

The policy context of the sustainability discourse

Karl Bruckmeier

Seminar

South Bohemian University, Economic Faculty,

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The topics

Analysis of sustainability policy and governance - four key themes:

1. Genesis of the political and public sustainability discourse and its knowledge bases
2. Sustainable development in the Brundtland report – messages, problem formulations, deficits
3. Sustainability in national and international policy processes (after the Brundtland report)
4. Relevance of economics in the broader sustainability discourse

Four global reports: prospects of future development and economic growth

- 1. Club of Rome-report "Limits to growth" (1972):** economic growth is connected with population growth, growth of natural resource use and environmental pollution; growth processes have become exponential, exceeding the global limits of finite natural resources and can result in a global economic and ecological collapse towards the end of the 21st century
- 2. Dag Hammarskjöld-report "What now?" (1975):** global development and economic growth are, in spite of international cooperation, not supporting the welfare and wellbeing of all humans; sharing and redistribution of resources will be necessary in future - limiting economic growth and creating fairness in resource use
- 3. Brandt- report "Securing the Survival" (1980):** global environmental problems mainly caused by the growth of industrial economies, but also from global population growth; growth threatens the wellbeing and survival of future generations; global cooperation is necessary to manage the atmosphere and other global commons and to prevent irreversible ecological damage
- 4. Brundtland-report "Our Common Future" (1987):** sustainable development creates a common future for humankind – further economic growth is necessary, but maintaining functions/services of ecosystems; sustainable development as progressive transformation of the global economy and society

Report “Our Common Future” (North-South Commission of the UN, 1987)

SD: **“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”** (the definition always cited – the more operational one, see below, hardly)

A new global policy agenda under the term of sustainable development that was in the years after the UNCED-conference (Rio de Janeiro 1992) established as policy worldwide, at national and international levels, with the “Agenda 21”

The report described the global social, economic, environmental problems and their interdependence in the nexus between development and environment, but **did not develop realistic suggestions and strategies to achieve a global sustainable economy and society** (the aim of intra- and intergenerational solidarity in natural resource use and distribution) – therefore:

The sustainability process cannot continue with the knowledge, insufficient and inconsequent suggestions of the Brundtland report - needs to be modified and renewed with new knowledge, experience and learning from earlier failures

Difficulties in the sustainability process

Unsolved problems: economic growth and its negative environmental consequences, unequal growth and asymmetric power relations in the global economy and society - after three decades of sustainability policies hardly changed

Contradicting economic knowledge about the necessity and consequences of economic growth - lack of experience and practical knowledge about new forms of sustainable growth, de-growth, transformation of the economy

Unclear: how to build multi-scale global policies with more complex knowledge practices, in the “triple helix” of science, politics and civil society, dealing with diminishing support for sustainability governance

Worsening global situation with continuing global environmental change, and reaching global limits to growth (Millennium Ecosystem Assessment from 2005, further global assessments): supported a new scientific and political debate about the preconditions, forms and temporal perspectives of transition to sustainability with the term “transformation” (social-ecological transformation or “another great transformation”)

Difficulties - integration of knowledge and coordination

The complex global problems addressed in the sustainability discourse cannot be solved through specialised research and short-term political programmes: required are **long-term processes of integrated research and coordinated action to change the global economic resource use to stay within the limits of resources provided by ecosystems** and to achieve more equal distribution of resources in terms of intra- and intergenerational solidarity (an ecological indicator is the fair earth share: Worldwatch Institute 2013)

Different interpretations of the economic North-South divide that evoked the political sustainability discourse - controversially discussed:

Is the divide a temporary phenomenon, showing the delayed development of the Global South, ending when all countries are modernised and industrialised (sometimes seen as “the end of history”)?

Or is this divide permanent, rooted in the incoherent structures and institutions of the modern economic world system, representing a global division of labour and power in the system which requires its transformation?

