Sustainable Development and Human Rights

Tenth Annual Conference of the German Council for Sustainable Development

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CHECK AGAINST DELIVERY

Excellencies, Ladies and Gentlemen,

I am extremely honored to have been invited to deliver this address to the Annual Conference of the German Council for Sustainable Development. I have been asked to discuss the relationship between sustainable development and human rights. Both are generous ideas, and they have in common that they offer a counter-weight to the short-termism of markets and of politics : they are civilizing concepts, obliging us to look beyond our narrow self-interest. At the same time, they seem to adopt different worldviews : sustainable development is about the long-term and about aggregate perspectives – the sake of the population as a whole –, human rights impose immediate demands for the benefit, particularly, of the most vulnerable groups of society ; sustainable development seems to call for limiting growth, when human rights seem to require, for their realization, more resources to distribute.

Yet, what they have in common matters far more than what separates them. Sustainable development and human rights share the ideal of a world that a more equitable and that moves away from the obsession with the accumulation of material wealth. On that basis, they can form a strong alliance. Even their differences can be productive : they can be made into mutually correcting devices, ensuring that sustainability includes social equity and that human rights include a longer-term perspective.

The single most important characteristic that sustainable development and human rights share is that they require us to travel the distance, from where we are now, to another point, so far distant that it seems utopian – an almost carbon-free society where all basic human rights will be realized, for all. What does this mean ? What does it mean to consider this trajectory, using sustainability and human rights together as guiding devices ?

'Contraction-and-double-convergence'

It means, first, to accept the plain truth about the script that we must write. I call this script 'contraction and double convergence'. 'Contraction' refers to the fact that, if we want this plant to be viable for our children's children, we need urgently not simply to slow down growth as calculated in GDP per capita, but to 'de-grow' – to limit the quantity of natural resources that each of us, in the rich countries, consumes in his or her lifetime. Just look at the numbers. Before the industrial age, the level of CO_2e[1] concentration in the atmosphere was 280 molecules per million molecules of air (280 ppm). Since 1750, when the steam machines were first introduced, the world population increased tenfold, and so did the average per capita production : the result is that society's level of economic activity multiplied by one hundred in comparison to the pre-industrial era.[2] This led to a steady rise of the levels of greenhouse gases concentration in the atmosphere, which results in trapping the infrared waves radiated by the Earth and thus warming the planet. We stand now at 435 ppm. If we want a 75 percent chance of staying below 2° C, which most observers now consider to mark

[1] This refers to the carbon dioxide equivalent, taking into account not only carbon dioxide, but also the other greenhouse gases responsible for global warming. In addition to carbon dioxide, these include methane, nitrous oxide and other industrial gases. Carbon dioxide (CO_2) originates mainly from fossil fuel consumption for energy and transport (56.6 % of total man-made GHG emissions), and from deforestation – 13 million hectares of tropical forests are destroyed each year, the equivalent of half the size of England, resulting in an estimated 17 % of GHG emissions. Methane (CH_4) is emitted by rice paddies, livestock digestion, and landfills : it accounts for 14.3 % of the emissions. Nitrous oxide (N_2O) accounts for 7.2 % : it is produced in particular through the Haber-Bosch process of fabricating nitrogen-based fertilizers. Finally, fluorinated gases play a minor role (1.1 %).

[2] Jeffrey Sachs, *The Common Wealth. Economics for a Crowded Planet*, The Penguin Press, New York, 2008, p. 67.

the limit between acceptable and dangerous and incontrollable climate change, we can only afford to emit a total of one thousand billion tonnes of carbon dioxide between 2000 and 2050. But by 2008, we already had used up a third of this budget.[3] Further population growth, the rapid industrialization of certain emerging economies, and the desire of the populations in developing or middle-income countries to achieve the levels of affluence that we have achieved in the OECD countries, mean that the trend upward will continue exponentially.

