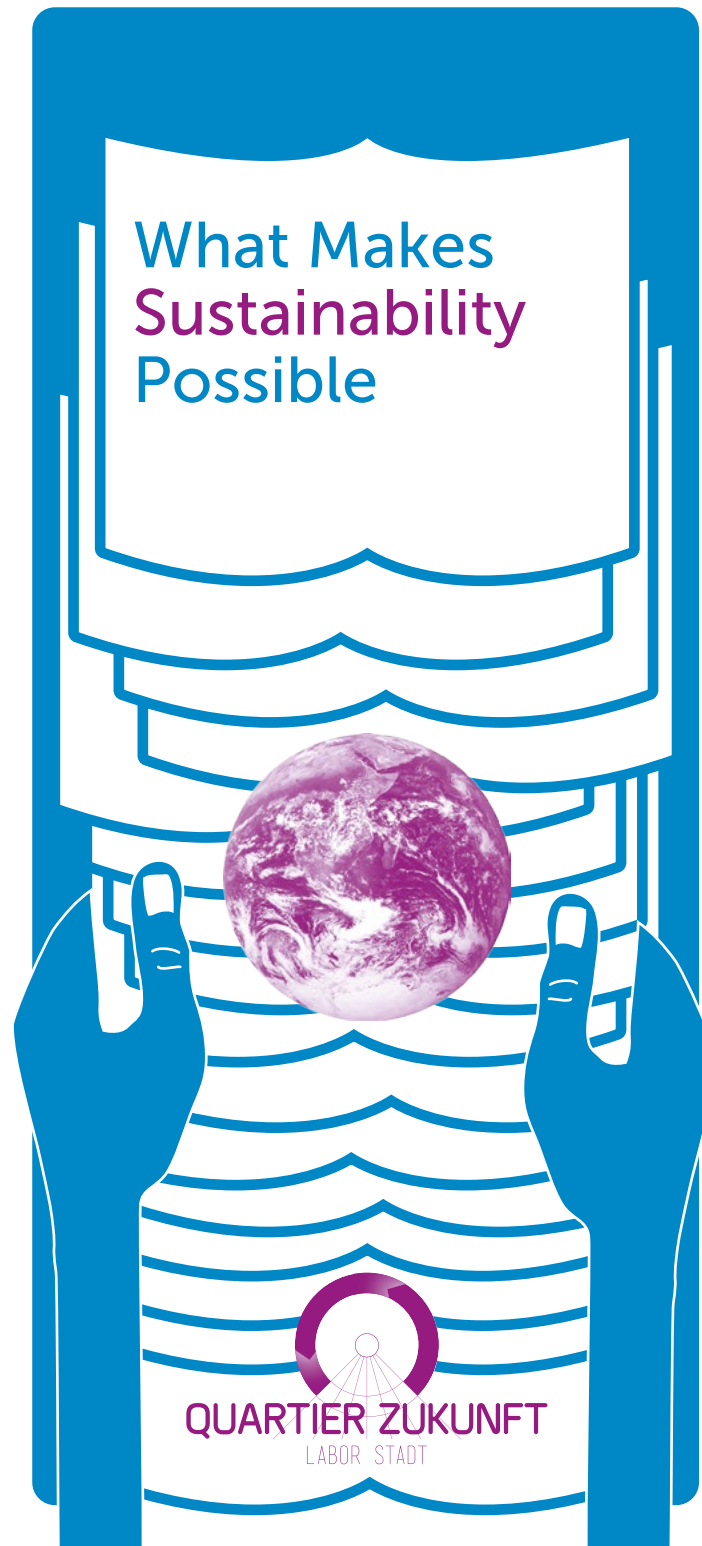
Not only do we need nature to survive but also for our gratification. Our children and grandchildren should also be able to enjoy nature – in keeping with the principle of inter-generational equity. It is necessary to conserve at least those landscapes which are particularly unique. These include not only untouched (wildlife) landscapes but also those shaped by the human hand. The decision which landscapes are to be protected should be taken in a generally intelligible, transparent and democratic process.



Maintaining social cohesion

Social cohesion must be maintained and strengthened.

A society thrives if its members stand together, if nobody is excluded and if a common development may take place. Trust and good relationships among people contribute to a peaceful social coexistence. Existing social networks must therefore be strengthened and new ones created to support these elements. With this in mind, members must be open to new and different ways of life. Education plays an important role in encouraging unprejudiced relations. It ensures that social and cultural issues are understood. Overall, a sense of justice and fairness, tolerance, solidarity, and public interest orientation should all be strengthened.



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