

## SUSTAINABILITY - SIX DIMENSIONS OF A HOLISTIC PRINCIPLE

*Dirk Oesselman\**

*Ulrich Pfeifer-Schaupp\*\**

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### ABSTRACT

Since the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro, 1992, sustainability has become a key concept for the political and academic discussion of a common vision for the future development of a world-society. The authors of the following article focus on sustainability as a holistic principle in six different dimensions: ecological as the base of the system of all living beings, economic, political, social and pedagogic as areas of human acting, and a spiritual-ethical dimension as a fundamental attitude. The fundamental insights are based on the Earth Charter, which was elaborated with contributions from Paulo Freire (2000, p. 66–67) and Moacir Gadotti (2010, p.13–27).

The article was written in a German academic context and aims to inspire interdisciplinary discussion from an international perspective.

### INTRODUCTION

**“What I dig out of you, o Earth, let it grow again quickly. Let me, o Purifier, neither cut through your vital nerve nor pierce your heart.”**  
(GROBER, 2010, p. 234; translation Rosemarie Oesselmann)

The above quote represents one of the oldest definitions of the principle that, today, we call “sustainability”. It originates from the Atharva Veda, a Hindu text from India that is approximately 3,000 years old. Indira Gandhi, the Indian Prime Minister, concluded her brilliant and widely noted address at the **United Nations Conference on the Human Environment** in Stockholm in 1972 with this quotation. “One Earth” was the motto of this conference, which may be regarded as the beginning of the history of sustainability.

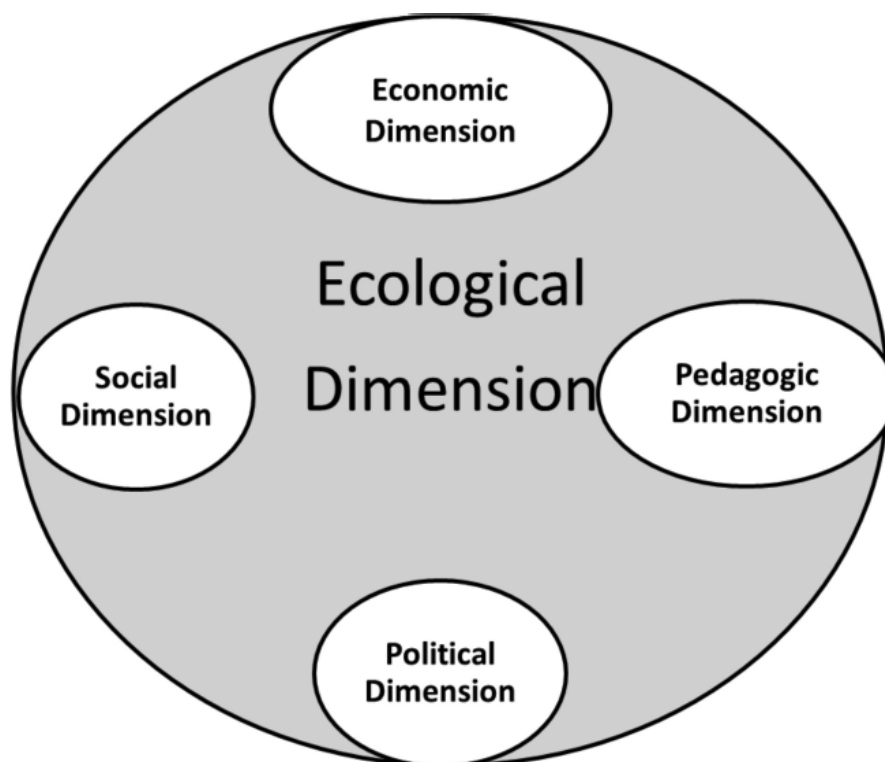
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\* Professor at the Protestant University of Applied Sciences Freiburg - EH Freiburg, Germany. PhD in Education Sciences by Leibniz-Universität Hannover, Germany. Master Science in Social Sciences of Religion by the Methodist University of São Paulo. E-Mail: [oesselmann@eh-freiburg.de](mailto:oesselmann@eh-freiburg.de)