It is increasingly recognized that, in industrialized countries, the economy shall have to contract – and lifestyles change –, if we want to meet the challenge of avoiding the dangerous point where climate change will lead to unpredictable chain reaction effects. This is not simply because industrialized countries have in the past emitted far more greenhouse gases than developing countries, so that, on equity grounds, it is they primarily who should make efforts towards reversing the trend. It is also because the current rate at which human activity is growing, much faster even than the world population itself, is simply not sustainable. The economy has grown fivefold since 1950. In 2050, by the time we will have reached a global population of 9 billion, it would need to have a size 75 times that of today's economy (or 80 times that of the economy of 1950) in order for all people to arrive at a level of wealth equivalent to that of the populations in rich countries.[4] Such a growth in human activity is incompatible with the aim of reducing our carbon emissions anywhere near to the targets we agree are desirable. Although the switch to 'green' technologies is vital, such a switch is clearly unable by itself to reach such targets, as Tim Jackson has convincingly shown :

> Carbon intensities have declined on average by 0.7 per cent per year since 1990. [But] population has increased at a rate of 1.3 percent and average per capita income has increased by 1.4 percent each year (in real terms) over the same period. Efficiency hasn't even compensated for the growth in population, let alone the growth in incomes. Instead, carbon dioxide emissions have grown on average by 1.3 +1.4 – 0.7 = 2 per cent per year, leading over 17 years to an almost 40 per cent increase in emissions.[5]

So, 'green growth' – the design and use of clean technologies – is important, but it will not suffice to do the job : contraction here is required if we want to avoid the worst-case scenario from materializing. We should not shy away from this duty. Instead, we should embrace this opportunity to cure our societies from the main disease they are facing : a quest for more that seems to never want to stop, as if we never had enough. The studies that exist on the relationship between the growth of GDP per capita and well-being consistently show that, while the two are correlated up to certain levels, they follow distinct paths beyond that point. In industrialized countries, that point was reached more than one generation ago, in the 1970s : since then, while economic growth has continued to rise, our levels of satisfaction, or 'happiness', have been decreasing.

If this is 'contraction', 'double convergence' means that de-growth in industrialized countries must go hand in hand with converging living standards in those countries, and with growth in developing countries. More equality here – social justice, in sum – is both a desirable end in its own right and a means. In a recent book, professors Richard Wilkinson and Kate Pickett use a wide range of studies to show that in societies where income differences between rich

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[3] Myles Allen, David Frame, Chris Huntingford, Chris Jones, Jason Lowe, Malte Meinhausen and Nicolai Meinhausen, 'Warming caused by cumulative carbon emissions towards the trillionth tonne', *Nature*, 458 (2009), pp. 1163-1166 ; Malte Meinhausen, Nicolai Meinhausen, William Hare, Sarah Raper, Katja Frieler, Reto Knutti, David Frame and Myles Allen, 'Greenhouse-gas emission targets for limiting global warming to 2°C', *Nature*, 458 (2009), pp. 1158-1162.
[4] Tim Jackson, Prosperity Without Growth. Economics for a Finite Planet, Earthscan, London, 2009, pp. 13-14.
[5] Id., p. 79.

and poor are smaller, community life is stronger, people feel they can trust others and there is less violence.[6] Both physical and mental health tends to be better and life expectancy is higher ; teenage birth rates are lower ; children tend to do better at school (as judged by maths and literacy scores) ; and there is less obesity. In rich countries, the relative position one occupies – one's social status – matters, much more than the general level of affluence. In other terms, well-being does not increase when a rich country becomes even richer, but it does increase when the incomes of the poor converge with the those with higher incomes. The political conclusion is that it is wrong to ask where the balance should be struck between more equality or stronger economic growth : in our countries, we have reached a level where aggregate growth does not contribute to improving well-being, but where this can be achieved, rather, by redistributive policies, aiming at equalizing wealth within society.

And social justice is also a means to slow down the current patterns of consumption, that are plainly unsustainable. Most of what we consume does not serve to satisfy needs : it serves to present an image to the outside, it serves to imitate others, it corresponds to what, over a century ago, Thorstein Veblen called 'conspicuous consumption' – a question of social ranking and of symbolic status. Veblen was wrong on one point, though : that type of consumption, which mainly has a signalling function to fulfill, is not a privilege of the 'leisure class' – the bourgeois – : it is mostly a behavior of those lower on the social ladder, who seek to dispel the impression that they are poor, by projecting to the outside world a façade of wealth. The more a society is equal, the less each individual member of society feels compelled to take part in the infinite quest for status by consumption.

