

Towards an Integrated Concept of Sustainability

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1. The Four Challenges

All our economies are dependent on the life sustaining systems of the ecosphere. This long ignored fact came high on the political agenda only when the economic implications of environmental damages became obvious or at least foreseeable. To name just a few:

- Degradation of marine resources causes the fisheries' collapse (a steady decline since the 1992 record high, see Millennium Ecosystem Assessment 2005);
- Deforestation (up to 20 million ha/yr) and loss of soil fertility (net loss of fertile soil: more than 25 milliard t/yr) threaten future agricultural productivity and cause immense cost for fertilisers (Millennium Ecosystem Assessment 2005);
- Falling water tables and ground water pollution put not only human water supply at risk, but undermine the use of whole areas for agricultural purposes;
- Clear felling of forests instead of sustainable management has been speeding up the loss of biodiversity, a value in itself, a crucial resource for the pharmaceutical and agricultural industry, and the basis of essential ecosystem services (Millennium Ecosystem Assessment 2005)
- Lake acidification (in about 80% of Scandinavia) and forest dieback (about 40% in Europe) have been combated at high cost in Europe, but continue e.g. in China (EEA 2003; The Economist 2004). Everywhere, the loss of forest value is obvious and uncompensated for;
- Stratospheric ozone depletion (varying with season and geography from 5% to 95%) not only endangers human health but decreases agricultural and marine yields as well (Enquete Kommission 1995); the ozone sphere recovers slower than expected;
- Greenhouse gas accumulation in the atmosphere will through change of the average temperature increase the number of weather irregularities, storms, change of rainfall patterns, and cause enormous an enormous burden for economy and society (IPCC 2007); the costs have been estimated to reach up to 20% of the global GDP (Stern 2006).

The first dimension of the global crisis is that, on current practice, our environment is overused and the stability of our life supporting systems is threatened.

At the same time, while we began to realise the impact of the global environmental crisis on our lifestyles and economies and vice versa, another problem was arising: *the share of labour in the total national income has been constantly decreasing over the last twenty years in the OECD countries.* This has either taken the form of decreasing average income per capita, as in the United States, with constant household incomes due to increasing female labour force participation (except for the exploding top 10% and the declining bottom 10%), resulting in a new class of working poor. Alternatively, in Europe relatively high salaries despite significantly less working hours were paid to workers who had a job, but an increasing

number of people was unemployed (since the turn of the century many Europeans try to imitate the US model of salaries below the subsistence level).¹ Although in some countries in the South there has been enormous economic success (which is usually quite unevenly shared by the population, in India much more so than in China), on average the income gap between North and South has been increasing. The problem of poverty in the growing world population is one of the most pressing issues for the future of humankind.

The second dimension of the global crisis we can analyse is a distributional and social dimension: labour has been undervalued (underpaid in the US and under-used in the EU). The distribution of income exhibits a widening gap between the rich and the poor people, peoples and countries.

Given these failures, we have to analyse the driving forces behind, i.e. we have to take a closer look at politics and the economy. Describing the state of the economy today we can say that the total consumption of human economies already exceeds important productive and waste assimilation capacities of the ecosphere. At the same time we are making a socially unsustainable use of the wealth created. Before going into any details, a brief look at the underlying economics will be helpful.

There is one point in case for those claiming new orientations to be desirable, but not economically feasible: an appropriate legal and economic framework is needed to make this "option for the future" not only politically and ethically superior, but as well economically attractive. This (including the conditions of attractiveness) is the theme of "sustainability policies" we deal with in this paper. Besides this, however, there is a significant lack of risk taking, of the "creative destruction" described by Schumpeter as a characteristic of an innovative economy, a failure in recognising the new business opportunities provided by change, of entrepreneurial spirit, and a rush for monopolies and power positions.

*When the winds of change start blowing,
some people begin to build windbreakers
but others build windmills (Anonymous)*

The failure of the business world to get actively involved in the strive for sustainable development cannot be explained by simply pointing out the new challenges for business caused by globalisation and increasing competition, as the examples of some frontrunners illustrate (sometimes under the label of corporate social responsibility CSR). Since more than a decade it has been documented it is possible to develop new products based on the assessment of human needs in a sustainable society (Shapiro 1997), create new production, distribution and take back systems (DOW Chemical Europe 1996), incorporate sustainability considerations into a business strategy – and make an economic success out of it (Fussler, James 1996). However, despite all sustainability ranking and reporting (Kohtes Klewes GmbH, Fishburn Hedges 2004; O'Connor, Spangenberg 2007), these companies, many of them multinationals, are still rather exemptions than the rule (imug GmbH 2007). The increase of the world average interest rate from 2.9% in the 50s up to 5.5% in the mid-90s has as well contributed to educate a management generation with a preference for non-productive investments (low-risk or speculative, the latter in Latin America frequently called "Casino Capitalism"). Neither the burst of the dotcom bubble nor the lower interest rates around the

¹ That this is not a necessity but a result of deliberate policy choices is illustrated by the Scandinavian countries which successfully demonstrate that a high standard of living, an extended welfare state, competitiveness and economic success can go together, if the adequate policy decisions are taken.

turn of the century have essentially changed this attitude, since it is based on structural change of the economic processes, resulting from the income redistribution mentioned. Whereas in the past with growing consumer demand the number of investment opportunities was high, and different investments had to compete for capital from banks or investors, now the balance has changed. Investment funds, banks and pension funds each manage about 20 billion US\$, searching for profitable investment opportunities – which are getting less, not least due to the stagnation in purchasing power. This is where high-risk management (often from hedge funds, to realise short-term profits) and speculation kick in – the dot.com bubble, the housing bubble etc. illustrate the mechanisms and the risks.