The knowledge problems are already visible in the Brundtland report: no clear answers how to deal with the complex problems diagnosed

1. Connecting economy and ecology: the global economy and ecology are locked together in new ways – **accelerating economic and ecological interdependence among nations**; sustainable development is an attempt to focus on the connections between economic growth and protection of the environment (United Nations 1987: 12, point 15)

2. Beyond economic growth: “it is not enough to broaden the range of economic variables taken into account. **Sustainability requires views of human needs and well-being that incorporate such non-economic variables as education and health enjoyed for their own sake, clean air and water, and the protection of natural beauty.** It must also work to remove disabilities from disadvantaged groups, many of whom live in ecologically vulnerable areas” (United Nations 1987: 43, point 39)

3. Common interests of humankind: the common interests of humankind, survival and wellbeing require to find compromises between interests of the industrialised and developing countries - sustainable development is not a fixed state of harmony, **rather a process of change in which exploitation of resources, directions of investment, technological development and institutional change are made consistent with regard to present and future needs** (United Nations 1987: 15, point 30): *this can be seen as an operational definition of sustainable development*

4. Long-term development - transformation of global economy and society: "development involves a progressive transformation of economy and society" (United Nations 1987: 37, point 3), referring to the problematic consequences of continuing economic growth driven by ambivalent technological innovations: "Emerging technologies offer the promise of higher productivity, increased efficiency, and decreased pollution, but many bring risks of new toxic chemicals and wastes and of major accidents of a type and scale beyond present coping mechanisms" (United Nations 1987: 19, point 69)

5. Sustainable development requires a series of system changes:

“a **political system** that secures effective citizen participation in decision making”; “an **economic system** that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis”; “a **social system** that provides for solutions for the tensions arising from disharmonious development”; “a **production system** that respects the obligation to preserve the ecological base for development”; “a **technological system** that can search continuously for new solutions”; “an **international system** that fosters sustainable patterns of trade and finance”; “an **administrative system** that is flexible and has the capacity for self-correction” (United Nations 1987: 50, point 81)

6. Changes in international policy required to realise sustainable development: searching for multilateral solutions, building a new system of international economic cooperation, global sharing and redistribution of resources , building a new system of global environmental governance or earth system governance

Conclusions from the report to specify sustainable development

- **Scientific knowledge for the sustainability process** needs to be generated through interdisciplinary research, knowledge integration and synthesis –knowledge about economic and non-economic factors and variables influencing the process
- **Political and collective action for sustainable development** requires a broadening of the policy process in the sense discussed today as governance, including participatory and civil society action
- **The long-term perspective of sustainable development** requires ideas about the possibilities of transformation of the global economy and society - not described more concretely in the report, but visible in the principles and goals formulated under the guiding idea of sustainable development

After the Brundtland report

- The discourse and political process of sustainable development developed quickly since 1992, at all levels from the local to the global, with many governmental and non-governmental actors, many political projects and programmes, in civil society and everyday life, in a still increasing stream of scientific research on sustainability
- On the basis of the global framework programme “Agenda 21” for sustainable development resulting from the UNCED Conference in Rio de Janeiro in 1992, national and international environmental policies adopted sustainability as a guiding idea
- **This success is restricted through the lack of advances towards sustainability** in terms of reduction of environmental pollution and destruction, more equal development and sharing of resources. Sustainable development, aiming at a fair distribution of resources and ecologically rational use of resources, did not happen in the past three decades and significant changes in political and economic systems are not yet visible

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- **Two problems blocking the process: knowledge gaps and unequal power relations**
- **Knowledge problems:** insufficient practices of inter- and transdisciplinary knowledge production and integration; insufficient use of systems analyses of complex interacting systems (to identify effects of interactions between modern society, economy and nature) - such analyses were neglected, stuck in controversies, or data about the inter-action between social and ecological systems are insufficient
- **Policy problems:** unequal power relations in political and economic systems resulted in insufficient support for sustainability projects and lacking integration of programmes at local, regional, national, international and global levels. So far policies proceeded in forms of “piecemeal engineering” and pragmatic strategies in the sense of “wicked problems and clumsy solutions”

Implementation of sustainable development

- **Unequal power relations in the global economy and society, vested interests, create difficulties to implement policy programmes and transformative capacity:** Sustainable development as an idea to deal with the global social and environmental problems has become more difficult and lost much of its attraction as inspiring and motivating idea that spread with the UNCED-conference in Rio 1992
- The loss of glamour is experienced in two forms: **the difficulties with implementing the changes envisaged for which the routines of policy and governance processes are not sufficient, and the growing scepticism among scientists and political actors to see the necessary changes as possible and achievable**
- The scepticism was articulated at the occasion of the following global summit in Johannesburg 2002 in the reasoning: it is too late to implement the big changes required for sustainable development. Such scepticism may as well be motivated by knowledge about the difficulties to transform economic and society systems, as by deterministic views of the future denouncing the efforts of sustainable development as useless (to deal with both forms of shortened reasoning: continuous creation of new knowledge to improve the sustainability process)

