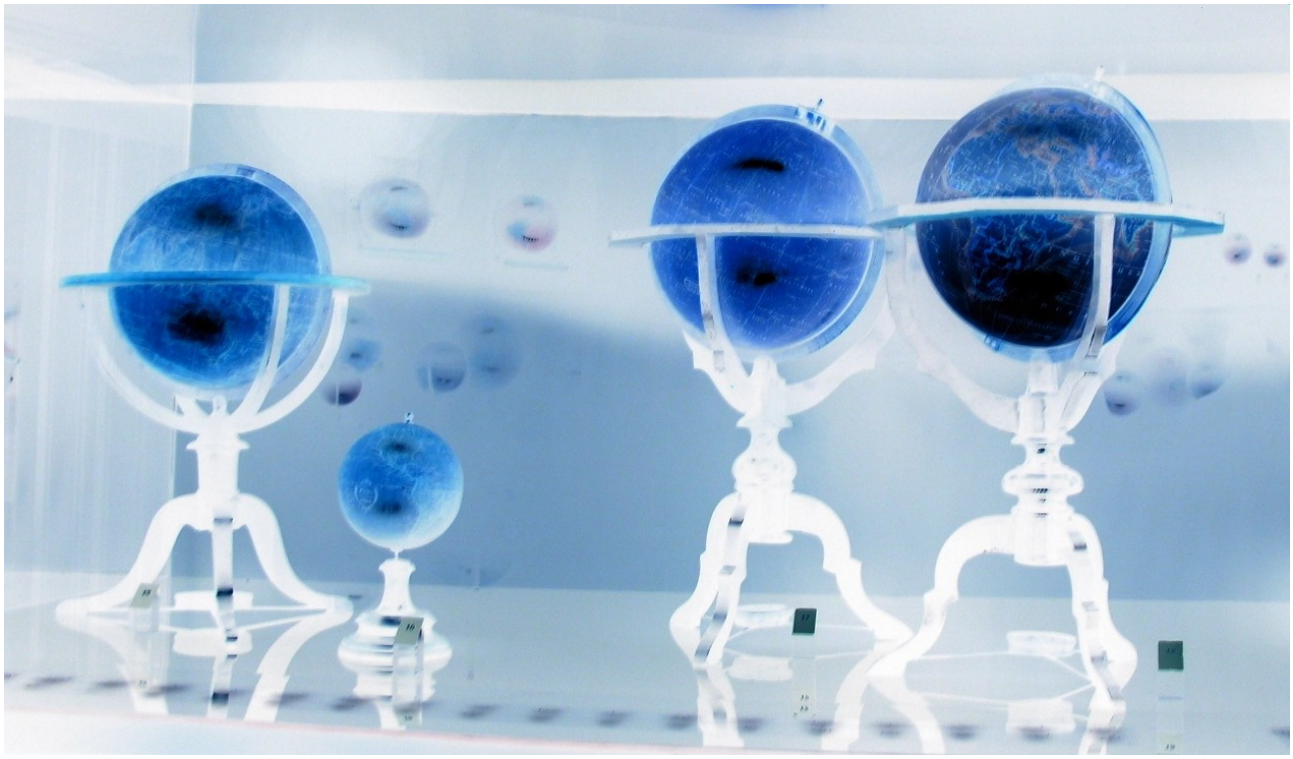
European Support Centre
Brussels-EU Chapter

Socially Sustainable Economic

Degrowth

Editors: Leida Rijnhout, Thomas Schauer



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Proceedings of a Workshop
in the European Parliament on April 16, 2009

hosted by Bart Staes MEP
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with contributions by

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Impressum:

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Layout and Production:

The Club of Rome - European Support Centre
Tuchlauben 8/15, 1010 Vienna, Austria
http://www.clubofrome.at

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Preface

The global economy has been growing for decades with a high speed, largely ignoring the warnings of "The Limits to Growth", the first report to the Club of Rome by Donella Meadows, Dennis Meadows and Jorgen Randers in 1972. But in a limited system, unlimited growth is impossible. It has to come to an end, the question is just when and how.

In spring 2008, a large international conference on degrowth was held in Paris. At that time, the economies were still growing. In 2009, the situation had completely changed. The world economy had entered a recession and economic degrowth happened all over the world.

But instead of a planned and managed degrowth, a deep crisis began, a chaotic and risky period of the global economy: social imbalance might further increase.

Could we have done it better and could we do it better in the future? Is there a possibility of socially sustainable economic degrowth? Which are the options for developed countries and how could developing countries, which still have to grow, react to the situation?

These are some of the topics which were discussed at a workshop in the European Parliament on April 16th, 2009, hosted by MEP Bart Staes and The Greens / European Free Alliance.

The editors of this conference documentation would like to thank very much the organizing partners and cooperating institutions: Research and Degrowth (Fabrice Flipo and François Schneider), Sustainable Europe Reserach Institute SERI (Stefan Giljum and Friedrich Hinterberger) and ULB/IGEAT (Tom Bauler).

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Options for Socially Sustainable Economic Degrowth

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Introduction

Key words of environmental politics of the past twenty years have a hollow ring in the present economic downturn. The IPCC scenarios never contemplated (self-imposed censorship?) a decline in the rich countries' GDP of 5 per cent and then a long period of non-growth as might perhaps be the case. This was not in the economists' and industrial ecologists' script. For twenty years, the orthodox slogan has been Sustainable Development (Brundtland Report, 1987) meaning economic growth that is environmentally sustainable. We know however that economic growth was not environmentally sustainable. The discussion on décroissance or degrowth that Nicholas Georgescu-Roegen started thirty years ago, is now a topic for discussion in the rich countries because "la décroissance est arrivée". Now it is the moment to substitute GDP by social and environmental indicators at the macro-level and to trace progress towards a socio-ecological transition by the behaviour of such indicators.

The economic crisis of 2008-09 affords an opportunity to put the economy of the rich countries on a different trajectory as regards material and energy flows. The objective in rich countries should be to live well without the imperative of economic growth.

Moreover, we are on the path for a reduction in world population once it peaks at 8,000 or 8,500 million, thereby reducing pressure on resources and sinks in the second half of the 21st century.

Georgescu-Roegen's explicit sponsorship of the concept of décroissance (degrowth) in 1979 (Grinevald and Rens, 1979), Herman Daly's views on the steady-state since the early 1970s, Serge Latouche's success in France and Italy in the last ten years insisting on economic degrowth (Latouche, 2007), have prepared the terrain. Now is the time in rich countries for socially sustainable economic degrowth reinforced by an alliance with the "environmentalism of the poor" of the South.

The economy has three levels

Frederick Soddy's "Cartesian Economics" was published in 1922, and "Wealth, Virtual Wealth and Debt" in 1926. He had a Nobel Prize in Chemistry and was a professor at Oxford. Soddy's teachings of the 1920s became easy to understand for ecological economists who read Georgescu-Roegen's "The Entropy Law and the Economic Process" (1971). Soddy's main point was simple and applies today. It is easy for the financial system to increase the debts (private or public debts), and to mistake this expansion of credit for the creation of real wealth. However, in the

industrial system, growth of production and growth of consumption imply growth in the extraction and final destruction of fossil fuels. Energy is dissipated, cannot be recycled. Real wealth would be instead the current flow of energy from the sun. Economic accounting is false because it mistakes depletion of resources and the increase of entropy for wealth creation.

The obligation to pay debts at compound interest could be fulfilled by squeezing the debtors for a while. Other means of paying the debt are either inflation (debasement of the value of money), or economic growth - which is falsely measured because it is based on undervalued exhaustible resources and unvalued pollution. Economic accounting does not properly count environmental damages and the exhaustibility of resources. This was Soddy's doctrine. He was certainly a precursor of ecological economics.

In other words, the economy has three levels. At the top there is the financial level that can grow by loans made to the private sector or to the state, sometimes without any assurance of repayment as in the present crisis. The financial system borrows against the future, on the expectation that indefinite economic growth will give the means to repay the interests and the debts. The financial system creates "virtual" wealth. Banks give credit much beyond what they have got as deposits, and this drives or pulls economic growth at least for a while. Then there is what the economists describe as the real economy, the so-called productive economy. As reported in The Economist (11th April 2009), Hakan Samuelsson, chairman of the German truck-making firm MAN, made this distinction very clearly when he said: "Creating value through financial leverage will be harder in future, so we can get back to our real job which is creating industrial value through technology, innovation, and efficient manufacturing".

When the economist's real economy grows, it indeed allows to pay back some or all the debt, when it does not grow enough, debts are defaulted. The mountain of debt had grown in 2008 much beyond what the increases in GDP could pay back. The situation was financially not sustainable. But the GDP itself was not ecologically sustainable. Down below, in the basement and foundations of the economic building, underneath the economists' real economy, there is the third level: the ecological economists' real-real economy, the flows of energy and materials (carried by trucks and ships). Their growth depends partly on economic factors (types of markets, prices) and in part on physical limits. At present, there are not only resource limits but also conspicuous sink limits. Climate change is caused mainly by the excessive burning of fossil fuels.

Green Keynesianism or Sustainable Degrowth?