The third problem of our economies is that instead of offering innovative solutions to new problems (e.g. ageing societies, social cohesion, safeguarding ecosystem services, dematerialisation of services) and thus creating new markets, new business opportunities and additional employment, business is obsessed with cutting costs for the supply of yesterdays solutions to tomorrow's problems. Investment aim at more of the same (mergers, takeovers, restructuring) but not at research and development for new solutions to emerging problems.

This has severe repercussions for politics: under the strong influence of conservative thinking and neo-classical politics, all domains of politics have been subdued to economic interests, instead of trying to strike a balance between these and other values of society (in particular social justice), which are just as legitimate. The basic values of Europe like social balance and participation are being undermined (shareholder value instead of stakeholder participation), enforcing the tasks of decision making and shouldering responsibility on everybody, that is relocating the responsibility (for failures) to those who can carry it least. Values like solidarity in the very construction of the health care and pension system, in unemployment benefits schemes and in day-to-day-life inside and outside the companies are considered outdated and abolished. As a result, societal cohesion is eroding (Spangenberg 2004). The identification with the employer is eroding, as is the identification with the local community due to (partly enforced) increasing mobility. Increasing discrimination, racism and violence are the foreseeable and already manifest result. Social politics, education, research, environmental politics etc. are almost exclusively assessed regarding their contribution to economic competitiveness. Furthermore, public authorities as well as the internal relations in companies are being restructured according to "market relations", resulting in "downsizing", "lean management", "lean production", neglecting the social component of the corporate identity in companies and administrations as well as the corporate memory.

Governments in OECD countries around the world consider this kind of politics as the appropriate adaptation in times of globalisation of the economy, promising "sustainable growth", wealth, and even a clean environment, once a sufficiently competitive position has been reached to be able to afford spending for such purposes. For the time being, globalisation – they say – dictates the agenda and leaves no room for social, environmental or development policies. However, they tend not to realise that the economies of the North as well as their governments are not the victims but the actors and winners of globalisation. They present their respective country as favourable location to the international investors, by lowering taxes, social and environmental standards. Doing so forces other to offer even "better" conditions, resulting in a downwards spiral, a race to the bottom that knows no winners (a loose-loose-situation). Consequently the "sufficiently competitive position" pursued is a Fata Morgana that can never be reached for more than a brief interim period. Consequently, all promises for "the time after" are due to be broken, they are at best illusions and wishful thinking, and at worst a camouflage for the deliberate redistribution of power and wealth, of undermining security, mutual trust, democracy and the welfare state.

Governments seem to be not aware that by pursuing this way of dissolving non-market relations, they are dissolving the very glue of society, undermining the stability of society itself and not least its function as the basis of the economy. Even more ironically, they are damaging the local and regional informal and communicative networks which today are the very basis of international competitiveness. Ideological blindness (not least of new theory²) makes policy proposals self-destructive. However, societies can afford to wait until the failure becomes even more obvious: the social cost are too high. Current politics, obviously unable or even unwilling to seriously tackle the most pressing concerns of the people leads to an erosion in trust, to a lack of governability.

The fourth challenge is the disappearing trust in decision makers (be it politicians, governments, managers; trade unions or other representatives of the civil society) and societal institutions, in their willingness to promote and their ability to enforce change for the common good. As a result, a general crisis of legitimation emerges, undermining the cohesion of our societies.

2. Towards sustainability policy: challenges and approaches

In a nutshell, we are producing too little wealth from too much resource consumption, and we distribute the wealth produced too unevenly. Societal institutions do no longer provide a social balance. Business interest dominates public policies as well as the civil society. What does sustainability policy mean, given this political and socio-economic context? In first instance, it is the attempt to bundle a huge number of overdue reform project into a coherent approach in order to meet all four challenges simultaneously. For objective and obvious reason, it will only be possible to solve them together, since failure in one case will reinforce inertia in the others. So what is needed today are integrative approaches, and nothing can be more counterproductive than playing one case against the other.

Given the broadness of the concept, it is quite natural that in Europe different ways of perceiving the concept of sustainability have become manifest in different countries during the public debate on a sustainable future, based on the respective traditions and cultures:

- *Social justice* was the dominant driving force of the civil society debate in many parts of Central and Eastern Europe. Suffering from the experience of rapidly increasing poverty and wealth for a minority, and confronted with international adviser's position that it should be this way and that there was no other way to go, sustainability was welcomed in the mid-1990s as an alternative way of conceptualising the future. Thinking in terms of sustainability made it possible to put the key issue of social justice on the political agenda again, which had been declared a non-issue under the IMF – led restructuring policies (it partly still is one within the ruling elites).
- *International solidarity* was behind many discussions in Switzerland and in Scandinavia, where it traditionally plays an important task in policy prioritising (see e.g. the ODA contributions of about 1% of the GDP).
- *Freedom* was the access preferred in the French civil society debate on sustentabilité: Self determination of future generations (and even partly of ours) is only possible if we

² The theory of competitiveness focuses on the micro level. Social and environmental cost, including transport, which if fully internalised would tend to overcompensate the competitive advantages are ignored, and the insights of the theory of systemic competitiveness, highlighting the importance of the meso- and meta level factors is not taken into account.

maintain a variety of options, environmentally, socially and economically. For government and business, stability was a more pressing demand; they translated sustainability into *durabilité*, now the dominant term in French.

