The History of Sustainability
The Origins and Effects of a Popular Concept

Edmund A. Spindler

Introduction

Rarely has a concept gained status as rapidly or with such profound implications as the term 'sustainability'. Within a relatively short period of time it has become a loose/rather nebulous metaphor for describing current issues. A rather unwieldy, catch-all term, it can be found across a wide range of topics. It has become an extremely popular term, particularly in connection with economic activities. In the field of ecologically oriented economics, it has significantly reinvigorated research and has become the starting point for a new approach. There is even talk of a paradigm shift, with sustainability viewed as a "driver of innovation" (Hollmann-Peters, 2011, p. 18). The growing debate over global environmental problems (Chasek *et al.,* 2006) has highlighted and further strengthened this trend.

> "Hence, the term 'sustainable development' seems to be enjoying immense popularity. No speech about the future of our society is complete without it, it serves as a slogan used by politicians, regularly keeps lawyers occupied, is a hot topic among scientists and increasingly discussed by the board of directors of corporations" (Reidel, 2010, p. 96).

The term sustainability is often used in an undiscerning and loose way and has turned into somewhat of a "container term" (Vogt, 2009, p. 111; Reidel, 2010, p. 98); it has become a buzz word, and one that is worth reflecting on. At any rate, sustainability has developed into the "categorical imperative of contemporary responsibility for Creation" (Vogt, 2010, p. 7) and the 21st century has been chosen as the "century of sustainable development" (Kreibich, 2011, p. 47). Additionally, Switzerland was the first country to add the term *sustainability* to its constitution in Article 2 (since January 1, 2000): "The Swiss Confederation supports the common welfare, the sustainable development, the internal cohesion and the cultural diversity of the country" (Grober, 2010, p. 204).

"The concept of sustainable economic management has become a political key word in recent years. Anybody who wants to achieve something, has to demonstrate that he or she intends to do it in a sustainable way" (Diefenbacher *et al.,* 1997, p. 21). In the academic sector this is already a topic which is being addressed (de Haan, 2007; Kless, 2010). The University of Applied Science in Eberswalde, for instance, is now called the "University for Sustainable Development" and uses the advertising slogan "our name says it all" (www.hnee.de). One of its master's degrees on offer is "Sustainable Tourism Management".

Sustainability is no longer a niche topic. "The concept of sustainability will always have its relevance. Sustainability has become the subject for a contemporary assessment of progress and responsibility, freedom and culture" (Bachmann, 2010, p. 2). Linguists and scientists can therefore claim that the concept of sustainability has been well established globally in politics, the economy and our society (Reidel, 2010). However, whilst the term is becoming increasingly popular, doubts have also been raised about whether the promised harmonization of ecological, social and economic goals, associated with sustainability, is actually achievable. Also because the term has entered the vocabulary of advertising language in German, where *nachhaltig* is e.g. also used for shampoos that remove dandruff (Grober, 2010).

Sustainable development is a multi-faceted term—"a buzz word and imported word" but also a "disparaging and praising term at the same time" (Reidel, 2010, p. 97 and p. 99).

But what is the origin of the term, what is behind it and how is it used?

The following text will outline some milestones in the evolution of the terms "sustainability" and "sustainable development", as evidenced by discussion of the relevant literature.

A recent concept with a long history

Sustainability or sustainable development has its roots in all cultures. A lake in South America is evidence of this; its name, Manchau gagog changau gagog chaugo gagog amaug, means: "We fish on our side, you fish on your side and nobody fishes in the middle." This is "obviously a simple instruction for the sustainable use of vital resources" (Schreiber, 2004) and demonstrates that sustainability is a survival strategy. This is also evident in the management of commons (Chasek *et al.,* 2006), which shows commitment to sustainability, a sense of responsibility and respect for nature.

Ever since antiquity, a shared understanding of the concept of sustainability has existed, particularly in rural cultures (Vogt, 2009). The roots of the term can be traced back to the world of hunting, where hunters and gatherers were keen to secure their livelihood. "The old German word for 'sustenance,' used to describe those supplies that were saved for times of need" (Reidel, 2010, p. 102).

The term 'sustainable' or rather 'to sustain' has been "shown to be a derivation of the noun "sustenance" (actually retain, what one retains) used towards the end of the 18th century" (Vogt, 2009, p. 116). In everyday parlance, 'sustainable' is nowadays still used in the sense of 'enduringly effective'. Also the Bible requires mankind to take care of the earth and to look after it; this could be seen as an early proof of Sustainability (Grober, 2010).

Roots in the German Forestry Industry

In the 18th century, sustainability was laid down first as a principle of the German forestry industry. The first documented idea of sustainability was written by the Saxon mining director Hans Carl von Carlowitz (1645-1714) from Freiberg (Saxony). In his book *Sylvicultura Oeconomica* (or the *Economic News and Instructions for the Natural Growing of Wild Trees*), published in 1713, he suggests a form of forestry where only so much wood should be cut as can be re-grown through planned reforestation projects. He talks about "sustainable use of forests" and pleads for "forest management that allows for a continuous, perpetual use of timber" (Schretzmann *et al.,* 2006, p. 68). What makes the work of Von Carlowitz particularly remarkable is that it was written with a focus on economics. He had obviously already recognised that the forest could not be saved by the forestry industry alone but rather by the economy as a whole. Ulrich Grober (2010, p. 94) calls this a "societal task". This holistic view is characteristic of the concept of sustainability, which is why a "process" (Chasek *et al.,* 2006, p. 425) or a process-oriented definition of the term is discussed in the text.

Another pioneer of the sustainable forestry industry is mining director Georg Ludwig Hartig (1764-1837) from Gladenbach, Germany. He wrote in his *Instructions for the Taxation of Forests* in 1804: "There will be no sustainable forest industry if lumbering in the forests is not based on sustainability. Every wise forest authority must assess the use of the state's forest without delay and in such a way that our descendants can obtain at least as much gain from them as today's generation does" (www.hessen-nachhaltig.de).