\*\*PhD Professor at the Protestant University of Applied Sciences Freiburg, Germany. Currently at the Faculty of Social Work Science. Main Research fields: Sustainability, Mindfulness, Buddhist Psychology, Family and Systems Therapy. Email: [pfeifer-schaupp@web.de](mailto:pfeifer-schaupp@web.de)

In this paper, we try to explicate the term “sustainability” via six closely connected dimensions that reflect the term from different angles. These dimensions are not equally important, but differ in their position and significance, as is shown in the model. The ecological dimension is the basis for all life, and therefore the reference for the principle of “sustainability”. The spiritual-ethical dimension indicates that all human activities rest on a system of meanings and values that determines, on the basis of principles and ideals, the structuring of life. The relevance of each principle mainly depends upon its place here. Enclosed in these encompassing principles are the economic, political, social and pedagogic dimensions that shape communal life.



## **SUSTAINABILITY – AN OLD PROBLEM, A CONSTANT COMMITMENT**

The verb “sustain” is derived from the Latin “sustenare”, which means “to maintain, carry, support, protect” (GROBER, 2010, p.18f.). This notion points to a responsible way of life, which is achieved when present activities and the economy aim to support and maintain the chances for future life.

The Brundtland Report, submitted to the United Nations by the World Commission for Environment and Development in 1987, offers a conception of “sustainable development” that is still valid today: Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits - not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities<sup>1</sup>.

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<sup>1</sup> <http://www.un-documents.net/ocf-ov.htm#I> – Chapter 3, 27.

Moreover, we consider sustainability to be a fundamental principle of perception, understanding and structuring of life, which encompasses the various social dimensions and necessitates conscious shaping of the individual means of existence. Thus, challenges not only concern technological development and political-social responsibility, but all human activities that express themselves in values and ideas of happiness and contentment.

## **“DEVELOPMENT” – A PARADIGM PUT TO THE TEST**

For a long time, the term “development” meant that humans, in order to be free, could and must develop more and more effective instruments to dominate nature and thus control their environment. In this sense, development today is interpreted as economic growth. However, it is obvious that unlimited growth can relate to neither humanity as a whole, nor to the future.

The necessity for transformation rests on how humans deal with the world and with themselves. The following aspects are in need of a new way of thinking:

- Acknowledgement of limits: Preconditions and perspectives of development cannot involve unlimited growth and unlimited progress – man, as well as the natural environment, only have access to limited resources.
- How to deal with power: Sustainability necessitates a responsible and critical handling of the options related to taking action. Instead of unlimited growth, the aim in shaping a world society can only be to allow life in complex contexts.
- “Global governance”: Worldwide problems can only be solved by institutions that are able to enforce the necessary steps by which to guarantee the preservation of life for all humanity. World politics must rest on ethical principles, and not on economic and political interests.
- Coherence of local and global aims and interests: Global platforms and institutions must not neglect regional and local requirements, interests, characters and perspectives. A respectful dialogue with diversity and multiple perspectives may become key for responsibly shaping the world (see KULTUSMINISTERKONFERENZ 2007, p. 21–27).

Such are the requirements for responsible engagement, in light of the six dimensions of sustainability.

## **THE ECOLOGICAL DIMENSION – THE ESSENTIAL FRAME OF REFERENCE**

Human survival on our planet is exposed to multiple ecological threats. Even in 1972, the authors of the report to the Club of Rome clearly recognised that the “limits to growth” had been reached. They demonstrated this using a simple mathematical model: In a system with limited resources, unlimited growth is impossible.

In antique Greece, **oikos** referred to the common household, which comprised not only the family but also servants, slaves, cattle, equipment and land. The term “ecology” is derived from **oikos** (the house), and **logos** (lesson) – which together make lesson regarding the sensible management of the household.