- *Environment* has for long been a dominant theme on the political agenda in Germany and the Netherlands, only recently overshadowed by social and cohesion concerns. Consequently, the environmental debate spurred the efforts towards sustainability in these countries.

A house may be entered through many doors – in the end, all these approaches meet around the shared concerns over the four failures outlined above. This is reflected in a number of papers and resolutions which try to integrate the different problem areas, a most comprehensive one being the INES appeal (INES 1996). This paper spells out the following criteria of developing sustainability:

- "• protecting the integrity of the biosphere
 - practice sustainable agriculture and forestry;
 - preserve marine resources and biodiversity;
 - establish networks of nature protection;
- efficient use of resources
 - social innovation on production, product distribution and use;
 - development of new technologies and designs to increase efficiency;
- self - reliance
 - enhancement of endogenous production capacity in the non-industrialised countries using all opportunities available, adding value to the resources and creating jobs in the countries and communities of origin;
- participatory democracy
 - creation of structures that ensure access without discrimination of any sort including gender or income level to education, participation in civil and political life, health care, food and other resources, and means of production and labour opportunities; these structures should encourage people to bring their creativity into the political planning and decision process, and thus contribute new ideas and life styles to global sustainability;
- fair trade
 - establishment of fair trade patterns and regulatory mechanisms;
- peace and non-violence
 - creation of a culture of non-violence and establishment and strengthening of structures for peaceful resolution of conflicts;
 - prohibition, elimination and verified safeguards against all weapons of mass destruction;
 - severe restrictions on the development, transfer and use of all weaponry."

However, if this helps to clarify what developing sustainability could be, one question is left: What is development? And, consequently, what would sustainable development mean? On this point, P.M. Fearnside, a scientist working in Brazil, gives a comprehensive description:

"'Development' refers to a change, implying an improvement, in the way that people support themselves. Although the term is frequently misused as synonymous with 'growth', it does not necessarily imply an increase in the throughput of matter and energy in an economy. Indeed, if continual increase in either flows or stocks were a requirement, then 'sustainable development' would be a contradiction in terms. Since 'limits to growth' constrain the use of

both, renewable and non-renewable resources, strategies for sustainable development must, in the long run, concentrate on reorganization of how resources are used and how benefits are shared.

Much of the discourse on sustainable development has implied that this can be achieved with unending growth, adding only the caveat that environmental quality standards will somehow be respected. Sustainable development is seen as a means of not admitting the existence of limits. Recognising limits is restricted by the rich as a potential cap on their profit making, while the poor and those who work on their behalf often have an ideological aversion to recognising limits for fear that doing so condemns the poor to poverty. Unfortunately, limits to what can be removed and sold from Amazonia or any other region exist, independent of what people may think about the matter." (Fearnside 1997).

*Great minds think alike,
but insanity speaks all languages
(Popular wisdom)*

From this statement it is quite obvious that neither our current economic practice can be considered sustainable, nor can the theory behind it be regarded sufficiently up-to-date. In our economies, the *circular flow of income* (business income, investment, production and salaries, sales and individual consumption, which are in turn income to business again) is maintained by mostly *linear flows of resources* like energy and materials. All recycling activities, besides causing significant material flows and energy consumption themselves, cannot overcome the laws of thermodynamics, according to which degradation by use is unavoidable and recycling a necessary but limited approach (CO₂ cannot be recycled into energy, used pesticides and irrigation water cannot be regained). According to the same laws, each of these flows is inevitably linked with the production of entropy, i.e. environmental disturbance potentials. Economic theory, however, focuses on the monetary flows, and the physical basis of the economy is simply overlooked (Georgescu-Roegen 1971; 1976; Daly 1996).

Although today, due to a level of technical efficiency well below the theoretical maximum, more than the necessary amount of entropy is produced, there is a theoretical minimum of entropy generation associated with every kind of (necessarily combined) material and energy flows through the economy. Consequently, increasing wealth, capital stocks, etc., is based upon increasing entropy in the ecosphere. However efficient production will be, even at the theoretically possible maximum, there is still unavoidably a significant amount of entropy generated with every unit of materials and energy used. This means that, in the long run, unlimited growth means unlimited entropy production, since a limited potential for efficiency increase can moderate the effects of unlimited growth only for a limited time. ⁽³⁾

So the open questions that remain are which level of entropy generation will have what destabilising impact on the ecosystems, how much of it can be afforded without going beyond the limits of a sustainable ecosystem use, what are the corresponding social and economic costs, and what costs are acceptable and who has to bear them.

³ As the World Bank has pointed out, taking the depletion of natural assets (minerals, forests, etc.) into account, the economic growth of many countries has indeed been linked with a decreasing national wealth. When linked with the growing environmental disturbance potential and its economic consequences as mentioned earlier, the current pattern of growth turns out to be decreasing the "wealth of nations", and the GNP to be a quite misleading indicator for measuring wealth. For more details see van Dieren, 1995.

Eventually, given the non-linear behaviour of complex systems, and the possibility of multiple post-perturbation states, the possibility exists that the ecosphere may "flip" into a configuration unfavourable for continued civilised existence (W.I. Rees).