As a result, sustainability in the forest industry or sustainable forest management is not an independent objective. It is, rather, the core principle of an

economic forestry operation based on the following components (Schretzmann *et al.,* 2006, p. 69):

- **Durability**
  Resources and functions of the forest are to be secured in the long term.
- **Responsibilities to Society**
  Society's interest in the forest can lead to restrictions relating to rights of use.
- **Economics**
  Necessity of economic forestry with systematic protection of natural resources in order to achieve optimal economic benefits.
- **Responsibility**
  Sense of responsibility for the significance of the forest for future generations.

This concept of sustainability or sustainable development in forestry has been used for many other global environmental issues and has become a fundamental principle in all areas of the economy and society. Sustainability is essentially about the preservation of natural capital. "The natural stock of resources needs to remain stable and mankind has to learn to live from its yield rather than its over-exploitation" (Diefenbacher *et al.,* 1997, p. 24). This notion also plays a crucial role in the fishing industry (Carnau 2011), and even in development aid sustainability is achieved when a stable state is reached and a certain degree of autonomy has become apparent (Vogt, 2009). "This illustrates that in many areas the concept has developed far beyond the original forestry and ecological framework" (Vogt, 2009, p. 117).

"Living off the interest rather than the capital" can be considered the general motto of sustainability today.

From a view point of terminology, the concept of Sustainability is not an exact definition of Sustainability but to determine, what should endure and to link spatio-temporal levels, which must result in policy building of Sustainability. The basic idea is that a system is sustainable, if it survives and endures on a long term basis. How concrete these measures are must be determined individually (Carnau, 2011).

Grober (2010) therefore considers the idea of Sustainability not as a concept developed by technocrats or by the *Woodstock Generation* but as part of the worlds cultural heritage.

> "The principle of sustainability spread via the College for Forestry in Freiberg near Dresden to Germany and in the US. In 1780 it appears for the first time in an encyclopaedia of forest sciences. A forestry regulation from 1795 explicitly refers to future generations by limiting the use of the forest to the extent that posterity would be allowed the same utilisation of resources. In forestry regulations of the 19th century the concept of sustainability is expanded and defined as the optimal planting of trees in soil that is suitable for that purpose and the use of mixtures of crops, including relevant care of their soil. Therefore, sustainability goes beyond setting limiting principles" (Vogt, 2009, p. 115).

Based on this historical development, sustainability appears to many as a 'German speciality' (Schretzmann, 2011). However, the concept is "not uniquely German" (Vogt, 2009, p. 115), but in the context of Enlightment to be seen form an international perspective. (cf also Grober, 2010) and has to be viewed within an international context of Enlightenment. Sustainability is a "life principle" (Vogt, 2009, p. 117) respectively and "ethical principle" (Grober, 2010, p. 266) that is characterized by transparency, participation and an enlightened, process-related (holistic) view. It requires a "mature individual" (consider Immanuel Kant) who can take an interdisciplinary approach to how he/she thinks and works. It is this holistic view that makes the term sustainability so versatile, which is why it is very well suited for, and easily adopted by, cross-cutting issues such as "environmental protection" and "environmental precaution". "Sustainability is often understood as a new type of environmental policy but it is more than environmental protection. It takes into account the responsibility for future generations (inclusive justice) and also for people living today (distributive justice)" (Freericks *et al.,* 2010, p. 250).

Sustainability in environmental policy

As well as the (historical) forestry industry, the 'new environmental policy' gave sustainability a new boost. This boost came with the publication of the 1962 book *Silent Spring*, by Rachel Carson. Thanks to this eco-classic, environmental protection became an important interdisciplinary topic and society's environmental awareness rose globally.

As a result of the environmental debate, the US adopted the National Environmental Policy Act in 1969. This law was enforced on January 1, 1970 and caused a global furore, particularly its requirement for a comprehensive Environmental Impact Assessment (EIA) for large projects with public participation. This concept was subsequently introduced in Germany and

elsewhere in Europe. According to Article 2 of EIA law, EIA identifies, predicts and evaluates the effects of a project—with participation of citizens—on:

1. Humans, including human health, animals, plants and biological diversity
2. Soil, water, air, climate and landscape
3. Cultural goods and other material assets, as well as
4. The interaction of all of the above goods.

This cross-sectional, trans-sectoral and cross-media approach goes beyond current environmental policy, which is focused on sectors, and makes environmental protection an eco-systemic challenge that serves as a base for an environmental management system and also for sustainability management (von Hauff, 2010; Bay, 2010). Sustainable development in this sense is an "environment policy perspective that emphasizes the necessity to reconcile present and future economic needs through protection of the environment" (Chasek *et al.,* 2006, p. 425). This also means the "Courage of Less" (Grober, 2010, p. 270) as Sustainability is basically a strategy of self-restriction and reduction.

As a first conclusion it could be stated, following Albert Schweitzer that Sustainability is the ability to think and plan ahead (Grober, 2010).

The new global environmental policy has been considerably influenced by the UN Environmental Conferences (Figure 1). This is also where the term sustainability was coined and where it gained significant popularity (on the chronology of global environmental events and on milestones in environmental policy) (see Chasek *et al.,* 2006, pp. 417-422).