The modern meaning of ecology relates to the science of the relation of living creatures with their environment. This science, which developed at the beginning of the 20th century, was originally part of biology and is a root of modern systems theories. In his **General Systems Theory**, Ludwig von Bertalanffy formulated two important principles for living systems: (1) They exist in a flowing

balance by adapting to influences from the environment or the dynamics of environmental subsystems; (2) If the influences become too strong, the whole system may “tip over”. This is called the “tipping point”, or bifurcation (cited in KRIZ 1999, p. 57, 74).

Climate change has long been an issue, and threats to the system of life have always been significant. However, actually these changes originate from one specie – the human being - and are becoming more rapid.

But focusing on such negative developments alone may be unhelpful, since it serves to increase the feeling of despair and hopelessness. Therefore, it is also important to remember the many successful changes in the field of environmental protection over the past 30 years. As Ernst Ulrich von Weizsäcker states in his publication **Faktor 5**, referring to the success of public politics programmes:

*After only 25 years, the mountains of foam on the rivers had disappeared and the overcrowded industrial areas – such as the Ruhr area, Osaka in Japan or Pittsburgh in the USA – had become cleaner than they had ever been during the past 100 years. This success story surprised many sceptics who had seen the source of the problem in economic growth as such.* (VON WEIZSÄCKER et al. 2010, p. 16; translation Rosemarie Oesselmann)

## STRONG AND WEAK SUSTAINABILITY

Bertalanffy’s Systems Theory shows the fundamental importance of a functioning **oikos**: Ecological survival is a precondition of economic and social development, and therefore of the utmost importance (OTT & DÖRING, 2007). In academic discussion, this approach that the ecology is the fundament of all other dimensions is called “strong sustainability”, whilst the political discussion in Germany, based on the Three Pillars Model, argues that ecological, economic and social concerns are of equal importance. This so-called “weak sustainability”, however, is considered unsuitable by many scientists (MUTLAK & SCHWARZE, 2007; BARKMANN, 2007; PAECH & PFRIEM 2007; OTT & DÖRING, 2007).

The ecological dimension is the basis and precondition for the other five dimensions of sustainability. Without an ecological system in which long-term human life is possible, the other dimensions are irrelevant. In such a case, there could be neither economic nor political activity, and no functioning social system. Therefore, we are not concerned with the position of ecology in relation to sustainability, but with “deep ecology” (MACY & YOUNG BROWN, 2004; DRENGSON 1999): an ecology in which **“wisdom, that is to say the knowledge about ethics, norms, values and behaviour, is brought into a new relationship with the scientific principle of ecology”** (GOTTWALD & KLEPSCH 1995, p. 17; translation Rosemarie Oesselmann). We express this via the spiritual-ethical dimension of sustainability, which to date has received little attention in the academic discourse.

## THE SPIRITUAL-ETHICAL DIMENSION

Sustainability points to a responsible approach to the earth and fellow human beings as a basic paradigm of a meaningful life. The history of religions and cultures shows that a responsible approach is already contained in the Christian history of creation, in the Buddhist tradition, and in the knowledge of indigenous natural religions. (see FOX, 1998 and HANH, 2009)

Sustainability needs a spiritual foundation, a basic understanding of mankind and world. It cannot be explained or implemented by rational argument alone. It is the principle of life that surpasses political correctness. The point is to show respect for life in all its continuity, diversity, fragility and dependence.

However, although sustainability is essential, it must not be used as a moral pointer. The self-awareness of humans as part of a whole creates positive feelings of happiness and fulfilment. Moreover, while on the one hand sustainability releases the individual from the demand of having to prove himself over and over again, on the other he is delegated to be a responsible member of that whole.

Connected to this is the realisation of his own human condition as a limited, incomplete, yet at the same time self-contained being. Particularly important are communications and assertions about how to act adequately and jointly from an awareness of the responsibility for a comprehensive life system. The aim cannot be to create moral pressure, but should rather be to keep alive existential insights into the interconnectedness of being.