3. Consequences

If we accept the two normative assumptions of intra- and inter-generational distributional justice, i.e. the need for

- equitable access to the world's resources as a kind of human right to resource use (intra-generational justice), and
- equivalent services from the environment for future generations (inter-generational),

we have to limit (and indeed to reduce, given the damages already visible) the entropy generation stemming from the resource throughput of our economies. As a first, directionally safe target, a 50% reduction of global consumption has been proposed for material flows (Schmidt-Bleek 1994) and for energy consumption (von Weizsäcker et al. 1997; Stern 2006; IPCC 2007); for land use, only politically defined qualitative criteria exist (Bundeskantleramt 2002).

Taking into account in particular the human right to an equitable share of resource use on a global scale, based on equal access to the use of the common heritage of mankind, we need an even more dramatic redistribution of resource use. Fair distribution results in a reduction need of ca. 3/4 for energy (a factor four), 9/10 for material input (a factor ten) and a reduction of land use intensity in Europe (Spangenberg 2007a). For the South, however, this means in average a doubling of resource availability compared to current standards, and still being within the permissible consumption limits. This is what we call "living in our environmental space" (Spangenberg 2003a).

It has to be pointed out that political considerations only begin beyond this point. So far we have only been talking about physics combined with two explicit ethically normative assumptions.

4. Sustainable Economies and the growth trap

No need for a decrease in material well-being is detectable from the reduction targets for materials, energy and land, provided resource productivity increases more than resource consumption decreases (Spangenberg et al. 2002) ⁽⁴⁾. But nonetheless, the impacts on lifestyles as well as on the economy will be significant (for criteria and indicators of an *economically sustainable* economic development see (Spangenberg 2005).

The given *socio-environmental target* of dematerialisation (environmental: reduction of resource extraction by 50% globally; social: equal access) for the West is the reduction of resource extraction from the environment by 80 - 90% compared to the current level (Spangenberg et al. 1998). We now have to link this physical ceiling for the material

⁴ Although the increase in total factor productivity, driven by labour productivity, hides the fact, that resource productivity has been increasing extremely slow and capital productivity has been decreasing over the last decades in many OECD countries.

throughput to its impacts on our economies, and in particular on growth, since growth is the traditional, supposedly pain-free answer to all distributional questions, as even the Brundtland report illustrates (WCED 1987).

In order to maintain a constant amount of services while meeting the environmental demands, a dematerialisation of the current economy, i.e. of the status quo resource throughput, by a factor of ten over the next 50 years is necessary. In the case of a growing economy (⁵), the factor will increase just in order to keep the throughput of raw materials through the economy on the environmentally justifiable level. With an annual growth rate of 2% the resulting factor of necessary dematerialisation will be 27, and with an annual rate of 3% it will be 45. We do consider a reduction of throughput by a factor of ten technically feasible within 50 years, however hardly a reduction by a factor of 45 (or by a factor of 200 within the next century, see figure 1).

Thus, limits to material flows translate into limits to growth: even after reaching a dematerialisation by a factor of ten, economic growth must be limited to be at maximum equal to the annual increase in resource productivity. This however means, that although the annual economic growth for a couple of decades will be boosted by the necessary restructuring of the Western economies, in the long run the level of the annual increase of resource productivity forms a ceiling to growth. For Central and Eastern Europe, where a fundamental restructuring of the economy is under way anyway, it will mean to give the transformation a sustainable direction and thus creating jobs which are not only available in the short run, but are safe in the long run.

Figure 1: Delinkage of GDP growth and environmental space used

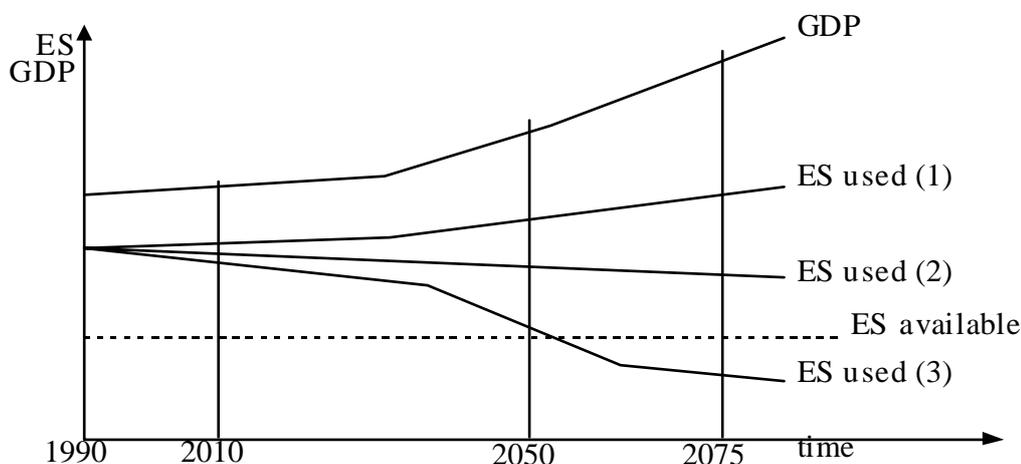


Figure 1: The necessary delinkage of economic growth and environmental space use must not only be relative (graph 1, reduction per product/unit of GNP, overcompensated by growth), but it must be absolute (graph 2, reduction of environmental space use in absolute terms). This is the right direction, but we must furthermore take care that the dematerialisation targets are reached in due time (graph 3, within 50 years). We call this dematerialised or problem solving growth.