The economic crisis of 2008-09 has brought John Maynard Keynes back to the main stage. In Keynesian language, we can say that economies have unused productive capacity, there is a gap between effective demand and full-capacity utilization of

labour and industrial equipment. Unemployment is increasing, and the appropriate remedy is to increase public expenditure, "deficit spending" as it is called. Public spending is good because it will indirectly lead to buying cars, and paying off mortgages and even buying new houses, getting such industries out of the doldrums. Governments are under pressure not only to increase spending for public investments or consumption but to refinance private debts to banks that will not be paid ("toxic assets"), converting to some extent such private debts into public debts.

Keynes wanted to get out of the crisis of 1929. The pre-Keynesian prescription of waiting for the market to reach equilibrium, waiting therefore for increasing unemployment to depress wages so much that employers would want to hire workers again, was a receipt for disaster. To make this point clear, Keynes famously said that he did not care what happened in the long run once the economy would recover from the crisis. In the 1950s economists such as Roy Harrod and Evsey Domar converted Keynesianism into a doctrine of long term growth. Provided there was enough private or public expenditure in consumption and investment to keep effective demand close to potential supply at full capacity utilization, the economy would not fall into crisis. Meanwhile, the investment would have increased potential supply, so that new expenditure would be required in the next round in order for the economy not to fall into a crisis, in a virtuous path of continuous growth. Such economic models were metaphysical in the sense that they did not consider exhaustible resources or pollution.

Keynesianism was triumphant in the 1960s, the era of very cheap oil. Later, both short-run and long-run Keynesianisms were left aside. Neoliberal thought resurrected. The neoliberals, like Hayek, thought that markets knew much more than the state. But one unanswered objection to neo-liberalism raised by environmentalists was that the market did not value future, inter-generational scarcities (as Otto Neurath had already pointed out in Vienna in the 1920s against Von Mises and Hayek in the socialist calculation debate, cf. Martinez-Alier, 1987).

In the crisis of 2008-09, neoliberalism is suffering from ill health. Some bankers are asking for the State to take over their banks. Keynes has come back, reincarnated in Stiglitz and Krugman. As ecological economists we must ask, is this a short-run Keynes to get out of the worst aspects of the crisis, or also a long-run Keynes to get into a path of continuous economic growth?

Those who propose a short-run Green Keynesianism or a Green New Deal as a temporary measure, are close to ecological economics. If public investment must grow, as indeed it must contain the rise in unemployment, it is better to channel it to the welfare of the citizens and to "green" energy production, than into motorways and airports. However, Green Keynesianism should not become a doctrine of continuous economic growth. In rich countries a slight economic decline is already taking place and it could easily be socially sustainable. We are not in the 1930s – in Europe we have economies with incomes per capita of over 25,000 euros. Going back ten per

cent (with a corresponding decrease in energy and material flows) can be managed if institutions of redistribution are in place. Thus, we shall enter into a socio-ecological transition. There is already an agreement in Europe for the carbon dioxide emissions be cut by 20 per cent compared to 1990. In fact, emissions and GDP are in early 2009 decreasing faster than required to reach this target.

The feminist movement made clear many decades ago that GDP does not value what is not in the market, like unpaid domestic work and voluntary work. A society rich in "relational goods and services" would have a lower GDP than an (impossible) society where personal relations would be exclusively mediated by the market. The sustainable degrowth movement insists on the non-chrematistic value of local, reciprocal services. Moreover, economists (or rather, psychologists) now agree that above a certain threshold GDP growth does not lead necessarily to greater happiness. This research updates the literature on the so-called Easterlin Paradox. Therefore, GDP should no longer have the dominant position in politics that it now has, to the detriment of environmental and social considerations.

However, degrowth might lead to social problems that we must face for the degrowth proposal to be socially accepted. If labor productivity (e.g. number of cars that a worker produces per year) grows by 2% annually, but the economy is not doing the same, this will lead to increased unemployment. The answer must be twofold. Increases in productivity are not well measured. If there is replacement of human energy by machines, does the price of energy take into account the depletion of resources and negative externalities? We know that it is not so. Furthermore, we should separate the right to receive remuneration from the fact of being employed. This separation already exists in many cases (children and young people, pensioners, persons receiving unemployment benefits), but it should be extended further. We have to redefine the meaning of 'job', taking into account the unpaid domestic services and the voluntary sector and we must introduce or expand the coverage of a universal Basic Income or Citizen Income. If a green Keynesianism is now relevant, even more relevant would be another Beveridge report, in the perspective of degrowth, an extension of the welfare state giving also much room to local initiatives.

Another objection is raised. Who will pay the mountain of debts, mortgages and other debt if the economy does not grow? The answer must be that no-one will pay. We can not force the economy to grow at the rate of compound interest at which debts accumulate. The financial system must have rules different from today. In the United States and Europe what is new is not, therefore, Keynesianism, not even Green Keynesianism. What is new is a growing social movement for sustainable degrowth. The crisis opens up opportunities for new institutions and social habits.

The peak in carbon dioxide emissions has been reached

The economic crisis will mean a welcome change to the totally unsustainable increase of carbon dioxide emissions. The Kyoto objective of 1997 was generous

with the rich countries because it gave them property rights on the carbon sinks and the atmosphere in exchange for the promise of a reduction of 5 per cent of their emissions relative to 1990. This modest Kyoto objective will be fulfilled more easily. One could easily foresee by October 2008 that the carbon trade would collapse unless lower caps were adopted.

Moreover, there is a historic trend towards increasing energy costs of obtaining energy (a lower EROI). Brazil's recent discovery of 30,000 million barrels of oil (one year's of world consumption) thousands meters under the sea, might become a bottomless sink for energy and money. Coming down from the peak of the Hubbert curve will be politically and environmentally difficult. Conflicts arise in the Niger Delta and in the Amazonia of Peru and Ecuador against companies such as Shell, Repsol, Oxy. Appeal to some other energy sources (agro-fuels, nuclear energy) will compound the difficulties. Wind and photovoltaic energy are fortunately increasing. They will help to compensate for the dwindling supplies of oil over the next few decades. Coal supplies are increasing (they already grew seven times in the 20th century) but coal is noxious locally, and also globally because of carbon dioxide emissions.

The world peak in carbon dioxide emissions has been reached because of the economic crisis. Emissions are now (finally?) going down. This might become a unique historical chance.

In May 2008, it was announced that carbon dioxide concentration in the atmosphere was at a record level of 387 parts per million (ppm) according to the measurements at the Mauna Loa observatory in Hawaii. This meant an increase of 30 per cent above the level of 300 ppm that Svante Arrhenius used in his article of 1895, when he pointed out that burning coal would increase the concentration of carbon dioxide in the atmosphere and would increase temperatures. Between 1970 and 2000, the concentration had increased by 1.5 ppm per year, since 2001 and until 2007 growth in concentration reached 2.1 ppm. In early 2008, the world was still travelling at all speed towards 450 ppm to be reached in about thirty years. The great increase in the prices of oil, gas, and other commodities until July 2008, and the economic crisis in the second half of 2008 and in 2009, stopped economic growth and changed the trend in carbon dioxide emissions. From the point of view of climate change, the economic crisis should certainly be welcome.

Carbon dioxide concentration in the atmosphere will still increase, although not so quickly. Emissions are still much higher than the absorption capacity of the oceans, the soils and the new vegetation. The IPCC argues in its reports that emissions should go down by 60 per cent (and not by the paltry 2 or 3 per cent likely to occur in 2009 that hopefully signals a permanent change in the trend). The objective of 60 per cent reduction is far from today's reality, and also from the Kyoto and likely post-Kyoto comitments. Nevertheless, the IPCC recommendation is today closer to implement-ation than previously.

It must be emphasized that the market for carbon dioxide allowances is an artificial market. The supply depends on the political will to restrict emissions, not down to the necessary level (e.g. 60 per cent reduction), but what is seen as politically and economically bearable in a mindset that assumes continuous economic growth even in the richest countries.

"Hot air" is a name for the overflow of permits from Eastern European countries whose economies decreased after 1990 (and whose energy efficiency improved), such as Russia, Poland, Romania, Ukraine. In the Kyoto Protocol of 1997 the European Union gave itself a generous quota (equal to 1990 emissions minus a reduction of about 8 per cent for 2012), therefore large amounts of "hot air" will now appear also in western and central European countries such as Germany (that is already on the Kyoto path and whose economy seems to be decreasing by 5 per cent in 2009). The creation of cheap "hot air" is counterproductive for further reductions of emissions.

Towards Copenhagen 2009

The GDP of the world will decrease by one or two per cent in 2009, while economic degrowth in the United States, the European Union and Japan will be larger than this. Between August 2008 and March 2009, consumption of gasoline in the United States decreased not less than ten per cent. Emissions from these countries plus Russia will decrease by not less than 5 per cent. This is really high in comparison with the objectives that were admitted politically up to now. However, because of a problem of mental censorship, neither the IPCC nor Lord Stern's report, had contemplated a scenario of slight economic degrowth in the world economy followed by a period of non-growth in the European Union and the United States. This is the scenario that would convert the carbon dioxide emissions peak of 2007 into a unique historical event.