Renewing the sustainability process

The global economic crisis since 2007 and the difficulties with implementation of global climate policy brought more critical discussion of sustainability, economic growth, and social-ecological transformation of modern society

The sustainability process remains controversial, but with new knowledge available it **advanced from controversies about worldviews to controversies about knowledge and empirical data to apply**. In the long process of improving the knowledge base, the fuzziness of the idea and contrasting interpretations is no longer the main problem: **more important becomes the discussion of transition paths to sustainability** – two contrasting variants presently in discussion:

The powerful governmental actors engaged in the sustainability process (UN, OECD, EU, World Bank, FAO) reformulated sustainable development in terms of **“green growth” or “blue growth”** (for marine resources)

The more critical scientific actors and environmental movements reformulated sustainable development as a new **“great transformation”** (term of Polanyi), or as social-ecological transformation, with growth-critical knowledge from ecological research (Daly 1996)

Advances – what has been achieved and learned

- **Present research about the transformation to a sustainable economy of the future:**
- Research on sustainable economy is already intensive and continually increasing since the beginning of this century, research about transformation to a sustainable economy ten times lower, but also continually increasing (indicated by publications reference in SCOPUS), a large part of this research is **interdisciplinary social-ecological research**.
- A main theme: studies about the action of enterprises and consumers - **unsustainable patterns of production and consumption** and how to turn them into more sustainable forms (see: Journal GAIA, issue 1, 2019)
- In this interdisciplinary knowledge process economic knowledge becomes part of interdisciplinary forms of production, **co-production and application of knowledge, in cooperation of science, policy and civil society**, driven by collective learning processes
- **Sustainable development - a continually improving concept and process**, developed and updated through knowledge practices in science, policy, and civil society: practices of joint and social learning and of analysing processes in complex and coupled adaptive systems, where development and transformation include multiple interconnected changes

Forms of collective knowledge production and learning in sustainable development

- **Interdisciplinary forms of research:** ecological research (human, social, political ecology) and sustainability research (in sustainability science and transformative science); interdisciplinary environmental research, especially about climate change and its consequences
- In economics - interdisciplinary opening and knowledge integration mainly in heterodox approaches (institutional economics, development economics, interdisciplinary economics, and ecological economics)
- **Development of inter- and transdisciplinary knowledge practices in science and politics:** "citizen science", "new forms of knowledge production"/"mode 2", "postnormal science", "transdisciplinarity"
- Not only scientific knowledge and its application was reflected critically, but a plurality of knowledge forms interacting with scientific knowledge when it is socially applied – **practical, local, managerial, experiential, normative knowledge**
- **New ideas about knowledge creation, co-production, application:** adaptive management or governance, policy as experiments, collective learning, cooperation of different social groups of knowledge bearers

Economic knowledge for the sustainability process

... provided from different schools, with arguments for and against a system change, for and against economic growth, differing between approaches, schools and theories:

Multi-paradigmatic state of economics, plurality of approaches, mode of development of the discipline (new research themes are adopted through sub-disciplinary specialisation) – specialisation makes it difficult to understand the complex social and ecological reality, in which economic processes happen:

Further knowledge and interdisciplinary integration of knowledge from social and natural-scientific disciplines and research is required to make economic knowledge workable

In the processes of knowledge transfer, application and political decision making – further problems through **selectivity of knowledge use in the policy process** - sustainability policy/governance do not follow a scientific rationality: political and economic power direct the knowledge sought and selected. The selectivity of knowledge practices, of recommendations derived from research, of epistemologies and methodologies of knowledge production cause controversial debates in the scientific and political sustainability process

... and the limits of economic knowledge for the sustainability process

Sustainable development refers to scarcity, valorisation of natural resources, to economic growth, distribution and redistribution of resources, property rights and access to resources; ideas to solve the problems on the way to sustainability include bio-economic approaches, other ideas of a “green economy”, or ideas about degrowth and social-ecological transformation of the global economy and society