UN Environmental Conferences

1st Environmental Conference in 1972 in Stockholm

2nd Environmental Conference in 1982 in Stockholm

3rd Environmental Conference in 1992 in Rio de Janeiro

4th Environmental Conference in 2002 in Johannesburg

5th Environmental Conference in 2012 in Rio de Janeiro (Rio+20)

Figure 1:   UN Environmental Conferences

In the context of the UN Conferences, the concept of 'sustainability' was defined relatively independent of its conceptual history based on forestry management. The principle previously known as the 'ecological economic principle of nature management' was now expanded to a comprehensive model linking 'environment' and 'development' (Vogt, 2009, p. 117). The concept of sustainability has continued to develop in a process that has now taken on a life of its own (Diefenbacher *et al.,* 2006). This is particularly the case in discussions about development policies relating to sustainable ways of fighting poverty or to the equitable distribution of natural resources. The UN Conference on Environment and Development was initiated as a result of a new North-South dialogue. Professor Vogt writes concerning this: "The concept of sustainable development has gained ethical and political significance that goes beyond the specific ecologic aspect" (Vogt, 2009, p. 117). It is interesting to note that sustainability has raised the important question of 'distributive justice'.

In 1972, the first worldwide environmental conference was held in Stockholm on a Swedish initiative and with the support of the US. 114 countries (not including the former USSR) – a novelty in the history of the UN – and numerous NGOs (nongovernmental organizations), altogether 1,200 delegates participated in the UN Conference on the Human Environment. They adopted an instrumental declaration that contained fundamentals for dealing with the global environment and an action plan regarding international cooperation on environmental protection as well as principles concerning the foundation of UNEP. "The most important outcome of this conference was the foundation of the United Nations Environmental Programme (UNEP) based in Nairobi" (Diefenbacher *et al.,* 1997, p. 40).

UNEP provided global environmental policy with a voice and also with a continuity that led to the organisation of a UN environmental conference every ten years.

> "In the first half of the eighties, sustainable development became a buzzword for an alternative paradigm. Its use became more popular at conferences that brought together NGOs and government officials in the US and elsewhere. In 1987, the publication of "Our Common Future", the report of the World Commission on Environment and Development (better known as the Brundtland Report, after the Chairman of the Commission, the former Norwegian Prime Minister Gro Harlem Brundtland), made the term 'sustainable development' widely known and provided the impulse to replace the dominant paradigm with the new paradigm. (…) The Brundtland report defines sustainable development as development that is 'in harmony with both present and future needs'" (Chasek *et al.,* 2006, p. 49).

The Brundtland Commission was to establish the most significant definition of sustainability in politics, describing sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (Diefenbacher *et al.,* 1997, p. 41; Deutscher Bundestag, 1998, p. 28).

Another outcome of the Brundlandt Report is the subsequent decision by the UN General Assembly in December 1989 to organize a conference called the United Nations Conference on Environment and Development (UNCED, to be held in Rio de Janeiro, Brazil, in 1992).

Rio and its Consequences

Informally known as the Earth Summit, the UN Conference on Environment and Development of 1992 has become a symbol of the shared responsibility of all the world's nations. Approximately 200 countries in the world attended, 178 participated in the conference. They pointed out the urgent need for action to preserve the Earth's natural resources and laid the foundations for a qualitatively new and significantly more intense degree of co-operation in environmental and developmental politics. It could be said that Rio laid the groundwork for global governance in "Earth Politics" (von Weizsaecker, 1992, p. 9).

Here, the terms of "Global Governance" (Carnau, 2011, p. 34) are introduced, which should not be confused with "Global Government" (Grober, 2010, pp. 218-220).

The Earth Summit was very productive, adopting six documents that were declared the most important areas of action in a global environmental and developmental policy (Schretzmann *et al.,* 2006, p. 71-72; Vogt, 2009, p. 119):

- Rio Declaration on Environment and Development (known as the Rio Declaration)
- Forest Principles
- Framework Convention on Climate Change
- Convention on Biological Diversity
- Convention to Combat Desertification
- Agenda 21.

An action plan and the final document of the conference, Agenda 21 set as an objective the adoption of those measures required for environmentally sustainable development, both locally and globally, to ensure viability for future generations. Agenda 21 makes more tangible the Rio Declaration, which consists

of 27 principles intended to guide future sustainable development around the world; for instance, it states in principle 4: "In order to achieve sustainable development, protection of the environment must constitute an integral part of the process of development and cannot be regarded in isolation" (BMU, 1992, p. 45).

In the 40 chapters of Agenda 21, tourism management is largely omitted, but this gap was closed in 1997 at the Rio+5 congress, where the Commission on Sustainable Development (CSD), which had been founded in 1993, was assigned the task of engaging in 'Sustainable Tourism' during its annual meetings. The result was the adoption of the Global Code of Ethics for Tourism (1999), which was created in cooperation with the UNWTO (World Tourism Organization), a specialized agency of the UN based in Madrid, Spain. The following definition was established: Sustainable tourism "satisfies criteria of social, cultural, ecological and economic sustainability. Sustainable tourism has a long-term focus, i.e. relating to today's and future generations, it is ethically and socially just, culturally appropriate, ecologically sustainable, as well as economically rational and productive" (Freericks *et al.,* 2010, p. 249). "Based on this definition a comprehensive action programme was devised that outlines aims, measures and relevant players. A year later, the topic of 'environmentally sustainable tourism' officially became an item on the agenda at the 7th CSD meeting" (Freericks *et al.,* 2010, p. 249).

"Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. No nation can achieve this on its own; but together we can—in a global partnership for sustainable development."

(Extract from the preamble to Agenda 21)

It can be noted that "Rio represents the worldwide recognition of a vision of sustainability that systematically links environmental protection and the fight against poverty as two interdependent elements and thus enables the transition from an end-of-pipe policy of remediation to an integral policy for the future" (Vogt, 2009, p. 119). The implementation of sustainability in politics was dealt with at the UN Conference on Sustainable Development (UNCSD), held in

Johannesburg in 1992. "It was not about new objectives but finance, precise deadlines and binding agreements to allow for implementation of the Rio resolutions" (Vogt, 2009, p. 120).