The economies of South America, that in the neoliberal period "reprimarized" themselves and became (again) raw material exporting economies in greater amounts than ever before, now will pay an economic price. Their growth is stopping because of the economic crisis, and declining terms of trade.

Increased carbon dioxide emissions from China and India are expected, more or less in line with economic growth in India (of about 5 per cent), and a little lower than economic growth in China. India's emissions are per capita much below the world average (India has over 15 per cent of world population and about 4 per cent of emissions). China's emissions are per capita much closer to the world average. As a country it is now the largest emitter. Increased emissions in India, China, Indonesia and a few other countries whose economies are growing in 2009 will not compensate for the decrease in the USA, the European Union, other European countries and Japan. There is a chance that 2007 was not an isolated peak, but on the contrary a historical peak, a unique event.

How will such developments be received in the climate change conference in Copenhagen in December 2009? Will the positive effects of the crisis be acknowledged? Will a slight economic degrowth and a socio-ecological transition towards a steady state in the rich economies be accepted as a plausible and beneficial scenario? Or, on the contrary, will carbon emissions recover and increase again with economic recovery?

From the South: a refusal to provide cheap commodities?

With the economic crisis, will now be an end to the boom in exports of energy and materials thus diminishing pressures at the commodity frontiers? Grandiose plans for more and more exports from Latin America were pushed particularly by President Lula of Brazil. More roads, pipelines, harbours and hidrovias, more exports from Latin America of oil, gas, coal, copper, iron ore, soybeans, cellulose, biodiesel and ethanol, this was the credo of President Lula. In October 2008, and in total opposition to the views of Via Campesina and the MST in Brazil, Lula was still pushing for generally opening the world markets to agricultural exports. He went to India to try and increase the rate of farmers' suicides by asking for the liberalization of agricultural imports and exports in the Doha round. True, the export boom gave Lula money for social purposes and increased his popularity. Petrobras was not less dangerous to the environment and to indigenous peoples of Latin America than Repsol or Oxy. Lula's obsession with primary exports made him do nothing about deforestation of Amazonia and drove environment minister Marina Silva to resign in 2008. What will the strategy of President Lula and the Latin American left be after the crash of 2008-09? Lula's insistence on the virtues of ethanol for export is misguided. Agrofuels have a low EROI (especially taking into account the vegetation that already existed before agrofuels occupy the land), they increase the HANPP to the detriment of the biomass need of other species, and they imply large unpaid-for "virtual" water exports.

In fact, the crisis should be an incentive to focus on internal development, and not to sell the environment so cheaply. The prices of commodities have gone down, and moreover other values (social, environmental) have been sacrificed. In this respect, some proposals from Ecuador in 2007 (supported to a degree by president Rafael Correa, who is a traditional left-wing economist more than an ecological economist), are interesting. At the November 2007 OPEC summit meeting in Vienna when Ecuador came back to this organization, OPEC approved in principle a resolution in support of the Yasuni-ITT proposal (to leave oil in the ground in a territory with uncontacted indigenous people and of great biodiversity value), and it also voiced interest in the so-called Daly-Correa ecotax. The tax, proposed by president Correa at that OPEC meeting, is based on the concept by Herman Daly in a speech to OPEC in 2001 (Daly, 2007). OPEC countries have dismissed the existence of the enhanced greenhouse effect. This eco-tax would show their concern for climate change. An OPEC imposed carbon tax at the oil wellhead instead of attempted regulation of emissions from the tailpipe (by carbon taxes or cap-and-trade) would be fairer to

exporting countries and perhaps more effective in reducing global carbon dioxide emissions. This ecotax would make acceptance of climate change easier for oil exporting countries (and also, if imitated, for gas and coal exporting countries). The principle is, export less at a higher price. Money generated from the tax would go towards financing an energy transition away from fossil fuels, towards helping poor people around the world, and towards helping countries like Ecuador and Nigeria to keep oil (or gas or coal) in the ground when located under fragile and culturally sensitive ecosystems.

While in the 1920s, commodities decreased in price a few years before 1929, this time the increase in commodity prices (helped also by misguided agro-fuel subsidies, by the OPEC cartel, and by financial investment in the futures market) continued for some months after the strong decline in the stock exchange had started. However, in late 2008 commodity prices declined because of declining demand. The Baltic Dry Index measures shipping rates. It declined precipitously since July 2008 partly because of decreasing Chinese imports of iron.

A refusal from the South to provide cheap commodities to the industrial economy, imposing natural-capital depletion taxes and export quotas, would also help the North (including some parts of China) in its necessary long-term path towards an economy that uses less materials and energy.

Bottom-up neo-Malthusianism

The socio-ecological transition towards lower levels of use of energy and materials will be helped if the world demographic transition is completed, and even more, if population after reaching a peak at 8,500 million inhabitants goes then down to 5,000 million, as some projections indicate (Lutz at al, 2001). Remember that world population increased four times in the 20th century from 1,500 million to 6,000 million. Environmental awareness might influence birth-rates (as in the European Neo-Malthusianism of 1900 and in China since 1980).

The importance of population growth in the increase of Social Metabolism is obvious. Paul Ehrlich's equation I = PAT could be applied historically, with an adequate indicator for T (technology).

There were many debates around 1900 on "how many people could the Earth feed" focusing only on the needs of the human species. The Neo-Malthusians of the late 19th and early 20th centuries were political radicals and feminists. There was a large difference between the original Malthusianism of T.R. Malthus and the neo-Malthusianism of 1900. Scholarly historical work on neo-Malthusianism has clearly documented the radical, feminist movement in favour of limiting births in Europe and the United States around 1900. In France this movement took the name of la "grève des ventres". In South India, the "self-respect" movement launched by E.V. Ramasamy (called Periyar, a Tamil thinker and political activist, 1879-1973) took a

similar line. In Brazil the feminist neo-Malthusian anarchist Maria Lacerda de Moura wrote: “Love one another more and do not multiply so much”. This intellectual and social history allows me to present the following definitions.

MALTHUSIANISM: population undergoes exponential growth unless checked by war and pestilence, or by chastity and late marriages. Food grows less than proportionately to the labour input, because of decreasing returns. Hence, subsistence crises.

NEO-MALTHUSIANISM OF 1900: human populations could regulate their own growth through contraception. Women’s freedom was required for this, and desirable for its own sake. Poverty was explained by social inequality. “Conscious procreation” was needed to prevent low wages and pressure on natural resources. This was a successful bottom-up movement in Europe and America against States (which wanted more soldiers) and Churches. (Ronsin, 1980, Masjuan, 2000).

NEO-MALTHUSIANISM AFTER 1970: a doctrine and practice sponsored by international organizations and some governments. Population growth is seen as a main cause of poverty and environmental degradation. Therefore States must introduce contraceptive methods, even without women’s prior consent.

ANTI-MALTHUSIANISM: the view that assumes that human population growth is no major threat to the natural environment, and that it is even conducive to economic growth as Esther Boserup and other economists have argued

Sustainable degrowth in the North and environmental and social justice everywhere

A transition to sustainability requires new thinking on demography and on the socio-ecological transition. Marina Fischer-Kowalski and Helmut Haberl of the IFF in Vienna, influenced by the work of environmental historian Rolf Peter Sieferle and by ecological anthropologists, ecological economists, and industrial ecologists, recently edited a book entitled “Socio-Ecological Transitions” (Fischer-Kowalski and Haberl, 2007). From hunter-gatherer societies to agricultural societies to industrial societies, the authors of this book uncover quantifiable patterns of use of energy and materials, population densities, land use and working time. They try also to distinguish possible from impossible futures. For instance, is it plausible to think of a world of eight billion people with an energy expenditure of 300 GJ and a use of materials of 16 tons per capita/year? Are we on the contrary on the verge of a socio-ecological transition that will reduce energy and material use in the rich economies even if this implies economic de-growth?

The transition needs a reform of social institutions (to deal with unemployment), and also a reform of financial institutions to stop the financial level of the economy from growing without reference to the underlying physical realities.

At first sight, Southern countries have something to lose and little to gain from Degrowth in the North because of fewer opportunities for commodity and manufactured exports, and less availability of credits and donations. But, the movements for Environmental Justice and the "environmentalism of the poor" of the South are the main allies of the Sustainable Degrowth movement of the North. These movements complain against disproportionate pollution (at local and global levels, including claims for repayment of the "carbon debt"), they complaint against waste exports from North to South (e.g. the "Clemenceau" and so many other ships to the wreaking beaches of Alang in Gujarat, or electronic waste), they complain against biopiracy, and also against "Raubwirtschaft", i.e. ecologically unequal exchange, and the destruction of nature and human livelihoods at the "commodity frontiers". They also complain against the socio-environmental liabilities of Transnational Companies.

There could be a confluence among conservationists concerned with the loss of biodiversity, the many people concerned with climate change who push for solar energy, the socialists and trade unionists who want more economic justice in the world, urban squatters who preach "autonomy", agro-ecologists, neo-rurals, and the large peasant movements (as represented by Via Campesina), the pessimists (or realists) on the risks and uncertainties of technical change (post-normal science), and the "environmentalism of the poor" that demands the preservation of the environment for livelihood. The international environmental justice movements have as objective: an economy that sustainably fulfils the food, health, education and housing needs for everybody, providing as much "joie de vivre" as possible. What is needed is an Aristotelian "buen vivir" (as the World Social Forum proclaims) guided by oikonomia rather than chrematistics.