## THE ECONOMIC DIMENSION

The historical roots of the modern ecological-political principle of sustainability are to be found in economy. In the mainstream neo-classical or neo-liberal economy, “nature” is simply another resource, like work or capital, and it is tacitly assumed that this “natural capital” cannot be exhausted, or at least cannot be substituted monetarily (ROGALL, 2010).

In the meantime, however, a change from a neo-classical or neo-liberal economy to an economy of sustainability can be observed. In his book **Small is Beautiful**, Ernst Friedrich Schumacher criticises the “religion of economic science” (2001, p. 40) and stresses the necessity for a meta-economic science (p. 41). With his plea for non-economic values, such as “tender loving care” (p. 41) as a foundation and requirement of the economy, he formulates a basic principle of a sustainable economy: The aim must be for an “economy of continuity” (p. 31).

In the meantime, “economies of sustainability” have gained influence worldwide. Rogall refers to two basic differences between an economy of sustainability and the neo-classical economy (2010):

- Instead of the one-sided idea of man as **homo economicus**, man as **homo cooperativus** should be the aim.
- The principle of the free-market economy should be changed into an ecological-social order.

The Global Marshall Plan Initiative is an example of the growing importance of the “Green Economy” in the present economic-political reality. The initiative aims to establish a global ecological-social regulation framework of markets in terms of Global Governance. The World Trade Organisation/ WTO, the International Monetary Fund/ IMF, the World Bank, the UN Environment Program and the United Nations Educational, Scientific and Cultural Organization/ UNESCO are intended to be the agents of this procedure. This implies a need for the fundamental re-orientation and re-organisation of these institutions, which so far have been considered the principal agents of neo-liberal strategy (STIGLITZ, 2002; PFEIFER-SCHAUPP, 2005).

However, this and other models of the Green Economy pose several problems. Above all, it has been criticised for failing to challenge the ideology of growth. Other economic approaches

include the Post Growth Economy (PAECH, 2009; PAECH & PFRIEM, 2007) and Steady State Economy (DALY, 2009), which conceive economic activities that extend beyond conformity with a yearly increase in the gross national product.

Another important approach towards a sustainable economy is the development of indicators for economic development and prosperity that surpass the purely monetary dimension of the gross national product. The Capability Approach proposed by Amartya Sen is an important impetus. In his **Economy for Mankind**, development is not measured in terms of an increase in the gross national product per head of the population, but rather by its contribution to the increase of freedom. *“Development demands that the main causes of bondage are removed: poverty as well as despotism, lack of economic chances as well as systematic social emergency, the neglect of public institutions as well as the intolerance of the suffocating control of dictatorial structures.”* (SEN, 2002, p. 13; translation Rosemarie Oesselmann)

The Human Development Index proposed by the UN, or the widely cited Gross National Happiness Index from Bhutan are examples of development indicators that focus on the wellbeing of the people. The simple motto “Live well instead of have much” proposed by the Wuppertal Institute has put this into a nutshell. However, “economy” is not an abstract term – all of us constitute it (ROMHARDT, 2009). This means that important aspects of the economic dimension of sustainability also include: how and what we consume, where we invest money or take out insurance, and so on. The development of a way of life of sufficiency and frugality may be regarded as an important element of basic change (OTT & DÖRING, 2007).

## THE POLITICAL DIMENSION

A global regulation framework for the supplementation of international socio-ecological standards, such as the Global Marshall Plan demands, already marks a transition from the economic to the political dimension of sustainability.

Four further exemplary approaches will show the levels at which the political dimension of sustainability is relevant.

1. The Earth Chart – the level of agreement under international law
  2. Global Governance – the level of global control
  3. The ecological fiscal reform – the level of Europe or nation states
  4. Local Agenda 21 – the communal and regional level
- (1) After a long period of preparation, the Earth Charter Commission approved the Earth Charter document in March 2000 at a meeting held at UNESCO headquarters in Paris and – at the Summit Conference for Sustainable Development in Johannesburg in 2002 – made the foundation for a program by the United Nations and UNESCO, which aimed to deal with the implementation of sustainability. The preamble states:

*We stand at a critical moment in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded*



*on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations.*<sup>2</sup>

Using remarkably “spiritual” language, this political declaration shows that the ethical-spiritual dimension of sustainability becomes increasingly important even in political discourse, and that the ethical-spiritual and political dimensions interlock.

