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Sustainable development of what? Contesting global development concepts and measures

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Introduction

Whether we are trying to find out if a particular development situation is sustainable, assess a development trend for sustainability, or compare development performance of different countries or regions, we have inevitably to ask the question: sustainable development of *what*? This chapter explores efforts to define, measure and compare aspects of development at the global level. The starting point is the proposition that the meanings and definitions of sustainable development are neither static, nor given. Sustainable development has been called a *contestable* concept, containing competing interpretations and ideas (Jacobs 1991). 'Sustainability' is a boundary term, signifying complex interactions between science, politics, policymaking and development (Scoones 2010, 153-4). 'Development' is similarly *emergent* and *contested*, with different understandings emerging over time and space. This fluidity has allowed different actors to redefine and manipulate the term 'sustainable development' to suit their own agendas (Krueger & Gibb 2007, 8). Sustainable development must gain intellectual clarity and rigour and give up politically expedient fuzziness, if it is to have an impact (Lélé 1991, 607). The conceptual and empirical challenges converge in concerns with measurement - 'if sustainability is to mean anything, it must be measurable' (Hamilton & Atkinson 2006, xi).

Debates about the meaning and measurement of sustainable development are usually situated within efforts to 'green' national accounting. These debates appear somewhat technical, but questions concerning what measures to choose and how to integrate different measures reflect profound, even radical efforts to redefine how societies think about, and value, social progress and wealth. This broader view encompasses factors such as poverty, inequality, welfare, basic needs, quality of life, ecology and resource limits – in a variety of combinations. The discussion in this chapter draws attention to the *global* character of these critiques and contestations. Taking a critical development perspective (e.g. Munck and O'Hearn 1999; Kothari 2005), this chapter emphasises the unevenness of global development. Historic claims for economic and political restructuring and global justice must be recognized as part and parcel of the sustainable development debates. Sections 1 to 3 explain the roots of 'development' as a concept, the rise of national economic accounting and the search for alternative approaches. These early debates provided the foundations from which important new concepts emerged in the 1990s, including the *human development paradigm*, the concept of *environmental space*, and *the new economics***.** The way we conceptualize and measure sustainability influences political decisions about the pathways that are taken towards sustainability. Sections 4 and 5 explore alternative measures as possible tools for re-routing future development thinking towards global sustainability, redirecting the meaning of 'development' away from 'unaimed opulence' (Dréze & Sen 1989, 188) and towards sustained welfare and environmental prudence. The concluding discussion draws connections between the different alternative approaches,

surveys a number of aggregate measures and considers their usefulness for shaping a future global 'development compact'.

1. The roots of development: from colonial resource management to welfare

Current patterns of global development were shaped by a history of capitalist and colonial power relations which structured uneven and inequitable flows of resources, benefit and harm over centuries. 'Development' is conventionally understood as a post-World War II concern with planned economic growth and structured international cooperation. However,

> Current patterns of use and the conditions for access to land, water, forests and other natural resources in most developing countries are rooted in their colonial past and the continuation of such practices after independence. Imperial administration or colonial conquest, especially in the 'settled states', imposed new relationships between colonized people, nature and natural resources (Woodhouse & Chimhowu 2005, 180).

Economic development referred to the *development of resources*, not people. In the nineteenth and early twentieth centuries, 'development' meant colonization - 'opening up natural resources', promoting labour migration and developing infrastructure such as railways, ports and roads to facilitate their exploitation (Arndt 1981: 462). Colonial law secured control of forests, water and minerals, often overturning traditional norms governing community access to critical livelihood resources (Randeria 2003, 40-3). Conservation policies were colonial acts which often excluded, dispossessed and sometimes forcibly eliminated or displaced native populations as they enclosed 'wilderness' and valuable resources within 'conservation fortresses' (Haller *et al.* 2008; Dowie 2009).