Sustainable Degrowth of Production and Consumption Capacities

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There are good reasons to think that the concept of “green growth”, “green new deal”, “sustainable development”, “cleaner technologies” alone are not adequate for heading towards a more sustainable society. These concepts do not take into account the idea of limits of the availability of natural resources and the idea of reduction of the societal capacity to extract natural resources.

Developed countries, or more precisely the so-called "global North"(1), even when guided by these concepts, are likely to continue developing policies that increase their capacity to extract natural resources through production and consumption, referred here as "Economic Capacity" (Production and Consumption Capacities). Another concept (Flipo & Schneider 2008) based on the Economic Capacity reduction, needs to be introduced, in order to avoid failures of "solutions"(2) (due to rebound effect) or/and crises (due to over-capacity).

1. Failure of solutions due to a macro rebound effect when the Economic Capacity is maintained

Solutions, and especially the ones involving technological efficiency improvements (in terms of material, energy, time...), would fail to bring absolute reduction of material, energy, time use... if a high capacity to produce and consume is simply maintained.

A typical example of a "micro" rebound effect is the case of reduced fuel spendings on an efficient car that are allocated to long distance travels: efficiency savings are used for further consumption. This effect is not taking place on the micro level only. It occurs at the level of society as a whole. This "macro" rebound effect, or Jevons paradox (Jevons 1866, Alcott 2005) can be analyzed through different limiting factors.

The infrastructure rebound effect is one example. Infrastructure is a limiting factor. Production and consumption would be limited if there is insufficient infrastructure to process material, energy and areas, to extract, transport, distribute, transform, store, consume or treat waste. Maintaining the same level of infrastructure, and improving the efficiency of its use would either lead to unused infrastructure capacity or to its reallocation for new consumption and production (See Figure 1). As an illustration, maintaining large road width does not resolve traffic congestion. The only way to reduce traffic congestion is to introduce a traffic limit, rather than maintaining high road capacity (Schneider 2002).

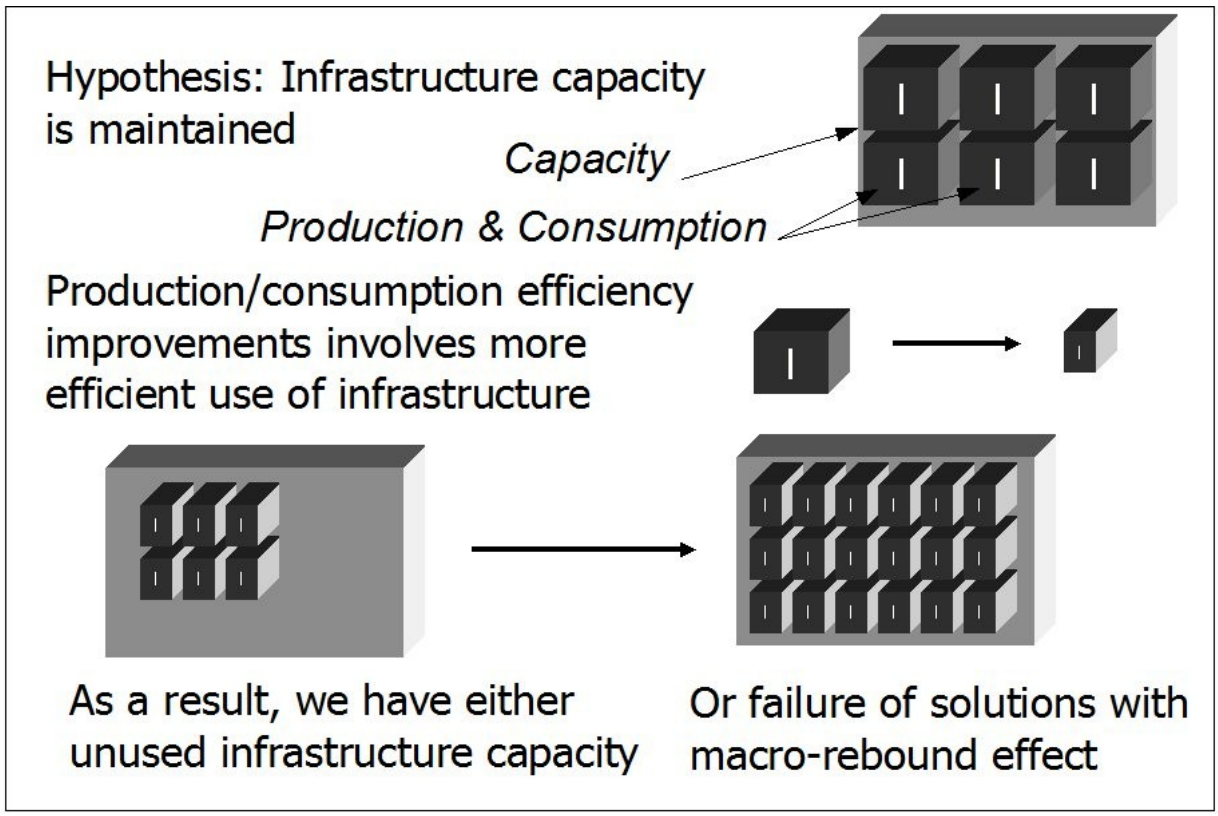

Figure 1: Infrastructure rebound effect; as infrastructure capacity is maintained, reducing the infrastructure use enable increase of production and consumption.

Another example is the time rebound effect. When the length of the time dedicated to working or consuming is maintained, and labor productivity and time efficiency increases (involving faster consumption and production), more time is made available for work and consumption. In that case, there is unused time capacity that can be used for additional work and consumption. Labor productivity, for example, has increased by a factor from 30 to 50 in the last century, but this did not lead to an equivalent size reduction of working time. The gains have mainly been used for increasing production.

Financial capacity is another example of the rebound effect at play. If solutions involve a reduction of production and consumption costs, the savings free financial resources, leading to a macro level rebound effect. If the capacity to buy natural resources in developed societies remains high and too many people claim real wealth (in the form of natural resources), an ecological disaster and an economic crisis are likely to occur. The simple reasons for that is the mismatch between real wealth and the financial capacity in the world.

The capacity to produce and consume may also increase in other ways:

- ► regarding unawareness: being unaware of impacts eases growth of production and consumption,
- ► regarding inequality: the attractive lifestyles of the privileged is an incentive to consume and produce more,

- ► deregulation in the social, environmental or economic sphere may enable conspicuous production and consumption patterns,
- ► unfulfilled needs resulting from short lived products (planned obsolescence) or the impossibility to share leads to an increase of production and consumption needs,
- ► regarding access to natural resource. It is nevertheless known that limits to natural resource extraction exist. Peak oil and peak of resource extraction for several commodities are about to be reached (Cohen 2007).

2. Crises due to over-capacity when Production and Consumption Capacity is maintained.

If the Economic Capacity is unused, a crisis occurs. A crisis takes place when a there is gap between capacity and the actual production and consumption. This crisis is nothing new, it is being experienced within the "global South" with misery. Misery is about little production and consumption in a world of high capacities. This is what happens when you have no savings in a large financial economy; when you have no work in a place where workers overwork; when you have no car in a highly car-dependent environment... Economic recession intensifies when consumption and production go down while capacities to produce and consume are maintained the same.

Since the capacity to access natural resources is diminishing, there is at the very least one reason to expect that the crisis would be inevitable if other capacities remain high.

Therefore maintaining high Economic Capacity, in a "steady state" at the current high capacity level (in the global North), is not a solution.

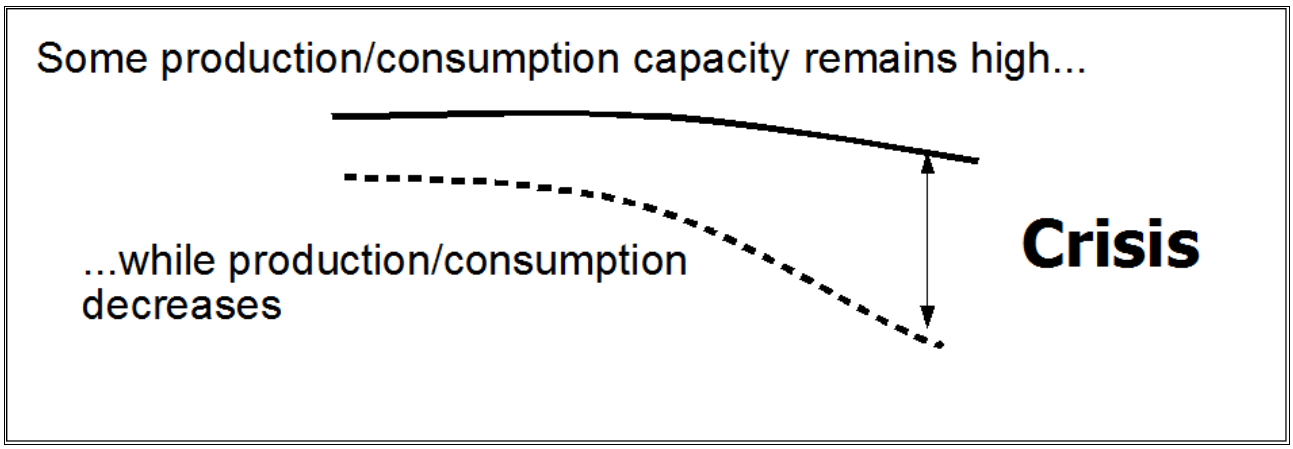

Figure 2: Crisis with over-capacity

3. Growth policies are designed to increase Productive and Consumption Capacities in the global North

In reality, the capacities to consume and produce have been increasing (!). Governments and international institutions push forward economic growth policies that promote the increase of the Economic Capacities. It should be noted that economic growth is meant here as a growth of the size of the economy and not an increase of welfare, as frequently inferred.