Here, a new concept concerning the implementation of sustainability was discussed called Public-Private-Partnership (PPP). This allows corporations to act as a contracting party of the state so that common environmental goals can be achieved according to the idea of "cooperation instead of control". This 'soft' instrument was subject to some criticism, however, and contributed to the outcomes of the conference in Johannesburg receiving little positive response. But Professor Vogt points out that: "Despite all the justified criticism, the role of the UN Conference on Sustainable Development in Johannesburg should not be underestimated: Due to its obvious contradiction between aspiration and reality it has become a public memorial to tasks left undone. "It prevented the complex documents of the Rio conference from disappearing from the agenda of world politics and serves, in spite of all the opposition, as a benchmark for eco-social responsibility" (Vogt, 2009, p. 121).

The 5th UN Conference on Sustainable Development, taking place in Rio de Janeiro from June 4 to 6, 2012, will have to deal with this issue of serving as a "memorial" and to ensure once more that the concept of sustainability has a permanent place on the political agenda. At Rio+20, the big Earth Summit of 1992 will be commemorated and current political matters will be discussed. At the centre of the debate will be issues like "Greening the economy" and "institutional reforms such as the further development of UNEP" (see www.uncsd2010.org and www.earthsummit2012.org).

Sustainable Development in Europe and Germany

The recognition of the importance of sustainability at a high level internationally has resulted in sustainable development becoming an ongoing mission in European Union (EU) politics (Diefenbacher *et al.,* 1997). The Lisbon strategy, developed in March 2000, has made sustainable development in the EU a strategic objective. At the Gothenburg Summit in June 2001, environmental aspects were added to the strategy entitled "Sustainable development in Europe for a better World: a European Union strategy for sustainable development" (Vitols, 2011, p. 23). The 27 EU states are committed to this strategy; they have to support the policy of sustainability and implement the environmental regulations of the various action plans.

In Germany, the Advisory Council on the Environment (SRU), established in 1971, carried out an in-depth analysis of the concept and effects of

sustainability in its environmental report published in 1994. It suggested its own translation of sustainability: "sustainable, environmentally compatible development" (Diefenbacher *et al.,* 1997, p. 44; Vogt, 2009, p. 125-126). The SRU's 1994 annual review states: "The Advisory Council on the Environment is hoping that the formula *sustainable, environmentally compatible development* will make the concept of sustainability the main focus in future environmental politics and also anchor it in the public's consciousness." And it continues: "The concept of sustainability has led to the insight that the areas of economic, social and environmental development are interdependent and cannot be analyzed independently or played off against each other. In order to secure humanity's development, these three components have to be regarded as a necessary unity that needs constant re-building" (SRU, 1994, p. 46). Based on these profound statements, it is clear that sustainability has become an enduring issue in Germany – a permanent feature of its political landscape.

The Study Commission of the German parliament has also made its contribution by publishing a total of three extensive reports on sustainability. It defines the English term 'sustainable development' as "sustainable, environmentally compatible development" and also states: "The principle of sustainable, environmentally compatible development is a concept that takes into equal account environmental problems generated primarily by past production patterns and lifestyles in industrialized countries and the needs of developing countries and future generations" (Deutscher Bundestag, 1994, p. 30). On an executive level of the Federal Government, the Council for Sustainable Development (RNE) has been active since April 2001 (www.nachhaltigkeitsrat.de). The RNE includes 15 individuals from the public sector; these are appointed by the German government for three years and focus intensively on topics related to sustainability or sustainable development in politics, the economy and society. Statements by and campaigns and events organized by RNE are highly regarded and enjoy wide acceptance among the general public.

In April 2002, a national sustainability strategy entitled "Perspectives for Germany. Our Strategy for Sustainable Development" was developed with the participation of the RNE. The aim was to issue "management guidelines" for acceptable conduct in politics and society. "The ten management rules of sustainability describe the demands on ecological, economic and socially balanced development. This includes, for instance, the participation of all players in sustainable development, sustainable production methods, the use of renewable resources, avoidance of dangers and unwarranted risks to human health as well as ecologically and socially acceptable structural change, low energy and resource consumption, sound public finances, sustainable agriculture

and social cooperation. (…) Each topic specified in the management rules was assigned targets and key indicators for monitoring progress" (Vitols, 2011, p. 8).

At present, the RNE is trying—in a wide-ranging dialog—to establish a German Sustainability Code (GSC) for all businesses in Germany. The GSC's effects and its applicability and practicability will initially be tested for one year to ensure successful (legal) implementation. Of particular interest is the concept of a "sustainability pledge" (Bachmann, 2010) that was negotiated with the umbrella organization Deutscher Naturschutzring, or DNR, which covers German nature conservation and environmental protection organizations. With the help of the RNE, the DNR aims to enrich the debate around guidelines, emphasize the importance of a "code for ecological sustainability", and strengthen commitment in sustainability matters. RNE Secretary-General Dr Gunther Bachmann stated: "Sustainability needs a strong guarantor. This guarantor must give direction to the concept and offer assurance that anything claiming to be sustainable is actually sustainable" (Bachmann, 2010, p. 6). The foundation for such a "sustainability pledge" is not only transparent and measurable criteria that may be used for a sustainability certification, but also a new approach in the public debate around sustainable development (keyword "pledge to society").

Parallel to this, and complementing the work done by the RNE, the German Commission for UNESCO is currently hosting the UN World Decade (2005-14) of "Education for Sustainable Development" in Germany, with great success (www.bne-portal.de). The goal is to broadly anchor the principles of sustainable development in the education system.

On a regional and municipal level, sustainability has become an important focus in the implementation of the Local Agenda 21 (Diefenbacher *et al.,* 1997), where detailed information on urban development is provided, demonstrated by the City of Heidelberg.

Sustainability seems to meet with wide approval in society, at least in theory. A reasonable number of associations and NGOs have 'discovered' the subject and made it their mission (cf. eg. www.nachhaltigkeit-ev.de; www.nachhaltigkeit.info; www.stratum-consult.de; www.stratum-consult.de). The term is very versatile and is used in ways that are at times very creative. The catchy slogan "sustainability is change", for instance, was created by stratum®, a consulting company that grew out of an environmental initiative (Haeusler *et al.,* 2009). Among the multitude of other initiatives is the LOHAS-movement (Lifestyle of Health and Sustainability), which has developed a philosophy of life based on health and sustainability (www.lohas.de; www.lohas.com).