- (2) The Global Governance Initiative (DEUTSCHER BUNDESTAG, 2002, p. 415ff.) tries to find ways of regulating home affairs and of cooperating in matters related to the political formation of globalisation. The objectives are global political policies of structuring and arranging in the process of interactive adjustments. Included in this process will be trusts, Non-Governmental Organisations/ NGOs, actors on the global financial markets, as well as mass media. Global Governance aims for economic, social and ecological sustainability. The principles of good government via Global Governance are not intended to prepare for a world government, but, on the contrary, to facilitate a de-centralised, subsidiary federal system.
- (3) At the level of the nation state, the ecological fiscal reform is an important means for the realisation of sustainability (VON WEIZSÄCKER et al. 2010). Taxes on the desirable have an undesirable effect: If taxes are increased on labour, labour becomes more expensive and this will result in rationing. Conversely, taxes on the undesirable have a desirable effect: Taxes increased on the consumption of resources will result in the reduction of such consumption (p. 315). The basic idea is to raise the prices for energy yearly in order to increase the production of energy.
- (4) At the first World Conference in Rio 1992, a program of the local Agenda 21 – part of the international Agenda 21 – was initiated. The aim was to design sustainable towns and local communities, and encourage social participation and ecological-social communal initiatives. In this way, local authorities will become motors of sustainable development and advance the process of sustainability from the bottom up (JÖRGENSEN, 2008).

Like the economic dimension, the political dimension of sustainability promotes the insight that “politics” are not (only) a matter of “those at the top”, but also concern each one of us, and that even by doing nothing we are acting politically.

### **The social dimension**

When, in the 1970s and 1980s, ecological movements started on a larger scale, the fact that environmental protection necessarily has a social component was not clear to everyone. At that time, the aim was to protect the environment from violation by man; in other words, from the excessive acquisition of resources for selfish purposes. Only during recent decades did it become clear that the scarcity of resources, as well as the outcomes of climate change, have extreme consequences for the

<sup>2</sup> <http://www.earthcharterinaction.org/content/pages/Read-the-Charter.html>

social balance, locally as well as globally. Conversely, political and social groups realised that social development must allow for the sustainable use of natural resources.

At present – in view of the existing conflict of goals – the global tension in the relation between ecology and social justice is becoming more and more obvious. In many countries, particularly in the disadvantaged global south, possibilities for development – and thus also the maintenance of social security systems – are in competition with the necessary provisions for the protection of the ecological balance. Furthermore, climate change and the ruthless exploitation of nature are showing more and more clearly the negative consequences of the production of vital goods – particularly for those who are not responsible (see KULTUSMINISTERKONFERENZ, 2007, p. 19f.).

Sustainable social policy relates common welfare to the primacy of the ecological system. The principle of rendering possible future life necessarily entails both components: on one hand, a socially balanced arrangement to ascertain the basic needs, rights and chances for all people and, on the other hand, the required ecological balance.

The balance between the local and global levels is a central challenge. Common welfare is important for all forms of social life – though in practice it is mostly applied to the individual social group: family, clan, community or nation. It is based on the desire to ascertain social balance within the group and its survival in a larger context. The history of mankind shows that this mostly happens by differentiation and in competition with other social groups, for instance by territorial occupation or by defending acquired social positions. Common welfare is a central task in the face of a developing global society and the connected relations and problems. It must be realised that the various groups must not act against each other, but need to strive to create a common basis of life for everyone. Social justice and common welfare must be recognised as a task for all mankind – development can only be achieved in a global context.