Stimulation packages, later retirement, support for overwork, subsidies for resource extraction, transport infrastructure planning, barriers to mutualisation, labor standards deregulation, advertising and promotion of consumption are a few of the growth policies, commonly used. These policies expand the Economic Capacity, which leads to additional production and consumption. Enlarging the capacity to produce and consume, however, increases also the capacity to destroy resources and creates negative externalities.

Facing the 2008-2009 crisis national government and G20, have proposed stimulation packages that increase public debts at unprecedented levels. These debts would theoretically give the ability, for example, to buy all the petrol at a peak production of 87 million barrels a day, for the next two years at the price of $50 a barrel. The stimulation packages therefore maintain or increase the capacity to produce and consume.

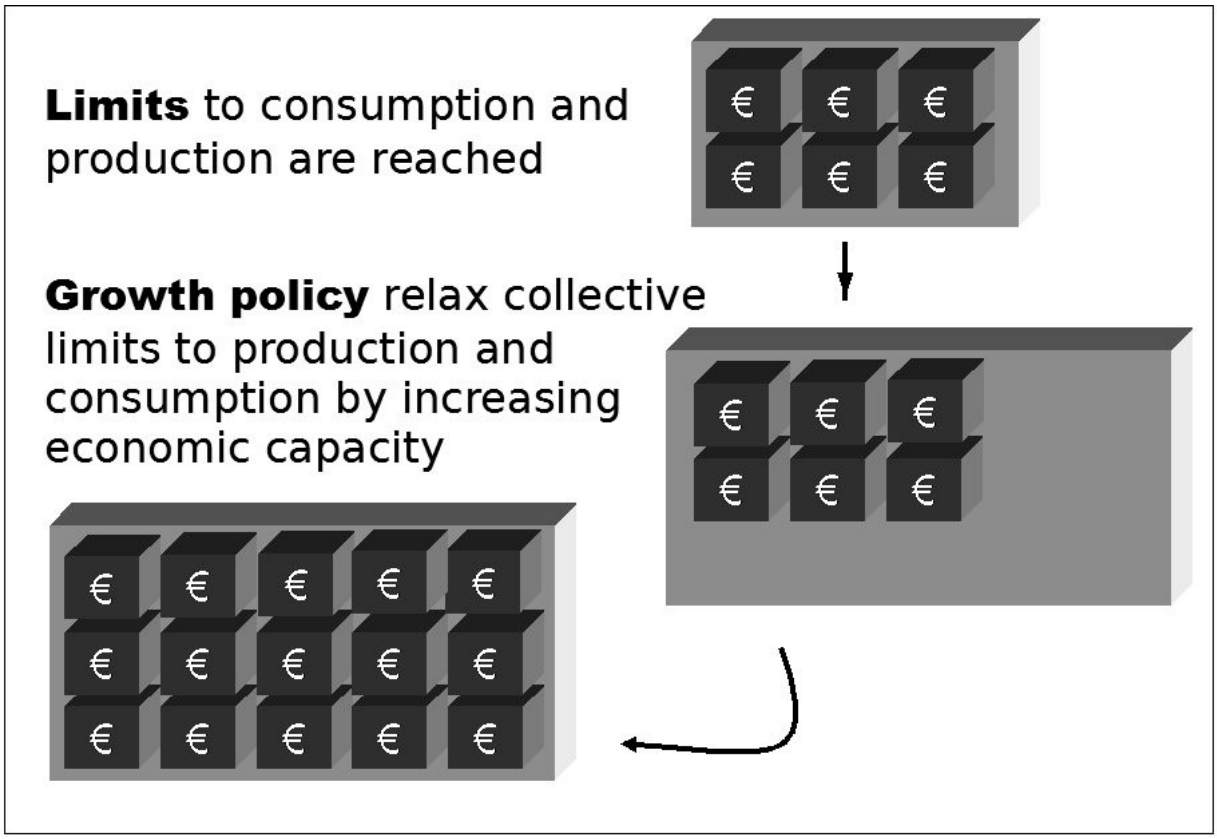

Figure 3: Growth policy increases economic capacity.

4. Sustainable Degrowth of Production and Consumption Capacity (Sustainable Degrowth of Economic Capacity)

The intention here is to explore other tracks, where increase of welfare (but also well-being, equity, ecological sustainability) is associated with degrowth. The following actions need to be undertaken: development of frugal innovation, or innovations that involve a reduction of multidimensional Economic Capacity, promotion of collective reduction of purchasing power (in the global North) and introduction of social justice measures and redistribution of wealth to reduce inequalities.

On the one hand, degrowth is a slogan to challenge the idea that a consensus for continuation of economic growth in the global North exists. Degrowth is challenging the inclusion of human relations and sharing within the economic sphere.

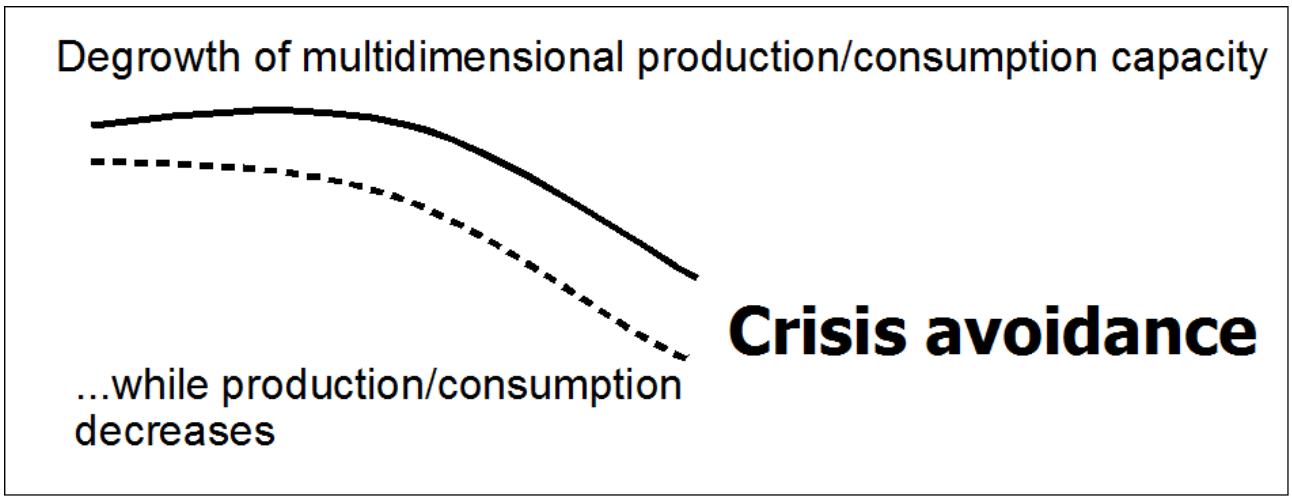

Figure 4: Crisis avoidance when economic capacity decreases while production/consumption decreases

Degrowth is also about a reduction of the size of the global North economies. It is about a reduction of the capacity to extract resources (and of resource extraction in general) that is fair (reducing inequalities, or at least making equity possible), balanced (between production and consumption) and democratic (or chosen); but also convivial, ecological, social, positive, cultural; as well as innovative, diversified, targeted, local & global and transitory.

A vision of a degrowth transition would include:

- Lower and different production and consumption in the “global North”, higher and different production/consumption in the “global South”
- Degrowth of urbanization surfaces ("Urban de-sprawl"), more preserved spaces
- Waste and incineration degrowth, more reuse, less resource use
- Degrowth of living spaces per person and empty houses and increase of co-housing
- Less cars, trucks, planes, roads and airports, more bikes and public transport
- Speed and distance reduction, more localisation and conviviality

► More face to face, less “screen to screen”
► Less supermarkets more relocalised production and consumption
► Tourism degrowth, more local and slow travel
► Agro-industry degrowth, less agrochemicals, more organic, less animal products
► De-growth of energy use with less fossil energy and nuclear, more renewables
► Reducing bulldozers, explosives and other extractors
► Less advertising, more independent participatory information medium
► Lower natality rates, more health and less misery

Here are examples of policies that could be introduced in order to support the positive initiatives on the local level: collective reduction of purchasing power for natural resources (including redistribution) through virtual economy exit, monetary degrowth & localizing; reduction of speed limits, 3-days working week, reducing shop opening hours; reducing extractive tools, material certificates, mineral and biological sanctuaries; reducing infrastructure to produce and consume, reducing roads, road capacity, airports, industrial production, and favoring local economy to international trade; institutionalization of more common goods & public spaces; limits to advertising, and internalizations; basic income, valuing unpaid work, reduction of inequalities of salaries, maximum income, non recognition of fiscal paradise credits; better quality, social, environmental standards.