'Convergence' should be between the poor and the rich in industrialized countries, but it should also be between the developing and the industrialized nations globally. Almost twenty years ago, the India-based Centre for Science and the Environment, followed by the philosopher Henry Shue, put forward the distinction between 'luxury emissions' and 'subsistence' or 'survival emissions'.[7] That distinction corresponds to a moral intuition that emissions that serve luxurious lifestyles should be treated differently from emissions that serve to fulfil basic human needs.[8] But the 'contraction-and-convergence' framework presented by the Global Commons Institute at the second Conference of Parties in 1996 also is the only scenario compatible both with the need to reduce overall greenhouse gas emissions and the right to development of poor countries.[9] The right to development is a 'human right by virtue of which every human person and all peoples are entitled to participate in, contribute to, and enjoy economic, social, cultural and political development, in which all human rights and fundamental freedoms can be fully realized'.[10] It is not to be confused with economic growth. But it is the right, and the duty, for poor countries, to be supported in pursuing human development, understood as 'a process of enlarging people's choices'. These countries deserve to be supported in this effort : this is an area – the distribution of efforts towards limiting greenhouse gas emissions – in which climate change policies could clearly be better guided by human rights considerations.

Improving consistency across policy areas

[6] See Richard Wilkinson and Kate Pickett, *The Spirit Level : Why Equality is Better for Everyone*, Penguin Books, 2010.
[7] Anil Agarwal and Sunita Narain, *Global Warming in an Unequal World : A Case of Environmental Colonialism*, Centre for Science and Environment, 1991 ; Henry Shue, 'Subsistence Emissions and Luxury Emissions', *Law & Policy* 15, n° 1 (1993), pp. 39-59
[8] International Council on Human Rights Policy, *Climate Change and Human Rights. A Rough Guide*, 2008, p. 9.
[9] Article 3(4) of the United Nations Framework Convention on Climate Change states that 'The Parties have a right to, and should, promote sustainable development'. This is an implicit reference to the right to development, as recognized in international law.
[10] UN General Assembly Resolution 41/128 of 4 December 1986.

Imagining the trajectory that unites sustainable development with human rights also means that we must improve consistency across different policy areas. Neither the move towards a more sustainable organisation of society, nor the shift towards the full realization of human rights, can be seen as sectoral policies : they must be cross-cutting.

A range of examples could illustrate the need for more consistency between policy areas that are all too often considered in isolation. Consider first the relationship between the development of international trade and efforts to mitigate climate change by limiting greenhouse gas emissions. On the one hand, trade favors in many cases the spread of cleaner technologies which, once taken up, can lead to less carbon-intensive types of growth in the importing country. This is the 'technology effect' of international trade. On the other hand however, international trade favors increased economic growth and levels of consumption, as resources are freed-up from their less productive uses to be reinvested or spent elsewhere. This is the 'scale effect' of trade. Studies are now converging to show that the 'scale effects' of international trade outweigh 'technology effects'.[11] If these studies are correct, it follows that we cannot pretend, at the same time, to pursue a free trade agenda leading to the expansion of North-South trade flows and to combat climate change. The development of international trade may be good for 'convergence', allowing less developed countries to grow, but it is not compatible with the aim of 'contraction' here.

What needs to be promoted, therefore, is the expansion of developing countries, and their adoption of clean technologies, by means other than international trade with industrialized countries. Such means exist. They include the diversification of the economies of developing countries, regional integration, and South-South trade. Such development pathway for poor countries moves away from a colonial pattern of resource exploitation in which Southern countries provide natural resources and Northern countries produce higher added-value and knowledge-intensive products. In order to favor the rapid picking up of more resource-efficient technologies in developing countries, it should be combined with massive technology transfers, for instance by the establishment of a fund in which clean technologies could be treated as global public goods funded by OECD countries.