Description and essence of sustainability

> *"Concepts without perceptions are empty,*
> *perceptions without concepts are blind."*
>
> Immanuel Kant

The first graphical displays of Sustainability developed one and two column models (Carnau, 2011). The focus was on the three goals of ecology, economy and social affairs (Figure 2). This "sustainability formula" (Vogt, 2009, p. 102) had a significant impact on the environmental debate in the '70s and '80s. "In theory, the principles of sustainability have been agreed upon in 1992, and effort has been made to implement them, but in actual fact hardly any progress has been made towards these objectives" (Vogt, 2009, p. 102). And Vogt continues:

> "The paratactic understanding of the three-pillar model that ecology, economy and social equity are equally weighted interrelated pillars threatens the guideline function of the principles defined. They are used to hide contradictions and differences instead of finding a consensus on core issues, goals and priorities. (…) Sustainability will remain a meaningful concept only where it continues to be an environmentally focused concept, and where a systematic integration of environmental issues into other sectors of politics, economy and society is achieved" (Vogt, 2009, p. 142).
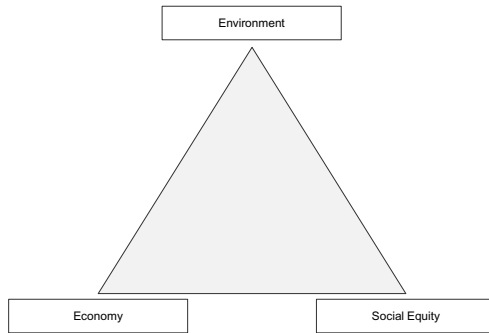

Figure 2:   The Triangle of Sustainability

The 'triangle of sustainability' was further developed into a 'magic triangle' (Deutscher Bundestag, 1994, p. 54) with the following dimensions: environmental dimension, economic dimension, and social dimension (Figure 3). It became the symbol of the German parliament's Study Commission entitled "protection of the human and the environment".
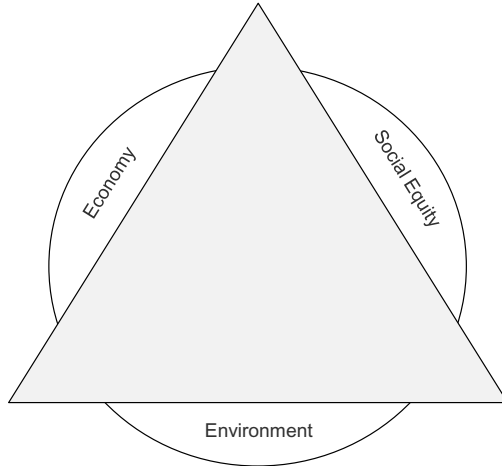

Figure 3:   Dimensions of Sustainability

"In the magic triangle of sustainable development, economic, social and environmental objectives face each other" (Deutscher Bundestag, 1994, p. 54).

This "three-dimensionality of sustainability" (Deutscher Bundestag, 1997, p. 170) served as a basis for the design of the commonly used "three-pillar model" (Fig. 4).
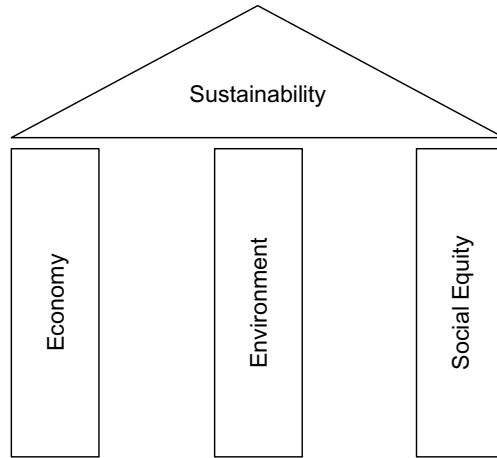
Figure 4:   Three-Pillar Model

Economy, environment, and social equity constitute the three pillars of sustainability and are of equal importance. In practice, interpreting sustainability is often difficult and arbitrary due to the conflicting objectives of the three pillars. Hence, emphasis has been put on those 'natural assets' (Deutscher Bundestag, 1994, p. 31) that led to the environment becoming more high-profile. Professor Vogt writes concerning this: "From an ethical viewpoint the concept of an 'equality' of environment, economy and social affairs—as the three-pillar model is often interpreted—does not make sense because we are dealing with completely different systems, issues and tasks that cannot be directly compared and valued". And he comes to a disappointing conclusion: "Therefore the well-established model of three pillars is rather irritating" (Vogt, 2009, p. 143).

In order to secure ecological efficiency and the natural production system it would be obvious to change the look of the 'environment' pillar because "allocation of resources and reception of waste in particular, are non-renewable services provided by nature, thus limiting the scope of human economic activities" (Deutscher Bundestag, 1994, p. 32).