Solving problems from the local level is deemed to fail if the institutions do not support the process in some way. This is especially relevant in a time of crisis when people experience a reduction in consumption, car and energy use. Support of policy makers about that should be therefore provided.

Paris Degrowth Conference

The word “degrowth” was made popular at the first international conference on “Economic Degrowth for ecological Sustainability and social Equity” in April 2008 in Paris. For two days, 130 multidisciplinary scientists made more from 90 presentations on economic degrowth. Please find below extracts from the conference declaration (available at http://events.it-sudparis.eu/degrowthconference/en/):

1.8 If we do not [bring] global economic activity into line with the capacity of our ecosystems, and [redistribute] wealth and income globally so that they meet our societal needs, the result will be a process of involuntary and uncontrolled economic decline or collapse, with potentially serious social impacts, especially for the most disadvantaged. (...) 2. We therefore call for a paradigm shift from the general and unlimited pursuit of economic growth to a concept of “right-sizing” the global and national economies. (...) 3. The paradigm shift involves degrowth in wealthy parts of the world. (...) 3.3 The objectives of degrowth are to meet basic human needs and ensure a high quality of life, while reducing the ecological impact of the global economy to a sustainable level, equitably distributed between nations. This will not be achieved by involuntary economic contraction.

Notes & references

(1) The global North includes the influential & affluent within the South, but not those lacking basic necessities within the North

(2) "Solutions" in this text refer to solutions to environmental, social, health, or equity problems with technological efficiency, lifestyle change, governmental measures.

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Degrowth or Reduction of the Ecological Footprint in Order to Fight Poverty

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The concept of de-growth has constantly been changing its meaning in the past years. Inspired by the philosophy of Georgescu Roegen, the 'décroissance' of Latouche was often understood as an anti-modern, anti-scientific and anti-technological idea. Later, it was somewhat softened and the focus was on an 'ethical' approach of the economy and on 'happiness' as its main characteristic and indicator. To-day, it more and more means a departure of 'growth' as the main objective of economic activities. In my opinion, only this last interpretation is acceptable though it can easily and usefully be replaced by 'reduction of the ecological footprint, particularly in order to fight poverty and inequality.

It goes without saying that the ongoing climate change and the depletion of natural resources do oblige us to re-think the concept of economic growth, as well as our non sustainable production and consumption patterns. The wealthy people of this world, mainly living in the global North, will have to reduce their non sustainable consumption, that is every consumption that cannot be generalized throughout the whole world population within the framework of existing or renewable resources. Does it mean there necessarily has to be less growth in the global North? It is certainly feasible to distribute production and consumption, and it is also perfectly feasible to promote a de-coupling of growth and resource consumption. The services sector is a perfect example of what can in many cases be promoted as 'green growth'. Perverse impacts are not caused by growth as such, but by a growing ecological footprint.

The distinction between growth and a growing ecological footprint is particularly important because of the existing poverty and inequality in today's world. A redistribution of incomes in the absence of growth is only possible by taking from the rich and giving to the poor, which is politically very difficult. A redistribution of industrial activities is another way to solve the poverty and inequality problem since up till now, Africa – to give but one example - is mainly the victim of its colonial past and its neoliberal present. Unfair so-called 'free-trade' agreements are aimed at strengthening the unbalanced power and wealth relations. If Africa wants to exit the poverty impasse, it certainly needs growth and the development of its productive capacities. This is exactly what China did, though without monitoring its ecological footprint. However environment-friendly we want our economic activities to be, there is no way that we can refuse Africans, Asians and Latin Americans to enjoy the rights and material comfort of the global North. Either the global North accepts to lower its prosperity levels or it finds ways to safeguard and generalize this prosperity with lower resource consumption levels. In all cases, economic activities may continue to grow though they will have to be better distributed and the global ecological footprint will have to be monitored and in certain cases reduced.

A fragmented discourse

There are two reasons why the ecological debate is often so difficult and why so many misunderstandings occur. The first reason is the lack of sufficient interaction between, on the one hand, engineers, economists and physicists that work very often with mathematical models in order to give evidence of the urgency of ecological change and, on the other hand, sociologists and political scientists that look at the social and political relations and see the difficulties of urgent change. A second reason is linked to the lack of consensus and the lack of a 'common interest'. Many people may know that the whole world population is concerned by the consequences of climate change and resource depletion, but too many people still think they can escape these consequences. They are not willing to accept a responsibility to protect all human life. If African countries were able to develop a decent regulation for their labour markets and for the exploitation of their diamonds, their copper or their coltan, it would be a lot easier to solve the poverty problem. Prices would most probably rise and it also most probably would lead to a lesser consumption. In other words, the ecological problem is closely related to the social problem and here again the ecological perspective on the social problem is too narrow. Poor people are the main victims of environmental degradation. We do not have to protect the environment in order to help poor people, but we have to help poor people in order to protect the environment. Again, what is needed is not so much less growth but less resource depletion and a reduced ecological footprint. Oil consumption in the global North was reduced in 2007 precisely because of the sharp price hikes.

What is needed, then, is not a reduction of growth, but a social green deal that promotes the production of sustainable activities and puts a brake on resource depletion. Social programmes are an inherent part of such a deal.

A new paradigm and new indicators

De-growth, then, is not what should guide us to the future. We certainly do need a new economic paradigm that stops to see growth as the only objective of economic activities and that allows for reducing our ecological footprint. It means we will finally have to take into account the contributions of sociologists and political scientists that point to the importance of democracy and human rights, the environment and gender equality. It also means we have to stop talking of 'nature' as if all natural phenomena where inherently positive. It means we will have to politicize the debate and see which and whose interests are at stake. We have to look at certain so-called basic principles of our economic theories like the illusion of the 'homo economicus' and the rational human being that only pursues its self-interest. It obviously also means we will have to give up our basic indicator of gross domestic product that adds productive activities to negative externalities and does not take into the environmental losses and the non-paid work of women.

We have to re-think our economic theories and put into question some of the most obvious ‘truths’. The current economic crisis is an excellent opportunity to change directions and to promote a social green deal that will allow for sustainable growth in the global North and that can help to solve the social problems of poverty and inequality in the global South.

What is needed is a careful analysis of what is possible and sustainable and what is not. De-growth in absolute terms is not necessary. A selective distribution of productive capacity, the development of sustainable services and programmes for social progress can make another world possible.

More than 30 years ago, the Club of Rome recommended to stop growth in order to protect the environment. Ten years ago, the World reversed this reasoning and told us to protect the environment in order to safeguard growth. Today, we know that growth and environmental protection are compatible and sustainable if we manage to be very careful and selective. It is the only way towards more progress, emancipation and freedom for all.

Resource Use and Ecological Limits to Growth: Implications for De-Growth

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1. Current trends of natural resource use

Due to growth of world population, continued high levels of consumption in the developed world combined with the rapid industrialisation of countries such as China and India, worldwide demand on natural resources and related pressures on the environment are steadily increasing. Renewable resources, and the ecological services they provide, are at great risk of degradation and collapse (see, for example, the latest "Global Environmental Outlook" by UNEP, 2007). The depletion of these ecological assets is serious, as human society is embedded within the biosphere and depends on ecosystems for a steady supply of the basic requirements for life: food, water, energy, fibres, waste sinks, and other services. At the same time, extraction of many non-renewable resources is already reaching or near a peak; some authors even describe today's situation as "peak everything" (Heinberg, 2007).

In 1980, around 40 billion tons of raw materials and energy carriers were extracted. In 2005 this number has risen to around 58 billion tons. Global extraction of natural resources for production and consumption of products and services thus increased by 45% in the past 25 years (Behrens et al., 2007). In the same time period the performance of the global economy increased by 110%. Relative de-coupling of economic growth and resource use could thereby be achieved; however, the relative gains were overcompensated by the overall growth of the economic system. Scenarios illustrate that the global resource extraction could reach 100 billion tons in 2030, if no policy measures are implemented aiming at an absolute reduction of resource use (see Figure 1).