To solve the problems resulting from economic growth, not only economic research is required. Scarcity of natural resources can be measured in ecological and economic terms, as naturally or as socially caused scarcity, or as combination of both. **To explain environmental problems, their causes and consequences, and solutions to the problems, knowledge from economics and ecology needs to be combined** – ecology: to assess functioning and development of ecosystems, consequences of environmental pollution for humans and nature, environmental risks of overuse of natural resources, coupling and interaction of ecological and social systems, causes and consequences of global climate change, of biodiversity loss, of land use change and urbanisation, limits of natural resource use or planetary boundaries

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Calculating the potential costs of environmental damage and restoration is only a limited part of the knowledge in the sustainability process. To formulate strategies, pathways and policy programmes for sustainable development requires inter- and transdisciplinary knowledge practices in science and politics

Concluding from these considerations: in the sustainability process economic knowledge needs, first of all, to be combined and integrated with ecological knowledge, and then with further and specific social- and natural scientific knowledge that explains the social-ecological systems (and their coupling) that are involved in the process 18

The future scientific and political sustainability process

- **Intensifying interdisciplinary knowledge exchange and integration:** sustainable development is more than a political and economic process - policy research and economic research cannot provide all knowledge about the changes required to achieve global sustainability
- **Less discussion about the definition of sustainable development** or finding a suitable scientific concept - the discourse will continue with different views, but needs to focus on possible forms and pathways of transition to sustainability as a long-term process
- Further requirements:
- How to deal with **asymmetric power relations and vested interests** of powerful global players (the newly developing transformation science)
- Necessity of reflexion and discussion of the **normative and value-bases of sustainable development** and its shaping through power relations 19

Sustainable development – a knowledge paradox

- **Related to the impossibility to foresee the future – organising a process of transformation, but not knowing how the future society looks** like that should be achieved through the transformation
- At present, at the beginning of the sustainability process, there are not enough knowledge and guiding ideas to specify the forms of agency and action to achieve sustainability for a long process (who are the important actors, what do they need to learn and to do, how to regulate the transformation process). Large parts of the knowledge required need to be created on the way towards sustainability
- Only through further research, knowledge integration, gaining of new experience, insights through joint and social learning (for example, in sustainability science) can progress in sustainable development be expected. The joint learning includes the broadening of knowledge production from scientific research, to understand successively, which systems and processes the sustainability process includes, from which factors it depends, how far it is a political process, and how far it requires other processes of change

Sustainable development – a development paradox

Related to the spatial expansion of modern society, to the global dimensions and **the temporal acceleration of processes of social and environmental change** – difficulties to understand the connections between (local) resource use and its (global) consequences:

Fischer-Kowalski (2003): **with the industrial society and the global economy, the close connections between resource use and the local territory dissolved**. The energy use in industrial societies is, through the global exchange of energy resources, practically independent from the domestic territory of the country or its size. CO₂-emissions do not have local or regional effects there, where they happen, only in the sum of global emissions that are a main cause for anthropogenic climate change. The connection between industrial production and resource consumption in industrial society is at national levels not visible and not controlled

The decoupling of resource use from local areas has shifted the environmental consequences to the global level, and here, finally, the connection between territory and (over-)use of resources is found as unbalance resulting in global environmental change, with the consequence that a new balance between production, consumption and pollution needs to be found – a decoupling of human use of natural resources from the earth is not possible



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Appendices

Missing in the Brundtland report

... is the use of knowledge from critical analyses of the global economy and its interaction with nature that existed already at that time

Meanwhile such analyses have developed significantly, for example, in sustainability science, in social-ecological research, in world system analysis, in ecological economics, in analyses of unequal exchange and of complex interacting systems, and in global assessment studies (see chapter three)

In such interdisciplinary system analyses the cleavage between the developed and the less developed countries and economies, is one of the core themes, showing the lasting heritage of five centuries of unequal economic development of the modern economic world system through the epochs of European conquest, colonialism, and industrialisation in Western countries. The unequal development and the systemic nature of the modern economic system gave rise to the Brundtland report. Sustainable development claims to deal with the problems caused by the global economy – poverty, unequal development, degradations of ecosystems, global environmental change; however, political strategies and programmes remain weak without interdisciplinary system analyses

Controversial ideas in the Brundtland report

Ideas about further economic growth, seen as necessary to combat poverty and inequality, remain vague: sustainable development requires changes of growth, to make it less material- and energy-intensive and creating more equitable impact; aiming at mutually reinforcing economic and social development; harmony between humanity and nature as final state of sustainability (United Nations 1987, chapter 2, points 35, 41, 81)