Yet imperialists often perceived their activities to be humanitarian and benevolent. Social welfare became an explicit consideration with the advent of a new mode of colonialism, the '*dual mandate*', which cast the colonizers in a tutelary, protective role, even as they sought out resources and profits (Arndt 1981, 463; Cooke 2003). Cecil Rhodes thus famously defined imperialism as '…philanthropy plus a 5 percent dividend on investment' (Lawlor 2000, cited in Kothari 2005, 50), an ambiguous rationale which continued into the era of decolonization under the term 'trusteeship'. The British Empire affirmed its colonial responsibility for 'minimum standards of nutrition, health and education' with the 1939 Colonial Development and Welfare Act (Hancock 1947, cited in Arndt 1981 463). After World War II, 'development' became understood as the solution to a global problem of 'underdevelopment' in a new era of decolonization and international cooperation. A 'New Deal' was promised to emerging nations as President Truman declared that '[t]he old imperialism – exploitation for foreign profit – has no place in our plans. What we envisage is a program of development based on the concepts of democratic fair-dealing' (quoted in Rist 1997: 71).

The evidence that emerged suggested that unfair global economic structures persisted, perpetuating forms of neo-colonialism (Frank, 1966; Chen & Sapsford, 1997). Developing countries criticized this neo-colonial tendency and demanded global

reforms. At the UN General Assembly in 1974, developing countries collectively demanded a New International Economic Order (NIEO), involving fairer financing and terms of trade; control over, and benefits from, multinational corporations and greater equality and influence within the United Nations. The likelihood of the NIEO demands being fulfilled declined from the moment they were announced, as global recession, debt crisis and neoliberal structural adjustment policies caused the 1980s to be known as the 'impasse' or '***lost decade***' of development (Schuurman, 1993). After three decades of sustained economic progress with improving welfare, fiscal austerity, welfare cutbacks and militarization set a pessimistic scene for de-development. By the 1990s, critical development thinkers took a 'post-development' turn, declaring development to be 'a ruin in the intellectual landscape' (Sachs 1999). Development reformists, on the other hand, looked to alleviate suffering and protect the basic needs of the most vulnerable in the context of constrained development (Cornia, Jolly & Stewart, 1987).

2. Measuring economies, critiques of economism and the rise of welfare measures

The 1940s to early 1970s period is sometimes described as the 'golden age' of welfare capitalism (Marglin and Schor, 1990). National accounting became established as the basis for planned development and advances in 'modernization' and industrialization were measured in terms of aggregate formal economic production (Gross Domestic Product, GDP) and retained national income (Gross National Product, GNP or Gross National Income, GNI). National accounting techniques developed in the US, UK, Netherlands and Sweden in response to major challenges and innovations - the Great Depression, the rise of Keynesian macroeconomics and the need to resource and finance major war efforts. Although increasingly sophisticated, national economic measurement also presented certain limitations. Critiques began to emerge as the tensions between differing social concerns, theoretical issues and data constraints became increasingly evident (Vanoli 2008).

By the 1960s, some critics began to directly challenge the use of economic growth as a measure of development:

> Economic growth will not merely fail to solve social and political difficulties; certain types of growth can actually cause them. Now that the complexity of development problems is becoming increasingly obvious, the continued addiction to the use of a single aggregative indicator [economic growth] …begins to look like a preference for avoiding the real problems. (Seers 1963, 77)

The predominant 'modernization school' of development theory assumed that the benefits of overall economic growth would 'trickle down' to reach the poor (So, 1990). However, social statistics that were now being systematically collected showed that poverty, inequality and exclusion persisted and had even increased in many countries. Neo-Marxist critics of the 'dependency school' argued that unequal, neo-colonial economic structures were the cause of economic dependency - 'the development of underdevelopment' (Frank 1966).