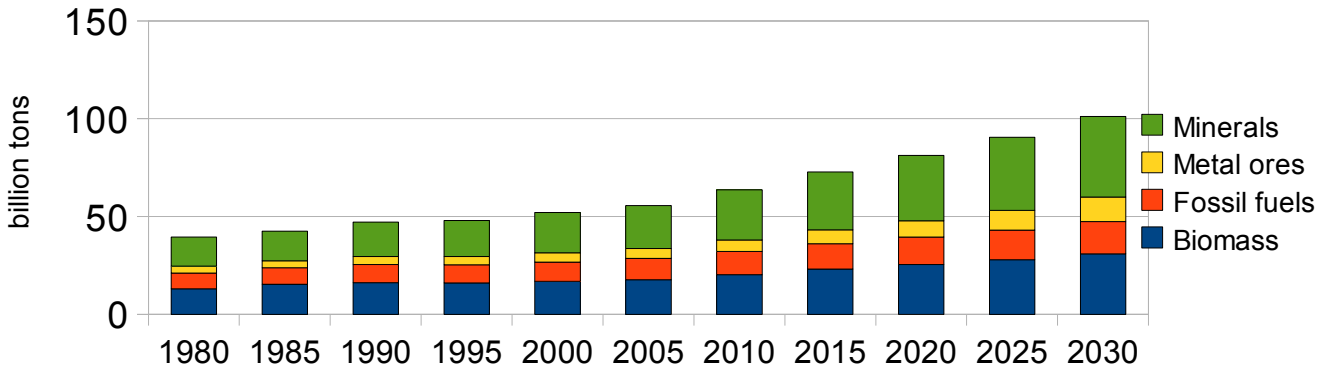

Figure 1: Global extraction of natural resources, 1980-2030
Source: www.materialflows.net and Lutz et al., 2009

At the same time, economic issues related to natural resource use increasingly gain in importance in international policy debates. Competition over natural resources is rising, as rich countries maintain high levels of per capita resource consumption, while industrializing nations aim at raising their material standard of living. Europe is particularly vulnerable as large shares of the raw materials for production and consumption have to be imported from abroad. This is mostly visible for fossil fuels and metal ores: for iron ores, the import share is 83%, for bauxite 80% and for copper 74% (European Commission, 2008). Recent EU policy documents, such as the trade strategy "Global Europe" by DG Trade and the "Raw Materials Initiative" by DG Industry address the issue of resource security and demand maintaining access to raw materials in other world regions through an open international trade system.

2. Two types of ecological limits to growth

In the light of these dramatic scenarios on increased use of raw materials and energy, the question arises, whether such growth will be possible or whether the world economy will face ecological limits to growth. In principal, two types of limits to growth regarding resource use and resource availability can be distinguished.

First, non-renewable resources, in particular fossil fuels and metal ores, are finite. As the most recent „World Energy Outlook" of the International Energy Agency points out, an energy revolution is necessary, in order to change human's use of energy towards environmental, economic and social sustainability (IEA, 2008). Several scenarios exist for "peak-oil", i.e. the reaching of the level of maximum global oil extraction. All scenarios illustrate that peak oil will be reached between 2015 and 2050. If no affordable alternatives to oil can be developed in time, these developments will have severe negative economic impacts, for example in the construction and transport industries, as well as in the chemical or pharmaceutical sectors. Apart from oil, peak extractions have already been reached or will be reached in the very near future for a number of metal ores such as zinc, silver, platinum or tantalum. This suggests severe impacts on industries such as the electronic industries, which depend on these rare metals for producing for example LCD screens and other electronic devices. Also the development of environmental technologies can be influenced by resource scarcity. One example is the new generation of solar cells, which requires indium and gallium, also highly scarce, for producing semi-conducting materials. Resource scarcity thus also limits the potentials of these new technologies to contribute to a cleaner energy system. It might therefore prove difficult to substitute a large share of current energy use by new technologies at the current level of energy consumption. An absolute reduction (or de-growth) of natural resources could help increasing the importance of these new technologies.

A similar argument can be formulated for the second type of resource scarcity, the limited biological capacities of ecosystems for providing renewable resources or for assimilating waste and emissions. Indicators on the human demand for ecological capacity, such as the "Ecological Footprint" indicate that already since the mid 1980s,

humans appropriate more biocapacity than the global ecosystems can provide (WWF et al., 2008). Already today we are living in a situation of ecological "overshoot" beyond the carrying capacity of the planet. In such a situation, it is impossible to substitute larger shares of our consumption of non-renewable resources and energy by biotic energy and materials. As the debate on biofuels in Europe has indicated, the substitution of only 10% of fossil fuels through biofuels would have highly negative environmental impacts, as a large share of these biofuels would need to be produced outside Europe. Clearing of forests, rising water demand and increased pollution through pesticides would be the consequence (EEA 2008). Again, a de-growth of resource consumption would be the only way to allow renewable resources and energy to play a significant role in our total resource consumption.

The limited possibilities for substituting materials and energy with high environmental impacts for those with lower impacts are currently not considered in EU resource use policies (see, for example, the Thematic Strategy on the Sustainable Use of Natural Resources, European Commission, 2005). The European Commission focuses its policies on the environmental impacts related to resource use and does not address the overall scale of current production and consumption. On the one hand, this has led to a situation of "paralysis by analysis" in the past years, as appropriate indicators on the environmental impacts of resource use are currently only developed. The Commission argues that policy targets and instruments could only be formulated once these indicators are available. On the other hand, this focus is overly technology-optimistic, as it assumes that substitutions can be realized independently from the overall levels of resource use.

3. The need for absolute reductions of resource use

The analysis above illustrated that an absolute reduction (a de-growth) of natural resource use in Europe and other high-consuming countries is required as a basis for qualitative changes to reduce the related environmental impacts. Realising a more sustainable development for all inhabitants requires much more than incremental improvements of the current system; what is needed is a radical change on how we use nature's resources to produce goods and services and generate well-being. In order to allow developing countries to overcome poverty and increase the material welfare of their inhabitants in the future, countries with high levels of per-capita resource consumption are required to sharply decrease their share in global resource use in absolute terms. A Factor 10 improvement in resource productivity, i.e. the economic value produced per unit of natural resource has been suggested as an overall guiding target for Western countries (Schmidt-Bleek, 2009). So far, there is no empirical evidence that technological improvements could remove the physical limits of the planet and allow sustaining ever-growing amounts of resource consumption for a growing world population. Therefore, qualitative strategies, such as an increased share of biofuels and biomaterials in total resource consumption, can only be implemented as part of such a quantitative reduction scenario, which avoids overusing the limited capacities of global ecosystems.

EU policy documents acknowledged that European production and consumption patterns have environmental and social impacts, which reach far beyond the EU borders. However, despite the adoption of a large number of policy strategies in the past few years, there is a clear lack of concrete targets for resource use and related impacts. No integrated strategy exists so far, which would ensure supporting resource productivity across different EU policy areas. Most strategies remain on a very general level of declarations of intent, without describing how the formulated objectives should be achieved through concrete policy measures.

However, most importantly for the debate on economic de-growth is the fact that empirical evidence disproves the possibility of an absolute reduction of resource use in a growing economy. In the past three decades, Europe achieved significant improvements regarding local or regional environmental degradation through pollution of certain environmentally harmful substances. This was achieved through technological innovations and substitution of harmful substances and products. However, environmental problems related to the growing scale of the European production and consumption system, have worsen: many species are in threat of extinction, fish stocks deplete, water reserves shrink, overall waste volumes have been growing, urban sprawl transforms fertile land into sealed areas, valuable soil is lost through erosion, energy consumption grows, and Europe is far away from achieving a significant reduction in greenhouse gas emissions (EEA, 2005).

Developing alternative forms of economic development, which are not dependent on economic growth (see Hinterberger et al., 2009), is therefore not only a key objective from a social perspective. It is also crucial to ensure that the natural resource base, on which the quality-of-life of our societies builds on, is not being overexploited and collapsing.

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Limits to Waste and Sinks: De-Growth [De-Growth: an Inconvenient Truth!!]

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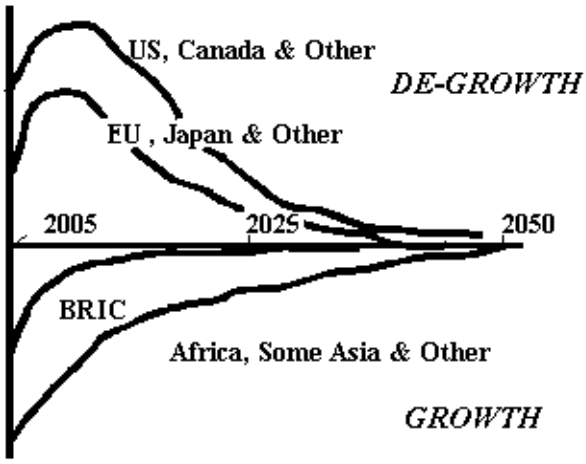
The 'Limits to Growth' a Report to the Club of Rome was published more than 30 years ago. The message had a tremendous echo all over the world, however political and business leaders have not translated this message into specific policies, decisions or actions. Indeed the output of the industrialized world has never been as high as today, but the repartition of the wealth produced through growth was never so small as it is now. The output of technical progress is in fact huge deception for humankind, in the sense that a few -20%- benefit from it.

Compared to the limits to growth, the reality of the planet looks quite different now. Rather 'Limits to Waste and Sinks' has become dominant and is the major challenge of the present and the generations to come, and evidently will be for a long period of time.

The observation that the earth has a limited carrying capacity is only a couple years old. This is a discovery humankind -at least the Western society- could not imagine, and many still do not!