The *idea of a sustainable world economy* remains unclear as that of growth, not showing the changes required to make the global economy sustainable and leaving the impression sustainability is possible within the present system through demanding “more rapid economic growth in both industrial and developing countries, freer market access for the products of developing countries, lower interest rates, greater technology transfer, and significantly larger capital flows, both concessional and commercial”; the idea is deadlocked in the formula “the international economy must speed up world growth while respecting the environmental constraints” (United Nations 1987, chapter 3, point 3, point 72, 74)

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Possible catastrophes through continued unequal development and potential growth are – in difference to the “Limits to growth”-report from 1972 – downplayed in the Brundtland report. Chapter 8 on industrial development shows the difficulties and dilemmas with seeking environment-friendly forms of industrialisation, following from the premise that many human needs can only be met through goods produced by industry: “Industry is central to the economies of modern societies and an indispensable motor of growth. It is essential to developing countries, to widen their development base and meet growing needs. And though industrialized countries are said to be moving into a post industrial, information-based era, this shift must be powered by a continuing flow of wealth from industry.” (United Nations 1987: 144) – in contrast to that the report states: “It is becoming increasingly clear that the sources and causes of pollution are far more diffuse, complex, and interrelated - and the effects of pollution more widespread, cumulative, and chronic - than hitherto believed. Pollution problems that were once local are now regional or even global in scale. Contamination of soils, ground-water, and people by agrochemicals is widening and chemical pollution has spread to every corner of the planet.” (United Nations 1987: 147).

Sustainable development as multi-scale process

- The manifold initiatives, projects and programmes for sustainable development at local and national levels are less integrated than in the global climate policy that is part of the sustainability process
- Global sustainability policy remained symbolic policy to confirm the normative principles as the basis of global consensus, which becomes visible with the efforts to develop global environmental governance since the last decade
- The many international regimes that developed in environmental policy in the past decades were not assessed and integrated in the sustainability process that created only a limited number of new environmental regimes such as the conventions on biological diversity, climate change and desertification. New questions coming up in the sustainability discourse direct towards improved regime building and economic transformation

Questions to specify knowledge requirements in the sustainability process

Which scientific knowledge is relevant for the sustainability process, where different types of systems - social, cultural, political, economic, technical, ecological - are interacting at various scale levels? Which non-economic factors and processes influence natural resource use practices and the economic processes of production, exchange and consumption? How can knowledge from other social and natural-scientific disciplines, especially about the complex processes of global social and environmental change, be connected with economic knowledge? Which cognitive, epistemological and methodological problems need to be dealt with in the integration of knowledge about complex interacting systems? How can knowledge controversies, competing and contradicting knowledge and unsecure knowledge be dealt with in the sustainability discourse? How to account for counter-current processes to sustainable development as economic deregulation and globalisation? What are the strengths and the weaknesses of a purely economic view of the problems of sustainable development (the Stern-review of climate policy, Stern 2007, can serve as example)? What are the theoretical requirements of knowledge for the sustainability process, especially for the understanding of nature-society interaction in modern society? How to deal with limits of knowledge and ignorance that appear continually in the analysis of complex and coupled social-ecological systems? How can the knowledge from global environmental assessments, such as the millennium ecosystem assessment, be applied at different spatial levels of the sustainability process? How can the temporal horizons of the sustainability process - as a long-term process that stretches in the unknown distant future - be dealt with in the "presentic" forms of sustainability governance that acts in the short-term perspectives of the foreseeable future?

Globalisation and sustainable development

- The global economic process: contrasting processes of globalisation with deregulated markets and attempts to develop a sustainable economy of the future, trapped in contradicting diagnoses of the problems of economic development:
- World Business Council for Sustainable Development argue “Denying poor people access to markets is planet-destroying as well as people-destroying” (Holliday et al 2002: 41), in contrast to
- International Forum on Globalization: the present market is unfair because distorted in favour of a small ruling elite, and “because it is ‘unfree’, burdened by policies and conditions that hinder the poor from freely competing in it” (Cavanagh et al 2002: 4, 53)
- Dilemmas in the sustainability process: balancing three contrasting processes with different logics, rationalities, interest-bases, and consequences - the global policy process, the global economic process, and the global process of anthropogenic environmental change. These contrasts cause dilemmas in the sustainability process, knowledge- and a development paradoxes