Or consider, to take another example, the problem of 'carbon leakage', or 'virtual emissions'. This refers to the emissions produced in the production processes of products that are exported, and thus 'externalized' – or outsourced – by the importing country. It has been calculated that in 2001 'the EU imported goods with virtual emissions amounting to some 992 megatonnes (Mt) CO2, whereas only 446 Mt CO2 emissions arose from the production of exports within the EU. Thus the EU displaced over 500 Mt CO2 emissions overseas'.[12] Researchers from the Carnegie Institute estimated recently that 23 percent of the greenhouse gas emissions linked to the goods consumed in developed countries – for a total of 6.4 billion tonnes of CO2 – have in fact been emitted elsewhere, and that 22.5 per cent of the GHG emissions from China are for the production of export goods – to satisfy the tastes of

[11] See M. Heil and T. Selden, 'International Trade Intensity and Carbon Emissions : A Cross-Country Econometric Analysis', *Journal of Environment and Development*, n° 10(1) (2001), pp. 35-49 ; M. Cole and R. Elliott, Determining the Trade-Environment Composition Effect : the Role of Capital, Labor and Environmental Regulations', *Journal of Environmental Economics and Management*, n° 46(3) (2003), pp. 363-383. For an excellent overview, see *Climate and Trade. Why climate change calls for fundamental reforms in world trade policies*, report authored by Tilman Santarius for the German NGO Forum on Environment and Development and Heinrich Böll Foundation, 2009.

[12] Climate and Trade. Why climate change calls for fundamental reforms in world trade policies, Heinrich Böll Stiftung 2009 p. 9.

consumers in the North.[13] Yet, the reporting mechanism under the 1997 Kyoto Protocol does not take these 'vitual emissions' into consideration : only emissions arising from production and consumption within one country are recorded – not emissions arising from the production of export products, that one country imports in order to meet the consumers' demands. This allows industrialized countries to meet their obligations under the UNFCCC to reduce their emissions simply by outsourcing the most polluting industries in developing countries. We therefore either must reform the way reporting on emissions is organized, or we must impose restrictions on developing countries, at least insofar as their export products are concerned. For the moment, the reason why we can pretend to limit greenhouse emissions without changing our lifestyles is not because we are smart at developing cleaner technologies : it's because we outsource the most polluting types of production.

These examples show how foolhardy it is to pretend to tackle climate change without regulating international trade in ways that take into account its impacts on the increased production of GHG emissions. But the problem posed by the fragmentation of international governance and the lack of coordination across different fora where States cooperate does not stop here. We are witnessing today an extraordinary effort to relaunch agriculture where it has been neglected for the past thirty years, particularly in Sub-Saharan Africa. But these efforts are insufficiently informed by the relationship between climate change and agricultural production. The change in average temperatures is threatening the ability of entire regions, particularly of regions living from rainfed agriculture, to maintain actual levels of agricultural production. In Sub-Saharan Africa, as well as in Eastern Asia and South Asia, climate change will affect rains. It will increase the frequency of droughts and average temperature. Less fresh water will be available for agricultural production, and the rise in sea levels is already causing the salinization of water in certain coastal areas, making water sources improper for irrigation purposes. The UNDP reports an estimate according to which by 2080, the number of additional people at risk of hunger could reach 600 million, as a direct result of climate change.[14] In Sub-Saharan Africa, arid and semi-arid areas are projected to increase by 60-90 million hectares, and the Intergovernmental Panel on Climate Change has estimated that in Southern Africa yields from rainfed agriculture could be reduced by up to 50 percent between 2000 and 2020.[15] Losses in agricultural production in a number of developing countries, particularly in Sub-Saharan Africa, could be partially compensated by gains in other regions, but the overall result would be a decrease of at least 3 percent in productive capacity by the 2080s, and up to 16 percent if the anticipated carbon fertilization effects[16] fail to materialize. William Cline considers that 'a prudent range for impact on global agricultural capacity by the 2080s (...) [could] lie in the range of reductions of 10 to 25 percent'.[17] The losses would be particularly important in Africa and Latin America, with 17 percent and 13 percent average

[13] Steven J. David and Ken Caldeira, 'Consumption-based accounting of CO2 emissions', *Proceedings of the National Academy of Sciences*, vol. 107 no. 12 (2010), pp. 5687-5692.
[14] UNDP, *Human Development Report 2007/2008. Fighting Climate Change: Human solidarity in a divided world*, 2007, p. 90 (citing Rachel Warren, Nigel Arnell, Robert Nicholls, Peter Levy and Jeff Price, 'Understanding the Regional Impacts of Climate Change', Research Report prepared for the Stern Review on the Economic of Climate Change, Research Working Paper No. 90, Tyndall Centre for Climate Change, Norwich).
[15] IPCC, *Climate Change 2007: Climate Change Impacts, Adaptation and Vulnerability. Working Group II Contribution to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, eds), Cambridge Univ. Press, Cambridge and New York, chapter 9.
[16] These consist in the incorporation of carbon dioxide in the process of photosynthesis, which uses solar energy to combine water and carbon dioxide to produce carbohydrates, with oxygen as a by-product (defintion adapted from William R. Cline, *Global Warming and Agriculture. Impact Estimates by Country*, Center for Global Development and the Peterson Institute for International Economics, 2007, at 24).
[17] William R. Cline, *Global Warming and Agriculture. Impact Estimates by Country*, Center for Global Development and the Peterson Institute for International Economics, 2007, at p. 96.