Box 1: The 'Brazilian Miracle'

In the 1960s Brazil's authoritarian government actively promoted industrial development, leading to a period of rapid economic growth dubbed 'Brazil's Economic Miracle' (1968-1975). However, these policies favoured upper and middle class industrialists and consumers, repressing workers' wages while marginalizing the rural poor. Large income, health and educational inequalities prevailed. Commenting on the 'Brazilian Miracle', Brazil's then President, General Medici, remarked *'[T]he economy does well, but the people do poorly'* (Goulet 2002, 20). On another occasion, Medici commented that '*industry may be flourishing, but the people are not*' (Antoine 1973, also cited in Goulet 2002, 20). Increased resource extraction, industrial development and urbanization also meant pollution, deforestation, inequality and repression. Davis (1977, xii) argued that there were many 'victims of the miracle' - Amazonian Indians, agricultural and highway workers, dispossessed rural migrants, especially in the poorest Northeast, and millions of poor in the large cities. These marginalized groups failed to benefit from 'development' while the ecology of the Amazon and the earth itself came under threat. Eventually, the 'economic miracle' proved to be financially and socially unsustainable. Economic stagnation, hyperinflation and debt crisis characterized the 1980s, worsening unemployment and further widening inequality (Cardoso & Urani, 1995).

The later 1960s saw the appearance of major innovations in conceptualizing and measuring development. Seers (1969, 3-4) argued that the three major problems of development were poverty, unemployment and inequality: '[I]f one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the result "development," even if per capita income soared'. Another alternative measure was Morris' 'Physical Quality of Life Index' (PQLI), with three components: infant mortality rates, life expectancy at age one and literacy (Estes 2003). The PQLI reflected the human results of development efforts, not economic resources that were notionally available, but not necessarily mobilized for desired human outcomes. PQLI data showed that there was no automatic correlation between increasing aggregate income and welfare outcomes, suggesting that quality of life was only indirectly determined by high economic wealth, and more likely the outcome of wise government spending. Morris wanted the measure to avoid ethnocentric assumptions and be sensitive to a range of needs - not all countries might wish to develop in the same way. However, a measure still had to be internationally comparable and show how benefits were distributed. Survival and functioning were understood as basic conditions from which further forms of social satisfaction could be determined (Morris 1978, 225; 230-1).

Human rights and development were connected through the 1972 'Right to Development' proposal to the United Nations, articulating the human right to 'a particular process of development, in which all human rights and fundamental freedoms can be fully realized'. The Right to Development was declared in 1986, announcing a humanist revolution in the meaning and purpose of development, by stating that '[T]he human person is the central subject of development and should be the active participant and beneficiary of the right to development' (United Nations, 1986). Governments were expected to empower citizens and guarantee them equal benefits from development as rights. In practice, the right to development was

claimed not by individual citizens, but by developing country governments keen to assert their position in North-South bargaining. Tensions between North and South persisted as the proposed NIEO reforms failed to materialize. These tensions were made clear in Indira Gandhi's address to the 1972 UN Conference on the Human Environment at Stockholm. She asserted that poverty and need were 'the greatest polluters' while criticizing the developed countries' route to affluence through their history of colonialism and oppression (Gandhi 1972, cited in Vihma 2011, 7, n9).

In 1976, the International Labour Organization (ILO) promoted the concept of 'Basic Needs' which integrated some of these emerging debates, arguing that *'...it is no longer acceptable in human terms or responsible in political terms to wait several generations for the benefits of development to trickle down until they reach the poorest groups'* (ILO, 1976). 'Basic Needs' defined a package of 'minimum food, shelter, clothing, access to essential services such as transport, education, sanitation, health care, an adequately paid job, healthy environment and popular participation in decision making' (Grindle 1992). This expansive definition reflected the codification of the two major global human rights treaties in 1966 - the International Convention on Civil and Political Rights (ICCPR) and International Convention on Economic, Social and Cultural Rights (ICECSR). The Basic Needs idea was carried forward in attempts to define the 'minimum core' of socio-economic rights (Young 2008).

3. Sustainable development as a contested global concept

The concept of sustainable development can be understood as a response to two different global critiques of the dominant development paradigm that emerged in 1960s and 1970s. These were i) the 'Southern' critique of unequal, neo-colonial and 'dependent' development discussed in the previous section and ii) growing concerns about population growth, pollution and ecological limits to growth that were global in scope, but largely Northern in their origin.