Former Professor Volker Stahlmann succeeded in resolving the conflicting interests between environment, economy and social affairs by creating an 'edifice' of sustainability that reflects reality more accurately (Figure 5). "The environment is the foundation on which social, cultural and economic pillars are built. Sustainable development represents the roof of the building and is supported by this structure" (Stahlmann, 2008, p. 61).
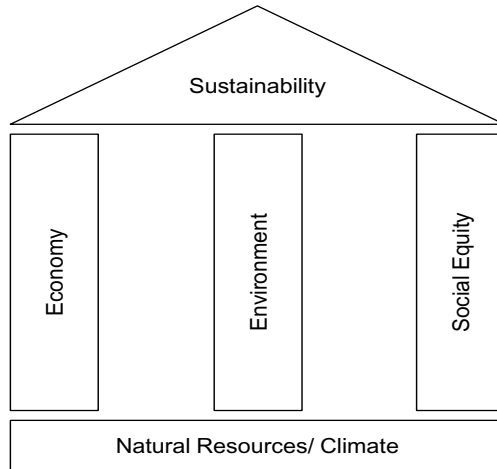
Figure 5:   Weighted Pillar Model of Sustainable Development (Stahlmann, 2008), adapted

This further development of the three-pillar model to a "weighted pillar model" gives a much clearer understanding of sustainability. It clarifies the foundation on which sustainable development is based, and how it is supported and safeguarded. That means economizing nature is the sole basis for our Economy (Grober, 2010).

Sector-specific additions to and definitions of the pillars are necessary and permissible. The area of CSR (Corporate Social Responsibility), for instance, asks for a fourth pillar to emphasize the "political and institutional dimension" and to reinforce "the significance of participation and integration" (Vitols, 2011, p. 19; Freericks *et al.,* 2010, p. 347-348). Integration of sustainability into the CSR process is specified by the new ISO-26000, introduced on November 1, 2010 (Bay, 2010; Hardtke and Kleinfeld, 2010).

Figure 6 depicts an example of sector-specific addition to the model which includes 'health'.
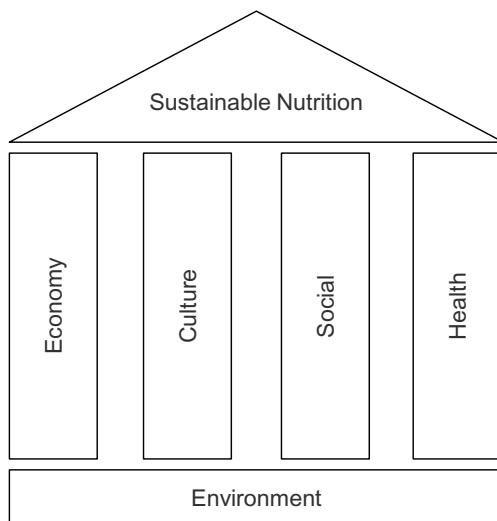

Figure 6:   Model of sustainable nutrition (Spindler, 2010, p. 24)

A similar model could be developed for tourism by replacing the "health" pillar with "recreation".
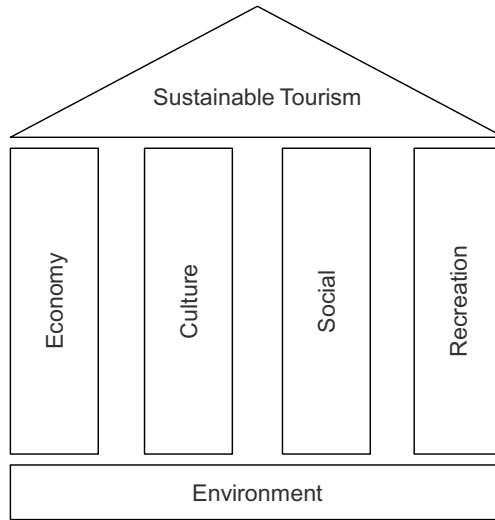
Figure 7:   Model of Sustainable Tourism

All models and concepts should include the following basic principles for sustainable development:

- **Intergenerational Justice**
  To satisfy the needs of today's generation without compromising the ability of future generations to meet their own needs.
- **Capacity for Regeneration**
  Not taking more from nature that it can regenerate in a natural ecological cycle.
- **Law of Succinctness**
  To use non-renewable resources only to the extent that an equal substitute in the form of renewable resources can be found or that resource productivity can be increased.

- ▪ **Reduction in Risk**
  To minimise potential environmental risks and ensure safety in the manufacturing process and with materials.
- ▪ **Absorption Capacity**
  To generate emissions only at a level that nature can cope with over time or that can be transformed into non-toxic substances.
- ▪ **Ecological-Economic Value Creation**
  To maintain and promote the ecological potential and biodiversity.

Meanwhile, these principles of efficiency, consistency and sufficiency have been implemented in many projects and activities. In order to clarify the contents of the sustainability concept and sustainable development, many models have been created that include indicators and targets. A good example of this is the "magic circles of sustainability" developed by the Applied Ecology Project of the Regional Office for Environmental Protection in Baden-Wuerttemberg (Diefenbacher, 1997, p. 71).
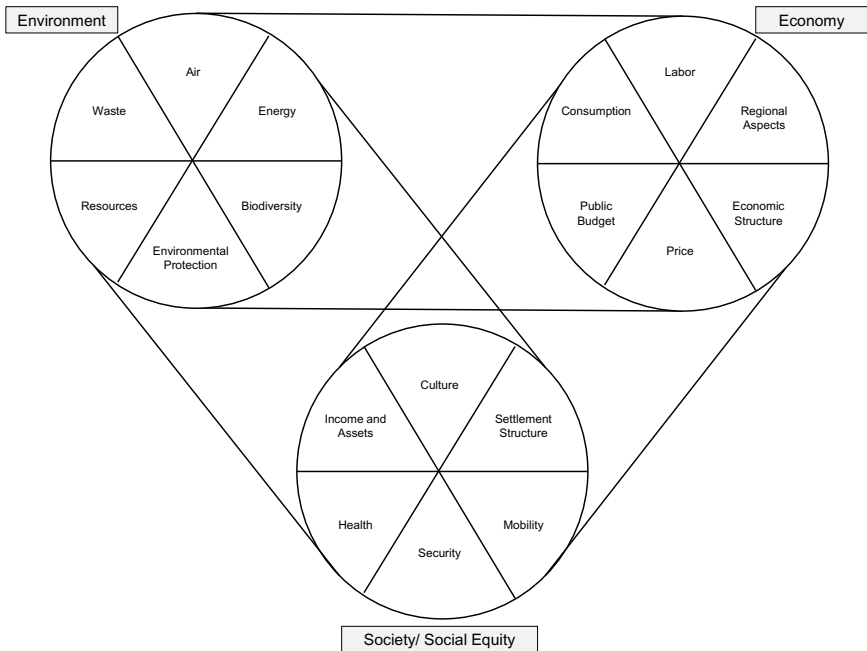

Figure 8:   Magic Circles of Sustainability (Diefenbacher, 1997), adapted

> "The term 'magic circles of sustainability' illustrates that environment, economy and society are interdependent; none of the areas can exist without the others. (…) Each of the magic circles is divided into six different sub-objectives" (Diefenbacher, 1997, p. 73).