losses respectively if the carbon fertilization effects materialize, and 28 percent and 24 percent respectively in the absence of carbon materialization effects.[18] As summarized by the Stern Review of 2006: 'In tropical regions, even small amounts of warming will lead to declines in yield. In higher latitudes, crop yields may increase initially for moderate increases in temperature but then fall. Higher temperatures will lead to substantial declines in cereal production around the world, particularly if the carbon fertilization effect is smaller than previously thought, as some recent studies suggest'.[19]

We can improve the resilience of agriculture to climate change by combining diverse crops on the same farm, by planting more trees, and by developing water harvesting techniques to moisture the soil. But the classic 'Green Revolution' approaches should be fundamentally rethought to achieve this. In addition, these approaches, as they are currently promoted, favor the use of chemical fertilizers and of heavy mechanisation in the field. This makes food production increasingly dependent on fossil fuels, oil and gas, although this will not be sustainable in the long term. And in large part because of this reliance on fossil fuels and because of our failure to support means of improving productivity that rely more on agro-ecological techniques, agriculture has become a major contributor to greenhouse gas emissions : it is estimated that 33 percent of man-made greenhouse gas emissions stem from agriculture, if one includes both the methane and nitrous oxide produced, respectively, by cattle and rice paddies and by the use of synthetic fertilizers (14 percent), and the carbon dioxide production resulting from shifts in land use – deforestration for pastures or crop cultivation (19 percent). Agriculture, now part of the problem of climate change, should be made into part of the solution. But this requires that we think together climate change and agricultural development, when the two are too often dealt with in isolation from one another, left to different policy makers.

The requirement of consistency across different policy areas means not only that what we do in areas such as trade and food security should take into account the need to mitigate climate change, but also that the efforts to combat climate change or to adapt cannot ignore their social equity impacts. The recent discussion on biofuels illustrates this. While the shift to renewable sources of energy is a key part of our efforts to mitigate climate change, the reliance in a growing number of regions on ethanol or biodiesel produced from biomass as liquid fuels for transport is having serious negative consequences for many groups in developing countries, particularly poor smallholders and indigenous peoples. The increased demand for energy crops leads the price of arable land to rise, making access to land even less affordable than it is presently as smallholders compete against large producers for access to land and water. It is leading to the eviction of landusers whose titles to the land are insecure, or to the displacement of populations, particularly of indigenous peoples, in order to allow for the development of large plantation-form agricultural exploitations for the production of agrofuels.[20] One 2007 study estimated that as many as 60 million indigenous people will be driven from their lands, under customary ownership, to clear the way for biofuels plantations,

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[18] Ibid. See also, confirming these views, David B. Lobell, Marshall B. Burke, Claudia Tebaldi, Michael D. Mastrandrea, Walter P. Falcon, and Rosamond L. Naylor, 'Prioritizing Climate Change Adaptation Needs for Food Security in 2030', *Science*, 1 February 2008, vol. 319, pp. 607-610 (showing, on the basis of an analysis of climate risks for crops in 12 food-insecure regions, that South Asia and Southern Africa are two regions that, without sufficient adaptation measures, will likely suffer negative impacts on several crops that are important to large food-insecure human populations).

[19] *Stern Review Report on the Economics of Climate Change*, by Nicholas Stern, prepublication at www.hm-treasury.gov.uk, published in Cambridge, Cambridge Univ. Press, 2007, p. 67.