Humankind, in particular the industrialized societies face a different life style. The concept of de-growth or 'décroissance' has been introduced recently and deals with economics as well as with environment and global warming. In this paper, the resource aspect will be focused on.

The graphic is only a qualitative representation of what planetary de-growth resembles. De-growth does not mean that the entire world population has to reduce its consumer behavior in a similar way. The inspiration of this figure has clearly its roots in a resource approach : the horizon of the four curves, is here 2050. The 'zero' of the y-axis (2005) is a point of 'equilibrium' representing a planet, including its human population. At this point human activities do not surpass the carrying or the ecological absorption capacity of the biosphere. The graphic is also inspired by the excellent concept and presentation of ecological footprint. The Footprint indicator helps in describing what de-growth represents in practice.

The de-growth process cannot be a uniform one. The 'development' level of the many societies on earth shows a high diversity as the yearly UNDP Human Development Report demonstrates. Of course the notion of 'development' should be defined as this point. It is largely inspired by Western standards. In this paper, it is thought in terms of healthy living conditions, medic aid, fresh water availability, food and housing, generalized education, etc., but not in materialistic terms and consumer standards used in industrial and business environments.

To the four curves underlies a simple logic. The graphic is divided in two halfs : a growth and a de-growth half, each with specific societies and countries.

Growth

► Strong growth should still have a high pace, for it answers basic needs with a high human value spectrum for people and societies on the African continent and in parts of Asia. The horizon of 2050 could be, by far, too optimistic for reaching the equilibrium point as described above.

► Moderate growth is here attributed to the BRIC countries. These countries show very high GDP growth numbers today, and, by and large, are big 'polluters' and contributers to GHG output as well. Nevertheless, given the significant differences of living standards within these societies, growth remains a way for decreasing these gaps and improve provisions to their basic needs and demands.

De-growth

► Strong de-growth is attributed to the richest countries, which are at the same time the most 'polluting' ones, especially in terms of GHG output. The horizon of 2050 seems here very optimistic too for reaching an 'equilibrium level. Technological knowhow is available in these societies, but due to 'unwillingness' or lack on political courage of the political establishment and due to societal attitudes. Changing life styles seems quite difficult. In this context, it should be recognized that a given way of living, is presented as a dream each individual on earth wants to pursue. The value spectrum needs to be kept narrow and being strongly conditioned by materialistic possessions.

► Moderate de-growth is associated with rich countries, but with convincing policies for reducing pollution and the output of GHG. The promotion via taxation by national authorities stimulates the installation of renewable energy equipment at the individual, community and business level and shows major progress and change in attitude of civilians.

In conclusion, the graphic and the way of presenting the profiles of de-growth pattern, demonstrates that de-growth imperative is dominantly a matter of the rich nations. This is not new and known for several decades and that countries and regions

with lower levels of living standards have to remain on a 'growth' trajectory for some time.

The expected dramatic population increase -from 6,5 to about 8,5 billion- will complicate the process of reaching the planetary equilibrium state, in several of these regions. The population increase affects the need for use of materials and others supplies for infrastructure etc. In emerging economies this process is taking place now, and, is not close to slow down. Therefore, the de-growth process has to be understood in function of time, as indicated in the graph.

Two important questions arise from the analysis.

1. Reduction of material use is imperative but technologically feasible. Several proposals have been suggested in terms of Factor Four, LCA and other.

2. The abolition of fossil energy use without CCS. The technologies of renewable energy generation is today in full progress. The development of smart power grids remains a technical challenge, but appears to be slowed down by established big power suppliers. A perspective of a substantial part of renewable energy is feasible in a couple decades, together with a high degree of increase in efficiency and reviewing in our societies of the transportation concepts for persons as well as for goods. For the latter it should be clarified what makes really sense to be transported and what not!

When these above topics are related to resource availability and use, the overall question of the sustainable character of the present market economy has to be reviewed. Indeed the market economy with its monetary structure is not sustainable and destroys the world wide ecosystem of which humankind is apart of.

The conviction is alive among leaders that the world society finds itself in an economic and environmental -global warming- transition phase. This is certainly true, however in which direction the transition is moving, is not made clear enough to the public. When a market economy is environmentally destructive by definition, then a new one has to be defined and applied. Some thinkers have proposed different economic systems: green economy, eco-social economy, social enterprise system and other.

All contain valuable elements which would improve the present system. However, the question remains if the elements taken together, are sufficient to lead to a fundamental transition. The present crisis is frequently designated as an extraordinary opportunity for bringing about a fundamental change. This an optimistic vision. It would be a historical landmark, that an immense transition as this one, would take place without a major world conflict.

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Final Remarks

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To speak with Woody Allen: it is difficult to make predictions, especially if they are related to the future. There are proven facts that continuing our so called "development" path, the Business as usual, will lead, and is already leading, us to huge environmental and social disasters. And it is too easy to say that there is a lack of information, because there is not. The problem is that we don't believe what we know! Forty years ago, Kenneth Boulding, Nicolas Georgescu-Roegen, Herman Daly, already said that we could not grow forever. The Meadows published "The Limits to Growth" in 1972. Sicco Mansholt, former president of the European Commission, said in 1972 that Europe could not grow much more.

There is a denial of the reality. By mainstream mass media, by policymakers, by the established civil society, by world leaders, etc. The feeling of urgency is lacking, and we prefer keep on dreaming although our dream is over. You really can ask yourself: who are the idealists? The ones on the left and green site who are warning for fundamental problems and trying to develop new visions, a new economic system and policy? Or the ones who think we can go on like this ? The last ones consider themselves as realists, although in my point of view they are the idealists. And quite dangerous.

Reality is:

- we are degrowing already (forced by financial crisis), and this can be done socially and sustainable.
- we have already huge environmental en social problems
- There will be peaks of carbon dioxide emissions, oil, natural resources, population, etc
- We have to degrow in several sectors of our economy to avoid more disasters
- Stern recently calculated again that the costs of inaction are bigger than direct investments on actions
- We have all this information, but as I said we don't believe what we know.

Europe claims to be the pioneer, the best student of the class, referring to environmental issues and policymaking. But they also want to be the best referring to economic growth and job creation. (look at the importance of the Lisbon Strategy).

But there are limits to growth, we depend on fossil fuels, we produce too much CO_2. And if you also consider and accept the ambitions and rights to grow in the Southern countries, necessary for meeting their needs, our grow obsession is a dead end alley.

Degrowth of material use, decreasing the production of waste, and redistribution of the use of natural resources, labour and capital are the main challenges for the EU in the near future. Policy focussed and limited on efficiency (the technical solutions) will certainly not be enough. Policy has to be focussed on sufficiency and redistribution as well.

But there is a fear and as I heard from the panellists and from some remarks of the public, also resistance to accept this reality and challenge. We need more research work on scenarios on the future. Scenarios with specific targets and timetables. Targets on zero-emissions, zero waste, integrating the facts of the various peaks, which has to be the bottom-line for further policymaking and decisions. Putting those targets in the centre of our politics and economy is essential.

Politicians and policymakers, but also the leaders within the civil society, NGOs, federations of business, trade unions, need more long term vision, leadership and guts, but most of all a strong feeling of human survival, morality and justice.

If we don't respond to this situation by bringing the global economic activity into line with the capacity of our ecosystems, and redistribute wealth and income globally, the result will be a process of involuntary and uncontrolled economic decline or collapse. This will have serious social impacts, especially for the most disadvantaged.

Exactly for the purpose to create possibilities for growth in the South, we have to degrow in the global North. Nobody ever asked for degrowth in the South. It is just a matter of fair sharing what we have and social justice.

At the event in the European Parliament on April 16, 2009, there were interesting ideas for MEPs. Just to mention some:

- We need a paradigm shift in thinking and policy goals. We can do that with financial instruments, like tax reforms and abolish perverse subsidies.
- We need a transition of our economy and the activities. A redistribution of financial wealth, use of natural resources and labour capacity.
- Because there is resistance for the word "degrowth" , because politicians cannot "sell" this to their voters: we need a kind of PR for the degrowth movement. All kind of euphemisms were already mentioned.
- We have to question our monetary system, which is the engine of growth.
- We need better, stronger and urgent targets and timetables. Good intentions are not sufficient anymore. Research has to be done on degrowth scenarios, without fear and accepting the realistic limits and bottom lines of planet and society.

There was a remark of bringing this all into practice we will develop a green dictatorship. This is absurd. I personally think, we need a legal framework, a partially top down approach. Everybody agrees that unfair appropriation of personal belongings has to be punished; we call it theft. But unfair appropriation of common goods, what industrial countries do for many centuries already (cfr footprint data) is not punished. We claim a kind of historical right to use much more of the natural resources for maintaining our high level of wellbeing, or even greed. If we start with a legal framework to avoid/restrict this (public) theft, do we create than a green dictatorship?? I don't think so. On the contrary: then we are creating a just and fair global governance model.

I hope the event was inspiring for all participants. I felt in the whole debate a sense of urgency. I know the public was very heterogeneous, which gives hope that from the various groups in the society this issue and belief in a necessary and controlled degrowth is accepted. So now it is up to us, and all of you to make this reality and avoid bigger disasters that we are already confronted with.