⁵ Based on GDP calculations. GDP is a misleading indicator when read as characterising wealth (or, even more misguided, well-being: for a critical view see van Dieren, 1995), but it is perfectly suitable to measure the financial turnover of national economies and thus to characterise the dematerialisation needs for a stabilised resource throughput in terms of t/€

For the South, plagued with the IMF/World Bank structural adjustment programmes it means to insist on giving the structural adjustment a sustainable direction instead of primarily orienting it towards globalisation, export earnings and debt service. The recent debt repayments of Russia and most of Latin America provides an opportunity to redirect national development strategies in such a more sustainable way (Weisbrot 2006).

The current patterns of growth turn out to be environmentally disruptive, macro-economically counterproductive, jobless and not producing additional well-being. Obviously, growth as such cannot solve our problems. Instead, we have to decide what should grow (employment, education, literacy, health service availability), and what should not (disparity, waste, deforestation, poverty) and design the proper strategies towards these ends. Growth as a simple, universally applicable catch-all solution does not work any longer.

5. Sustainable Societies

This however means that we will have to live with different patterns of primary distribution and with different redistribution policies in our societies: since there is only limited gain from growth for the business sector, companies will try to claim the benefits from productivity increase (traditionally the base for salary increases) for themselves. This in turn will decrease the amount of finance to be distributed more or less conflict-free to the employees – they will face the need for industrial action and still limits to their income growth (although maybe less than in the last decade, and for better reasons). New conflicts over income distribution are thus foreseeable in Western economies. Implementation of sustainability will probably be hardest for those societies, which already facing the most severe and growing inequities, i.e. where there is no (longer a) social climate of burden sharing. It may be no mere coincidence as well that those countries with the lowest inequality ratio (which often comes together with a more consensus and less conflict oriented policy approach, see Alber 2002) frequently have a high profile in national and international environmental affairs.

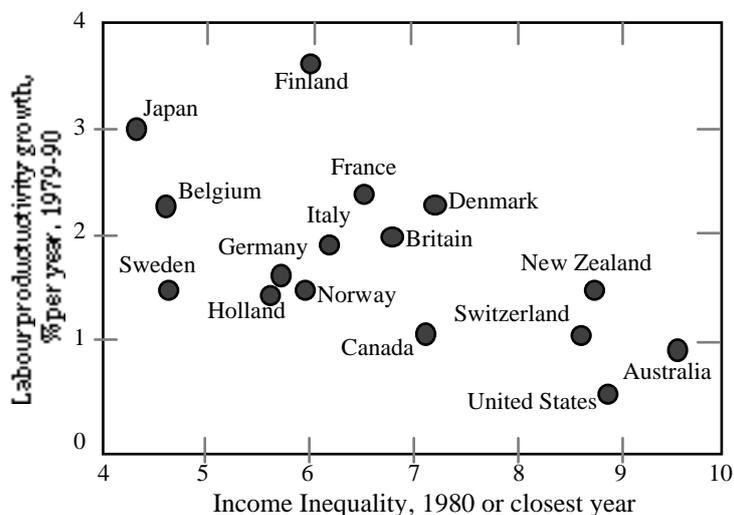
Whereas in most countries the absolute and relative income of the richest 10% of the population has been increasing considerably over the last 25 years, contributing not only to income differentials but as well to very extensive life styles and wasteful consumption patterns ⁽⁶⁾, this tendency must be reversed. Reduction of resource use must go together with more equitable distribution patterns – or it will go together with increasing precarisation and poverty, and will thus be bound to fail. The transformation towards sustainability will – like all fundamental transformations – cause severe social tensions, and if it is to find public acceptance, it must include a strong component of increased distributional justice and improved social secure, like a minimum basic income for everybody (Ziegler 2003).

So the second important social precondition for a broad acceptance of any sustainability strategy would be to aim at decreasing instead of increasing income disparities (for poorer countries or regions in- and outside Europe, the income level will as well be crucial). The

⁶ An analysis of per capita energy consumption in San Diego, USA, showed that the most abundant households not only spent three times more money on energy than the poorest ones, but used 5.33 times more energy than poor households. The difference, a factor five, is approximately the same than that between the average citizens of the USA and Argentina. For more examples see Lorek, Spangenberg, 2004.

poverty in large parts of the South and in Eastern Europe, and their confrontation with the small class of thriving capitalists in these countries might pose a specific risk for any transformation towards sustainability.

Figure 2: Income inequality and labour productivity: a negative correlation



Source: Institute for Public Policy Research

The increasing economic disparities have been justified as a means to provide an incentive for intensified work, increasing productivity, improved competitiveness and thus – in the medium to long run – provide better welfare for everybody. However, empirical data falsify this hypothesis: there is no positive link of income disparities and competitiveness, and even a slightly negative one (see figure 2; data prior to the introduction hedonic pricing in the US productivity statistics for better comparability):

In the South these considerations support the idea of giving poverty eradication a high priority in all national development strategies, instead of focusing on capital intensive industrial development.