[20] See International Institute for Environment and Development (IIED) and the Food and Agriculture Organization (FAO), *Fuelling Exclusion? The Biofuel Boom and Poor People's Access to Land*, by Lorenzo Cotula, Nat Dyer and Sonja Vermeulen, www.iied.org/pubs/pdfs/12551IIED.pdf; Rachel Smolker and others, The Real Cost of Agrofuels: Impacts on food, forests, peoples and the climate, Global Forest Coalition and Global Justice Ecology Project, 2008.

if current investment plans are realized.[21] These predictions are corroborated by recent developments, and particularly by the race towards the acquisition of large areas of farmland, by both private and public investors. For instance, it appears from a recent inventory by the World Bank (which listed 389 large-scale acquisitions or long-term leases of land in 80 countries) that while the bulk (37%) of the so-called investment projects are meant to produce food (crops and livestock), biofuels come in second place (35%).

And there are other areas in which even well-intended efforts to mitigate climate change have been insufficiently guided by human rights considerations. Under the Clean Development Mechanism provided for in Article 12 of the Kyoto Protocol to the UNFCCC, Annex I (industrialized) countries that have committed to reducing greenhouse gas emissions receive additional emission credits if they help to implement emission-reducing projects in developing countries. However, the planting of forests in order to benefit from the CDM may result in evictions against which the local populations concerned may be insufficiently protected. Similarly, the REDD scheme (Reduced Emissions from Deforestration and Forest Degradation), which was introduced in 2007 in order to allow not only the plantation of forests to be rewarded but also avoided deforestation, entails risks for forest dwelling communities who have only weakly recognized customary rights over the forests they depend on for their livelihoods, if the State or other actors are tempted to appropriate the benefits from carbon sequestration. Because it attaches a price to forest conservation, REDD may lead existing forest-dwelling communities to be priced out from this market. And the implementation of the REDD scheme may lead forests to be protected against the use by traditional users : as a result of forests being fenced off, these users could be unable to have access to the forest on which they hunt, fish, or gather the food the rely upon.

Governance for Sustainability

I have put forward the need to move towards a scenario of 'contraction-and-double-convergence', and to improve consistency across different policy areas – such as climate change policies, trade policies, food security policies --, using human rights as a guide to achieve this. In this view, sustainability is the exact opposite from 'conservation'. It is not about preserving things : it is about changing them. It is not about refusing progress : it is about travelling towards a different type of society, with differently formulated objectives. It is about movement, not about remaining immobile.

The issue of governance should be central to any such effort. In the field of human rights like in the field of environment, a number of tools have been tested and revised that we know have to develop further in order to move towards truly sustainable development. For instance, impact assessments, that seek to assess the impacts of certain policies or regulatory initiatives on a wide range of issues – economic, social and environmental –, have become a standard practice in many countries. Such impact assessments should be further improved, by including longer-term considerations, in order to ensure that whatever choice we made moves us the right direction, and does not impede any efforts we make, in other policy areas, towards sustainability : in Germany, the sustematic assessment of sustainability of legislation by the Parliamentary Council for sustainable development represents an important step in this direction.

[21] See Victoria Tauli-Corpuz and Parshuram Tamang, Oil Palm and Other Commercial Tree Plantations, Monocropping: Impacts on Indigenous Peoples' Land Tenure and Resource Management Systems and Livelihoods, Permanent Forum on Indigenous Issues, sixth session, New York, 14-25 May 2007, doc. E/C.19/2007/CRP.6 (7 May 2007).

But our efforts at reforming governance for sustainability cannot stop here. In order to travel from our present situation to another point, where our modes of production and consumption will be truly sustainable, we need to adopt multi-year strategies, that identify the range of measures that must be adopted in various policy areas, with a clear timeline for action and an allocation of responsibilities across various branches of government. We will be unable to move towards a carbon-free society, in which human rights are more fully realized, if we remain hostages to the short-termism of markets and of electoral politics : the immediate expectations of shareholders and of voters cannot be ignored, but the aspirations of citizens must be allowed to grow into something larger, that recognizes our debt towards future generations and towards the most vulnerable segments of society.

Such national strategies have been tested in the area of human rights, and they must now be transposed to serve the larger aim of sustainable development. Ideally, such strategies should be participatory, co-designed between governments, unions and civil society organisations. Thus conceived, the adoption of such binding, multi-year strategies, do not impoverish democracy : instead, they enrich it, beyond the ritual of elections every four or five years, into something more permanent and closer to the citizen. We will not succeed in introducing long-termism into politics by removing certain issues from democratic control : we will succeed instead in doing so, by providing opportunities for citizens to invest into forms of civic involvement that allow them to contribute to shaping the longer term. The adoption, by participatory means, of multi-annual strategies for sustainable development, does not impoverish democracy : it enriches it.