The objectives are kept deliberately vague in order to facilitate concretisation by means of an indicator system.

> "We made a conscious decision not to provide any quantitative objectives. On the one hand, this is impossible given our current state of knowledge: we can attempt to indicate in which direction society should go in order to achieve the goal of sustainability —we cannot predict when exactly this might be the case. On the other hand, we are of the opinion that quantitative values for sub-objectives would limit the scope for development in society. It is of particular importance that the different sub-objectives lead to a discussion process involving all players in society about different environmental, economic and social developments in connection with sustainability" (Diefenbacher, 1997, p. 74).

This shows once again that the definition of sustainable development is an ongoing, fluid process. Sustainability is intricately linked to change – similar to a building site the management of which is challenging but ultimately leads to progress. It might be appealing to mention the *collapse* as an antonym of Sustainability (Grober, 2011a; Grober, 2011b). "Sustainability is not a fad" but a "megatrend" (Bachmann, 2010, p. 3). In other words: Sustainability concerns everybody. Everyone can understand sustainability. And everyone can live sustainability every day. It is about constant reflection on sustainability and internalizing it. Only this can lead to a "staged sustainability process", one that is a challenge for all of us. As a conclusion it can be stated: "The discovery of Sustainability continues" (Grober, 2010, p. 268).

Tourism and Sustainability

There is no doubt that tourism belongs to the "most progressive economic sectors" – those sectors with an economic interest in the conservation of ecological homeostasis and which are well placed to achieve "comprehensive ecologic modernisation" (Petermann, 1999, p. 241; Freericks *et al.,* 2010). Although nature is the decisive factor of production in tourism, rigorous sustainability schemes are lacking. And while there is a multitude of "practical approaches to environmental management" (Viegas, 1998 , p. 42 and (older) scientific papers on eco-management for tour operators e.g. Mezzasalma, 1994), few projects have had a specific impact on the concept of sustainability. Despite the many definitions of

sustainability (Reidel, 2010, p. 97) there is no authoritative standard definition of sustainable tourism. And the sector has to date failed to produce the kind of compelling graphics needed to illustrate the subject properly.

Petermann notes that "Tourism service providers' enlightened self-interest to generate income from nature may well be an incentive for environmental protection measures. However, this incentive is often too weak and there is a lack of continuity in the willingness to act" (1999, p. 243). Ultimately, the primacy of the (short-term) economy seems to prevail. But one has to realise that what is wrong ecologically cannot be reasonable economically. When it comes to defining the term, it is hoped that sustainable development would play an active part in the practical implementation of tourism policies and take a pioneering role in this field. Sustainability is an existential challenge for tourism. The main issue is to discuss and define targets as well as the processes needed to implement responsible structures. For instance, the tourism sector could help support and promote the recent emergence of "sustainability science" (Reidel, 2010, p. 24). It could lead by example by implementing the all-important precautionary principle and this could be helped by tourism risk management illustrating the impacts of tourism on destinations. Such a 'compass' (Vogt, 2010, p. 7) for *a tourism industry with a clear conscience* would be helpful.

In the field of environmental policy this path has already been taken with the proposal of a "Sectoral Reference Document for Tourism in Europe" (Final Draft, January 2011). This sector-specific reference model for tourism, created for the European Eco-Management and Audit Scheme EMAS (www.emas.de), could serve as a basis for further sustainable development activities and for defining more specific guidelines for sustainable tourism (see 'members-only' area of www.uga.de). There is also a requirement for effective sustainability management and for firmly defined criteria for sustainable tourism (see www.sustainabletourismcriteria.org). Otherwise "the much expected golden future of tourism remains unknown. (…) However, because tourism is dependent on an intact environment and sustainable growth like any other industry, there is a chance of finding means and ways to reconcile economy and environment in the age of globalisation" (Petermann, 1999, p. 251).

This optimistic view of the future can be maintained if tourism faces up to the universal question of sustainability and gives an honest answer to the public: *Always ask yourself what marks you have left in life.*

Perhaps the following quotation best describes the current debate around sustainable tourism:

"The tourist destroys what he seeks by finding it".
Hans Magnus Enzensberger (German author and poet)

References

Bachmann, G. (2010): *Verbürgte statt beliebige Nachhaltigkeit.* Unpublished manuscript.

Bay, K.-C. (Ed.) (2010), *ISO 26000 in der Praxis. Der Ratgeber zum Leitfaden für soziale Verantwortung und Nachhaltigkeit,* Munich, Oldenbourg Industrieverlag.

BMU, Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (1992), *Konferenz der Vereinten Nationen für Umwelt und Entwicklung im Juni 1992 in Rio de Janeiro*, Bonn, BMU.

Carnau, P. (2011), *Nachhaltigkeitsethik. Normativer Gestaltungsansatz für eine global zukunftfähige Entwicklung in Theorie und Praxis, Rainer Hamp Verlag*, München.

Carson, R. (1962), *Der stumme Frühling,* Beck, München.

Chasek, P. S. *et al.,* (2006), *Handbuch Globale Umweltpolitik*, Partgas Verlag, Berlin.