This cannot be achieved by political governance alone, but depends upon how the global common welfare is recognised by nations, cultures and religions and made into a moral foundation. Furthermore, it will depend on how the different groups can develop and ascertain their own welfare without denying others the same rights, and without endangering the entire ecological context.

Altogether, such changes in the shaping of society will depend upon the broad participation of all people. This participation includes a) social participation and b) communicative participation. Social participation is based on the vision that all people are involved in the shaping of society, insofar as they have a right to satisfy their basic needs, take part in decisions and, finally, be actively involved in all aspects of constructing society. Communicative participation refers to the importance of the manner in which the various actors communicate. An open discussion of multiple perspectives allows for a perception of different interests and needs.

### **The pedagogic dimension**

Discussions on education centre around the goals of human development. Education is and always has been an expression of the spirit of time and its projection into the future. It mirrors the understanding of basic knowledge, as well as the necessary changes.

At the end of the 20th century, UNESCO appointed a commission to set up a basic concept for



“future education” for a new millennium. These considerations provided crucial impetus for a changed understanding of education. The deepening of professional knowledge – and thus a professionally fragmented world outlook – was no longer in the foreground, but was completed by a holistic approach to the reality of life. This is the precondition for two basic aspects of future education: a) inclusion into a complex coherent world outlook and b) a link to ethical principles.

The Decade for Sustainable Development of Education, which was initiated by UNESCO for the period 2006–2015, aims to introduce a changed understanding of how to deal with the environment in the various formal areas of education. In this context, particular stress is put on the content and a new conceptual orientation of education in schools and universities. However, in view of the present arguments and conflicts this initiative is not enough. The aim must be for the fundamentally different economic, political and social development of society. This must result from a broad movement that a) turns the voices and needs of the population into a political lobby that cannot be ignored, b) improves other economic models at the regional and international levels and introduces them to growing groups of the population, and c) discusses global visions of living together, and analyses these with regard to their implementation. Education must accept all these challenges.

Edgar Morin, a member of the UNESCO commission, considers that learning about one’s identity on earth is the foundation for future education:

“We must also learn to exist on the planet Earth, to live there, to communicate; not only belong to a certain culture, but be an inhabitant of the earth [...] We must realise for ourselves:

- the anthropological awareness which recognises our unity within our differences,
- the ecological consciousness [...] to live together with all mortal beings in the same biosphere,
- the consciousness of being an inhabitant of this earth, that means responsibility and solidarity for all other beings on earth,
- the spiritual consciousness of the human condition [...]” (MORIN, 2001, p. 93; translation Rosemarie Oesselmann)

## CONCLUSION

Sustainability initiates fundamental thoughts about orientation and designs for living. It disputes questions that penetrate religious beliefs and cultural accomplishments. The drastic changes and multiple crises during recent decades have made it necessary to shape a means by which to live together on a global scale under the principle of sustainability. This reform concerns all areas of life, and sciences in particular have to submit to this central challenge.

Sustainability is not a technical term but a very old principle of life, and as such meaningful and necessary. In spite of theoretical controversies, there is sufficient agreement for starting to work as the Earth Charter movement shows.

Sustainability demands not only a fundamental change in the conception of values, but also a new image of the world and mankind, which overcomes modernism, as well as returning to the fundamental insights of life. The spiritual-ethical dimension has received little attention in the academic discourse, but it is indispensable all the same.

In Germany, the universities of applied sciences are centres of research in this area, and largely

focus on the search for technological solutions to environment problems. Accordingly, the perspective of research is narrow. In interdisciplinary research – particularly within universities – the subject of sustainability is still “underexposed” (SCHNEIDEWIND, 2009). Above all, the socio-scientific aspects need more attention.

A special challenge relates to the correlation between knowledge and action, which points to the ability to concentrate on basic and far-reaching perspectives of life, as well as letting these flow back to everyday matters. At this level, the emotional and self-reflective dimensions must be considered as well.

We hope that this article will instigate multifaceted impulses for further thinking on sustainability issues.

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