For all social actors, the very fact, that there will be chances and benefits together with the risks described, is not too convincing: even if there are more winners than losers, that does not help the individual loser (for methods of ex-ante assessing the social sustainability of policies see Spangenberg, Omann 2007). Losers tend to be traditional sectors, established and well-organised, whereas winners-to-emerge tend to be new, small, weak and not yet organised. So the development of innovation strategies, creating win-win situations and helping some key players to shift over to the winners' side will be a key strategic precondition for any successful policy strategy towards sustainability, for avoiding policy lock-ins and letting the innovation process do its work of creative destruction. Thus a second precondition is the willingness of politics to confront and the ability to withstand vested interests

6. The Future of Labour

A Western society on its way towards sustainability will be confronted with the massive need to invest into restructuring its economy and infrastructure. This, however, requires massive investments of material, energy, money and work, i.e. it will generate an investment and employment programme of a higher impact than any other proposal discussed in Europe so far. The investment money could be derived from two sources: a revenue neutral ecological

tax reform ⁽⁷⁾ would redirect business investment and set incentives to increase resource efficiency investments – it has proven effective in this respect, although never comprehensively implemented. Public investments as well as private money could be triggered by legal measures (standards, liability legislation etc.), and the source of public revenues would be savings in unemployment benefits, since the massive restructuring would probably generate declining unemployment rates due to the Keynesian effects of the transformation investments necessary. Although environmental politics is no substitute for labour politics and its successes should not be measured in terms of jobs created, there will be – at least in the West – a significant impact for about 20 years (which would solve the problem as then the demographic development kicks in). Since this will decrease the pressure on public budgets due to decreasing social spending, we propose to use this opportunity to decrease the public debt to make sure there is still state intervention possible if the GDP begins to decline due to the reduced raw material throughput, causing a decline in taxation revenues as well. The latter however will take thirty years and more to happen, leaving appropriate time for all necessary adjustments (Spangenberg 2003b).

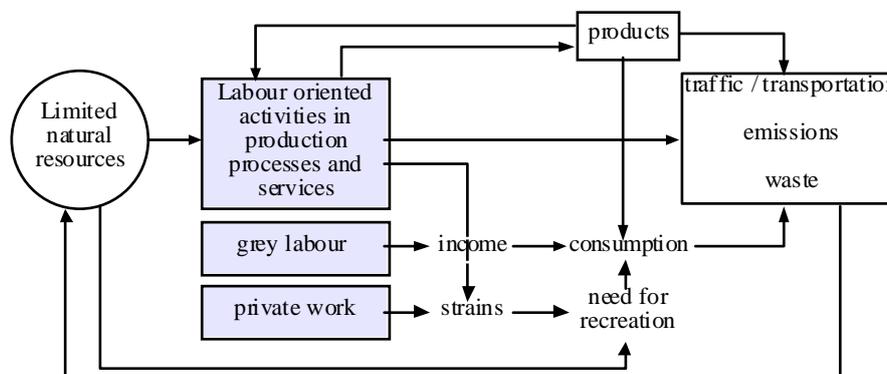
With dramatically reduced throughput and increasing transport cost per ton and km (necessary to achieve the above mentioned reduction targets), international trade will sooner or later be gradually reduced in physical volume and totally restructured. Whereas today the majority of material transport are bulk materials (mainly raw materials), increasing transport expenditure will justify long range transport only for those goods, which have a significant added value. This does not necessarily mean a decreasing value of trade (rather to the contrary by trading – added products) or a reduced income from it, but the restructuring of global trade towards the exchange of processed goods instead of raw materials, as it is already the case between the OECD countries at large. Such a restructuring of markets, however, implies a stronger role for local and regional economic structures, i.e. extending the range of regional products and services not due to international competition (like a hairdresser today, the regional milk company tomorrow). This is protecting production, services and jobs from international competition (and thus makes jobs safer), but also constitutes a division of national economies in one high competition, high productivity and high salary sector and another one with probably more safe but less well paid jobs. Balancing the income levels and making the move from one sector to the other possible will be one of the key tasks of future social and labour politics.

In the South however, increasing employment seems to be not necessarily an automatic result of a sustainability policy. As far as not overcompensated by the growing demand of the likes of China and India, the decreasing demand for raw materials from the North will create hardships for the export business in primary producer countries, but there will be a better chance to use resources for the development of the national economy and for a better standard

⁷ This means that there would be no flow of money from this source to Southern countries as a compensation for lost export opportunities. On the other hand, the whole effort is thought to give more space to the South, and compensating for offering opportunities seems to be not appropriate, at least in the long run. Problems should only arise in the transition phase, and during this time there is doubtlessly a need for financial and other support and compensation. Sources of revenue could include the abolition of transport subsidies/introduction of transport taxes, or a modified Tobin tax. However, it can be doubted whether this compensation should go to the nation states (who might use it for any other purpose but for fair distribution) or to the main export companies (usually not the poorest people in the countries, and as capitalist entrepreneurs obliged to take the risk as they have taken the profit). Alternative cooperation and distribution patterns should be developed in foreseeable time.

of living for the poor. This might furthermore open „windows of opportunities“ for a more labour intensive industrialisation strategy, in particular when China moves up the productivity ladder and India remains focussed on ICT as a key industry. A “New Social Contract” to combat poverty by empowerment, more distributional justice (incl. land reform, access to resources etc.), however, must be important elements of national development planning to make use of these opportunities.

Figure 3: Labour, resources and income: new production patterns will change labour as well



But not only the number and distribution of jobs are due to change, but the organisation of labour as well. Whereas today the maximum efficiency is usually to be found in industrially organised labour, sufficiency is more felt in self-organised work in household and community. So one of the key tasks for the future is to bring more elements from the private work into the factory, i.e. time autonomy, self organisation, team work, limited control and hierarchies, etc. On the other hand, the subsistence/self-organised sector should take elements from formal labour, e.g. safety standards, accident and health insurance, and pension schemes.