Deutscher Bundestag (1994), *Die Industriegesellschaft gestalten. Perspektiven für einen nachhaltigen Umgang mit Stoff- und Materialströmen. Bericht der Enquete-Kommission "Schutz des Menschen und der Umwelt – Bewertungskriterien und Perspektiven für Umweltverträgliche Stoffkreisläufe in der Industriegesellschaft" des 12. Deutschen Bundestages,* Economica Verlag, Bonn.

Deutscher Bundestag (1997), *Konzept Nachhaltigkeit. Fundamente für die Gesellschaft von morgen. Zwischenbericht der Enquete-Kommission "Schutz des Menschen und der Umwelt – Ziele und Rahmenbedingungen einer nachhaltig zukunftsverträglichen Entwicklung" des 13. Deutschen Bundestages,* Deutscher Bundestag, Bonn.

Deutscher Bundestag (1998), *Konzept Nachhaltigkeit. Vom Leitbild zur Umsetzung. Abschlussbericht der Enquete-Kommission "Schutz des Menschen und der Umwelt – Ziele und Rahmenbedingungen einer nachhaltig zukunftsverträglichen Entwicklung" des 13. Deutschen Bundestages,* Deutscher Bundestag, Bonn.

Freericks, R. *et al.,* (2010), *Freizeitwissenschaft. Handbuch für Pädagogik, Management und nachhaltige Entwicklung,* Oldenbourg Wissenschaftsverlag, München.

Grober, U. (2010), *Die Entdeckung der Nachhaltigkeit. Kulturgeschichte eines Begriffs*, Verlag Antje Kunstmann, München.

Grober, Ulrich (2011a): „Zauberwort Nachhaltigkeit – warum wir sorgsam damit umgehen sollten.", in *UNESCO heute*, No. 2/2011, pp. 14-16.

Grober, Ulrich (2011b): „Welches Wachstum wollen wir?", in *PSYCHOLOGIE HEUTE*, June 2011, pp. 60-64.

de Haan, G. (Ed.) (2007), *Studium und Forschung zur Nachhaltigkeit,* W. Bertelsmann Verlag, Bielefeld.

Häusler, R. *et al.,* (2009), *Nachhaltigkeit ist Veränderung. Initiativen zum Umweltschutz*, Erich Schmidt Verlag, Berlin.

Hardtke, A., and Kleinfeld, A. (Eds.) (2010), *Gesellschaftliche Verantwortung von Unternehmen. Von der Idee der Corporate Social Responsibility zur erfolgreichen Umsetzung* Gabler, Wiesbaden.

von Hauff, M. (2010), *Öko-Audit. Vom Umwelt- zum Nachhaltigkeitsmanagement,* Verlag Wissenschaft & Praxis Dr. Brauner, Sternenfelde.

Hollmann-Peters, I. (2011), "Innovationstreiber Nachhaltigkeit", *face to face, April 2011,* Mitarbeitermagazin von Beiersdorf, pp. 18-19.

Kless, C. (2010), "*Bildung für Nachhaltige Entwicklung. Deutsche Hochschul-bildungsangebote für Nachhaltige Entwicklung im Tourismus, eine Analyse*". Masterarbeit an der Hochschule für nachhalte Entwicklung Eberswalde (FH).

Kreibich, R. (2011), "Das Jahrhundert der nachhaltigen Entwicklung. Integriertes Roadmapping and Sustainable Value als Methoden zur Durchsetzung nachhaltiger Innovationen", in BAUM (Ed.) *Ressourcenmanagement,* B.A.U.M. Jahrbuch 2011, ALTOP Verlag, Munich, pp. 44-47.

Reidel, J. (2010), *Erfolgreich oder ruinös? Transnationale Unternehmen und nachhaltige Entwicklung – kritische Reflexion aus menschenrechtlicher Perspektive,* oekom Verlag, München.

Schreiber, R. L. (2004), *Neue Wege im Naturschutz. Wie muss Nachhaltigkeit kommuniziert werden?*, available at: www.ask-eu.de (accessed 12 April 2011).

Schretzmann, R. *(2011), Nachhaltigkeit – eine deutsche Spezialität!? Das Internationale Jahr der Wälder 2011,* aid-PresseInfo, 9 March 2011.

Schretzmann, R. *et al.,* (2006), *Wald mit Zukunft. Nachhaltige Forstwirtschaft in Deutschland,* aid-Heft 1478/2006, Bonn.

Spindler, Ines (2010), *Verpflegungskonzept für Schulbauernhöfe orientiert am Leitbild der Nachhaltigkeit*, Bachelorarbeit an der Fachhochschule Osnabrück, Studiengang Ökotrophologie, Osnabrück.

SRU, Der Rat von Sachverständigen für Umweltfragen (1994), *Umweltgutachten 1994. Für eine dauerhaft-umweltgerechte Entwicklung,* Verlag Metzler-Poeschel, Stuttgart.

Stahlmann, V. (2008), *Lernziel: Ökonomie der Nachhaltigkeit. Eine anwendungsorientierte Übersicht,* oekom Verlag München.

Vitols, K. (2011), *Nachhaltigkeit – Unternehmensverantwortung – Mitbestimmung. Ein Literaturbericht zur Debatte über CSR,* edition sigma, Berlin.

Vogt, M (2009), *Prinzip Nachhaltigkeit. Ein Entwurf aus theologisch-ethischer Perspektive,* oekom Verlag, München.

Vogt, M. (2010*), Maßstäbe einer nachhaltigen Unternehmensführung aus der Sicht christlicher Sozialethik und Wirtschaftsanthropologie,* paper presented at the "Erstes Deutsches Eliteforum zur Nachhaltigkeit der LMU München" on 28th October (manuscript).

v. Weizsäcker, E. U. (1992), *Erdpolitik. Ökologische Realpolitik an der Schwelle zum Jahrhundert der Umwelt,* Wissenschaftliche Buchgesellschaft, Darmstadt.