Such strategies should be combined with the choice of indicators and benchmarks, that reflect the different dimensions of sustainability. Such indicators could refer for example to the amount of greenhouse gas emissions we emit as producers or as consumers, including as consumers of imported goods ; to the gap between the rich and the poor ; or to the impacts of our policies on the ability of developing countries to overcome their disadvantages. But the key indicator should be a measure of well-being that is distinct from the growth of GDP per capita, and that takes into account the dimension of sustainability. Since 1990, the UNDP uses a *Human Development Index* (HDI), a multidimensional composite index allowing comparisons across states to take into account life expectancy, the levels of education, as well as levels of income ; this approach has been refined since in a number of directions. More recently, at the request of the French government, a commission led by Joseph Stiglitz, Amartya Sen and Jean-Paul Fitoussi has reflected on the use of indicators to measure economic performances and social progress, introducing an important distinction between the evaluation of present welfare – the well-being of individuals, understood as the range of choices open to individuals – and the evaluation of its sustainability – in order terms, of the question whether the capital stocks on which present levels of well-being depend (including natural resources but also physical, human and social capital) will be available to future generations, considering their current levels of use –.[22]

Having such measurement tools is important, however, only to the extent that they influence policy-making, and that they increase the political cost for governments working in the wrong direction. Linking the implementation of strategies for sustainable development to appropriate indicators and benchmarks allows a monitoring of the choices made by policy-makers. This can constitute a powerful incentive to integrate long-term considerations into decision-making, and to effectively implement the roadmap that has been agreed upon. Indeed, such

[22] Report of the Commission on the measurement of economic performance and social progress, 14 September 2009, www.stiglitz-sen-fitoussi.fr

monitoring could be further strengthened by tasking independent bodies with this role. The German Council for Sustainable Development, as a multi-stakeholder body independent from the goverment, could play this role in Germany, obliging the government to faithfully implement its sustainable development strategy, and ensuring that, if certain policies appear misguided, they will be immediately corrected.

The adoption and independent supervision of national, multi-annual strategies for sustainable development serve not only as a counter-weight to the tendency of many decision-makers to discount the future. They are required also to ensure continuity across different governments : we will only be able to meet the challenge of moving towards sustainability if we do not make it a political issue, pitting the right against the left and the greens against the others – we must instead make climate change a cross-party concern, based on a consensus across the whole of society. In addition, a multi-year strategy is required in order to provide market actors with the kind of stable framework they need to make investments that shall not bring immediate rewards. According to the UNCTAD's *World Investment Report 2010 : Investing in a low-carbon economy*, 400 billion UDS per year will be required in 2010-2015 to make the shift to a low-carbon economy, and this figure could climb to 1.3 trillion USD per year by 2030. Nothing less than a massive effort, mobilizing both public investment and, through appropriate incentives, private funds, will be needed. This will not happen by chance. It can only happen by design. And it requires a sustained effort across a number of years, to promote new, cleaner technologies in industry, to develop renewable sources of energy, and to transform agriculture to make it part of the solution rather than of the problem of climate change. What we need is a war economy without a war.

It is always tempting for the proponents of business-as-usual to dismiss as utopian proposals that are so far-reaching that they seem to be revolutionary in nature, and to dismiss other proposals as so minor and insignificant that they will not really make a difference. We must move beyond this false opposition. What matters is not each of the policy proposals considered in isolation, whether reformist or more revolutionary. It is the pathway that matters : the sequence of measures that, piece by piece, may lead to gradually paying back our debt to the future. Once set out in a multi-year strategy, the set of measures that we need to adopt to mitigate climate change and to adapt to its unavoidable impacts, and to move towards a 'contraction-and-double-convergence' scenario, cannot be so easily dismissed : what seems utopian now may be seen as achievable if it is the point of arrival of a long-term plan ; and changes that may seem trivial at first will be seen in a very different light once they are presented as part of a broader and more ambitious strategy. Our democracies are premised on the idea that even the greatest collective problems can be solved if broken down into pieces and addressed one by one. It is an idea that we must now reclaim.

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