These changes (see figure 3), going together and partly based on more workers participation and the broad application of co-decision procedures on all business sectors will as well boost identification, imagination and innovation of the labour force. Consequently, similar measures have already been proposed by business consultants (with limited resonance), in order to increase the competitiveness of companies, as one step beyond lean management concepts, without having any idea about sustainability.

This change of the basic organisational characteristics of industrial labour is as well a key precondition for the development of sustainable consumption patterns. Today in Europe, the most dynamically growing kind of purchases is "compensatory consumption" or "addictive buying", caused by the lack of satisfaction from job and private life. Only if people can be satisfied by what they do in their job, they do no longer need this kind of consumption, as empirical research has shown (Reisch, Roepke 2004). The labour-linked preconditions for more sustainable consumption patterns, however, are exactly those described previously for reasons of competitiveness and sustainable production: Hopefully, this coincidence helps to rapidly implement the necessary changes (Spangenberg 2004). Labour, one of the core value setting systems in European societies, must in its basic organisation reflect the principles of sustainability. This is a task not only for management and company owners, but will need self organisation processes and labour union contributions, which are thus key players for any sustainability strategy (Hildebrandt, Linne 2000).

7. Sustainable Lifestyles and Consumption Patterns

The prevailing consumption pattern is based on the European life style, spread during the colonial period, enforced by the world economy and driven to extremes by the economic elites in the US and some Third World countries. Those are today forming the Global Middle Class, which sets the standards for what is regarded a satisfied life and thus drive the development of consumption aspirations all over the world.

In contrast to these lifestyles, sustainable consumption is based on a quite simple idea: it is not the quantity of ownership that counts for the quality of life, but the quality and quantity of accessible services. This breaks the conceptual links between quantity and quality as well as between owning and using and consequently permits a new definition of sustainable wealth: availability of a high level of qualified services, while reducing the physical throughput of the economy.

With changing resource intensity the products will necessarily change as well. Products for sustainability will be less resource (material, energy and land) intensive, more durable, repairable and will need much less work for production, but much more for maintenance and repair, plus reuse, deconstruction and recycling. These products will be probably more expensive (price per product, one reason being the need to justify the salaries for repeated repair and maintenance), but their long life spans will decrease the price per service unit gained from them, the “psychic income” increases (Fisher 1906).

One strategy to overcome supply limitations due to increased relative product prices (as compared to salaries) is sharing of goods that are not in permanent individual use, thus providing access to more services while releasing a burden from the individual budget as well as from the environment.

Furthermore, products will have to fulfil more basically aesthetical criteria instead of following short-term fashions to make extended use through ownership, sharing, re-selling etc. attractive – new design will be vital for the development of sustainable products. Corresponding principles for sustainability design have already been formulated (DEEDS 2007; Spangenberg et al. 2007).

Necessarily, education and qualification patterns will not only be quite different from today's, but will as well be highly dynamic in themselves – life long learning will become more important than ever.

Besides all these changes in the quality and quantity of production and consumption, also the spatial structure of our living and the organisational pattern of sustainable societies will have to undergo rather significant changes, not least to preserve landscapes and stop the ongoing loss of biodiversity (Spangenberg 2007a). In all agricultural and forest areas this will cause severe problems including the redefinition of ownership rights. Many efforts will be needed to regenerate the ecological buffering capacity in Western and particularly in Eastern Europe and to preserve it in countries like Brazil, Congo or Indonesia.

Furthermore, stabilising transport volumes and distances at about the year 2000 level in Europe, and strengthened supply from regional sources (for cost reasons, as mentioned) will add to the reduction of land use. Some sectors, like car sales or long distance tourism will suffer from this development, whereas other like regional food and beverage producers will gain the benefits.

8. Sustainability politics: left, right or just “in front”?

Sustainability, as defined here, has provoked an intense dispute as well as highly differing judgements as refers to its relationship to "traditional" political groupings and categories. Hardly any other concept has ever been accompanied by such differing judgements: labelled "a new kind of central planning approach" by some business associations, some major national and transnational companies welcomed it as "an inspiring new way of thought, creating immense business opportunities". Whereas some traditional left grouping saw a mere "greenwashing of capitalism", others found it to be "a new paradigm for the left". So, at the end of the day, what is it really?

Firstly, there is less brand-new conceptual thinking behind it than is obvious at first glance. Concepts like democratising labour, participation of the civil society, the service economy, post-industrialism, the consumer society, conserving the common heritage of humankind, and in particular solidarity, equity and quality of life are no way new: sustainability just provides a unifying framework for many old and new ideas. This, however, is not a weakness, but a strength of the concept - it can draw upon the experiences of past struggles and learn lessons from their experience. In this sense, it can become a (meta-)paradigm, not by recruiting followers of its own, but by bringing together people active for a better society in different places on different issues (Spangenberg 2000).

What, however, is a better society? Although hardly anybody denies that there is significant room for improvement of the dominating global capitalist model, in particular as regards social and environmental concerns, there is a fierce dispute what kinds of measures need to be taken. The ethical priority behind the sustainability paradigm then says: don't put the ideology first, don't put profits and markets first - put the people first, and then lets see what the market, what the state and what all parts of society can contribute. In this sense it is consensus-oriented, based on stakeholder integration and shared responsibility.