Differing understandings of 'ecological sustainability' and 'sustainable society' began to emerge as counterpoints to the mainstream model of economic development, reflecting new concerns with population, pollution and food. The bestselling book, *The Population Bomb* (Ehrlich, 1968) presented a pessimistic and controversial Malthusian view: '…that it can be a very bad thing to have more than a certain number of people alive at the same time, that Earth has finite *carrying capacity*, and that the future of civilization was in grave doubt' (Ehrlich & Ehrlich 2009, 63, emphasis added). Malthus' *Essay on the Principle of Population* (1798) argued that population inevitably outstripped food production, since food production grew at an 'arithmetic' rate (i.e. 1,2,3,4…), while population grew at a 'geometric' rate (i.e. 1,2,4,8…). Famine, war and disease functioned as 'natural checks' on population, hence Malthus opposed the provision of famine relief. Likewise, *The Population Bomb* suggested that civilizational collapse could only be prevented by mass birth control ('the birth rate solution') or allowing the poor to die ('the death rate solution') (Ehrlich & Ehrlich 2009). The burden appeared to lie with the poorer countries, which had not yet undergone the demographic transition (Dyson, 2010). At its extremes, Malthusianism coincided with eugenicist views that the 'least fit' individuals must perish in order that the 'fitter' survive (Desrochers & Hoffbauer 2009, 39). Malthusian pessimism was refuted by optimistic 'cornucopians' who viewed

population growth as beneficial for development, providing labour and talent which compensated for the burden of food consumption (*ibid.*). This line of thinking would later be developed as the 'substitutability' argument by 'weak sustainability' theorists (Neumayer, 2003).

The poor have also been blamed for environmental degradation, although some political ecologists think this is unfair as the impact of poor people's activities on forests and soils is frequently exaggerated (Leach & Mearns, 1996), especially when compared with the environmental impacts of richer people's consumption. Early sustainability debates connected poverty, underdevelopment and environmental damage in ways that seemed to blame the victims, seeing the poor as destroyers of the environment due to necessity and ignorance. Environmental degradation in poorer countries and regions was explained as resulting from income poverty and the lack of development and modernization. This was a very different explanation from the 'development of underdevelopment' critique of neo-colonial economic and political structures (Frank, 1966), or a critical environmental political economy which saw environmental exploitation and damage as the result of modernization, neo-colonial dependence and uneven globalization (e.g. Yearley, 1991; 1996).

The early 1970s saw the introduction of systems thinking and computer based modelling as tools for analysing population, environment, growth and sustainability questions. There was a new emphasis on interdependence and carrying capacity - distinctive features of an *ecological* perspective. *The Limits to Growth* (Meadows *et al*, 1972) was a research project commissioned by an elite business group, 'The Club of Rome' concerned with potential Malthusian global collapse. Computer modelling, pioneered at the Massachusetts Institute of Technology (MIT), enabled the development of systems thinking (Meadows 2009) involving simulations of trends and interactions based upon data on global industrialization, resource depletion, pollution, food production and population growth. The simulations demonstrated that different factors were highly interdependent, necessitating a holistic, interdisciplinary, globally cooperative and long-term approach (Martell, 1994, 24-33). Impending crises needed to be addressed by radically shifting the social systems and values that underpinned unsustainable growth.

Lélé (1991, 609-610) attributes sustainable development's rise to the International Union for the Conservation of Nature and Natural Resources' (IUCN) World Conservation Strategy (1980). He differentiates *ecological sustainability*, a concept that was broadly adopted by the environmental movement, from 'social interpretations of sustainability', asserting that social understandings are 'rarely used'. Dresner (2002) has a very different perspective, identifying a somewhat earlier point of origin in the arguments for a globally *sustainable society* that had been made at the World Council of Churches Conference on Science and Technology for Human Development in 1974. Barbier (1987) attempts to reconcile the ecological and social interpretations by associating sustainable development with 'basic needs' strategies, which had to be

> …environmentally sustainable over the long-term, consistent with social values and institutions, and encourage 'grassroots' participation in the development process...there will be no sustained development of meaningful

> growth without a clear commitment at the same time to preserve the environment and promote the rational use of resources (102).