Secondly, since the concept has been worked out to change the status quo, and since the status quo is based on global capitalism, it is unavoidably critical about the current capitalism (although some people label it "natural capitalism", see e.g. Hawken et al. 1999; Hudson et al. 2004). This creates some structural common elements with traditional critique (see box), but it does not copy any traditional approach.

Thirdly, the use of elements of leftist critique, selectively based on past experience, is accompanied by a similar approach towards liberal and conservative ideas: the promotion of democracy and human rights is from its origins a liberal one, just as the emphasis on the market economy (however framed and thus checked and directed by a system of institutions caring for distributional justice, equality of opportunity, gender mainstreaming and environmental protection as public goods the ordinary market mechanism cannot deliver. From the conservative side, the conservation of the common heritage of mankind and the corresponding respect for diversity have been included into the concept of sustainability, not only referring to the environmental heritage, but to cultural diversity as well. Target setting, land use planning etc. are commonplace all over Europe, but might be attributed some traditional leftist thinking (Spangenberg 1987).

All together, sustainability is no new ideology, has no blueprints for future societies, but some criteria for the future quality of life and the solidarity within and between generations. Following them would contribute to enhance the quality of life for the majority of people, offering a dignified life to all citizens. It would promote democracy, gender justice, transparency and participation, thus combating bribery and personal dependencies.

Sustainability is a tool for coalition building, for bringing together people caring for the future, and it would be no big surprise to see that this criterion is a progressive one, but non the less cross cutting above old border lines. Business people, administrators, trade unionists, human rights activists, environmentalists together can really get more things going than has frequently been possible in the old front lines (Spangenberg 1995).

9. New instruments are needed – how can we handle complexity?

Economy is a complex, interactive, self-organising system, based on and part of society, an even more complex, interactive and self-regulating system, which is in turn based on the environment, again a highly complex, interactive and self-organising system. Politics is almost by definition decision making based on incomplete information. However, the more incomplete the information, the higher is obviously the risk of failures (Spangenberg 2007b). Consequently, managing the multifold complexity of the environment-society-economy interaction by central decision making is bound to fail economically, socially and environmentally, since neither all the relevant information are available, nor is the relevance of the existing information obvious (Spangenberg 2007c). Central control of multi-level interactive complex systems means working against, not with the system. It is synonymous to efficiency avoidance, to human hubris. (8)

But given this insight, what can politics do, if direct intervention and steering have a high risk of counterproductive (and all too often counterintuitive) effects? We propose, again, a new way of thinking: more political responsibility with less intervention, setting framework conditions and let the self-organising mechanisms work, however led by the framework into a desired direction. Besides legal provisions, standards, spatial planning, land reform, etc., economic instruments like taxation, subsidies, tradable quota, grants and permissions, and institutional mechanisms like systems to improve income distribution, citizen empowerment, access to court, etc. could give the economic dynamics a direction without directly interfering with day-to-day decision making.

Directions must be long-term reliable and safely identified, from the citizens as well as from the business perspective. New economic models, less one-sided than the currently prevailing neo-classical one, including the role of labour, the value of nature, demand as well as supply side effects and the changing needs and preferences of people are one tool. Indicators are another one: they help assess policy measures once a direction has been determined. They can increase transparency and thus accountability, but are no substitute for detailed policy development.

10. Applying the concept

If sustainability is nothing but a framework, what effect does the new concept have in practice? Obviously, the implications will differ, according to the situation and the problems given, although some elements are of general importance and can be used to characterise the basic divergence between the conventional and the sustainable development approach.

⁸ Much of the current economic and political thinking is based on the machine paradigm of nature and society, based on Francis Bacon, Thomas Morus and other 17th and 18th century philosophers. It is outworn, and sustainability planners and conservationists pledging for large-scale management schemes of forest, nature and society can be regarded nothing but dangerous residuals of 17th century thinking.

Conventional development	sustainable development
centrally governed or planned	decentralised
government and business decisions	civil society decisions
precise goals	directions
standards, rules	diversity
top down plans	bottom up work, federalism, subsidiarity
political, military, economic elites dominant	participation, democracy, civil society
privileges growing, disparities	inclusiveness, sharing benefits, justice
secrecy	transparency
management	use and support of self-organising processes
growth	living with limits
allocation efficiency	distribution as primary economic concern
monetary values only	human/ethical, environmental, social and monetary values

*We have got time enough,
but no time to loose.
(Ernst-Ulrich von Weizsäcker)*

Dramatic changes are foreseeable in the scenarios presented, but they are no way more dramatic than those we have seen in the previous century: from early capitalism and peak colonialism, via industrialised Warfare (WW I) and murder (Fascism), from economic boom (the Roaring 20s) and bust (Black Friday 1929), to 1945 rebuilding Europe, Japan and China (with highly differing success). In this century, the communist block was born, grew, peaked and collapsed. The term "development" was not coined before the midst of the century, and "environment" not before the 1970s. The changes in this century can hardly be more dramatic than the ones we went through. We only have to give them a direction in order to make sure that we manage to re-link the social, economic and environmental dimension of development in a concept of sustainability. Sustainability is no incremental change, but a brand new way of thinking, of seeing and doing things, a new paradigm.

*Sustainable development it is not a mission impossible,
but a vision impossible to ignore.*

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