The 1974 World Council of Churches conference revisited the difficulties raised by the 'Southern' position, as articulated by Indira Gandhi at Stockholm in 1972. Poorer countries were characterized as being concerned with 'developmentalist' priorities of economic growth and poverty alleviation, regarding environmentalism as a 'luxury'. This presented a strong contrast against the anti-growth, population-controlling and conservationist concerns of 'Western' environmentalists:

> From the late 1960s, when the present-day environmentalist movement was starting, leftists and representatives of the developing countries had frequently accused environmentalists, with their concerns about 'the population bomb' and 'the limits to growth', of being unconcerned about the plight of the poor. They saw all this talk of 'limits' as a cover for traditional conservative arguments that wealth was too scarce for everyone to share in it – a thinly disguised justification for inequality (Dresner, 2002, pp 2-3).

Thin (2002, 24) argues that the 'three pillars' conception of sustainable development as economic, environmental and social development could be more correctly depicted as two pins, representing environmental limitations and social inequality, pricking a balloon of naive expectations about economic growth (see also Douthwaite,1992). At the heart of this contention lies a question of 'carrying capacity'. Have world societies already moved from an 'empty world' scenario where there is still *environmental space* into which humanity can expand, to a 'full world' (Daly, 1996) with no environmental space left? How much (if any) total environmental space is left for human use, without diminishing future possibilities?

The concept of environmental space makes the sustainability question concrete (Bührs 2009, 112). Defined as 'access to fair shares for all in the resources upon which a healthy quality of life depends' (McLaren, 2003, 19), the concept has influenced the measurement of sustainability in fundamental ways (see also Gaube *et al.* in this volume). Recent estimates worryingly indicate that 'ecological overshoot' has already been reached and humanity is now sinking deeper and deeper into 'ecological debt'. Ecological footprint methods estimate that biocapacity is shrinking while global population continues to grow, to the extent that in the year 2010, 'Ecological Debt Day' was reached by 21st August. From then until the 31st December, humanity was living beyond sustainable limits (http://www.footprintnetwork.org/en/index.php/GFN/page/earth_overshoot_day/).

The 1987 World Commission on Environment and Development (WCED) popularized the definition of sustainable development as: *development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs*' (WCED 1987:8). Fifteen years later, at the 2002 Johannesburg World Summit on Sustainable Development (WSSD), sustainable development was understood in terms of the need to '…[improve]*the quality of life for all the world's people without increasing the use of our natural resources beyond the earth's carrying capacity*' (WSSD 2002). The reference to 'quality of life for all the world's people' raised questions about how to determine 'quality of life', while implying the

need for global justice, and introducing the more specific ecological term, 'carrying capacity' to denote environmental limits to development.

Putting sustainability into practice depends on having appropriate and trustworthy data about the quality of life, needs and deprivations and the state of environmental 'carrying capacity'. A useful and relevant conception of sustainable development requires adequate concepts and measures, but also adequate knowledge about development inputs, outcomes and the state of global ecology. However, there is considerable disagreement and insufficient data in every respect, not least in relation to ecological knowledge. May's recent assessment (2007) points to a basic lack of knowledge about species, impacts and dynamics, both in terms of data and conceptual/ theoretical understanding. The eminent ecologist also notes that the most important unanswered questions – of ethics, economics and politics – are rarely addressed within ecological studies.

4. The human development paradigm and sustainability

Amartya Sen, Mahbub ul-Haq and Martha Nussbaum are the key exponents of the human development paradigm.This approach, launched in 1990 under the auspices of the United Nations Development Programme (UNDP), incorporated aspects of the PQLI and responded to Seers' earlier question about the relationship between economic growth and other human needs or goals. Sen accepts that income is important, but regards it as a means and not an end - income is instrumental, not intrinsic. Sen's 'capabilities approach' (Box 2) formed the basis of the Human Development Index (HDI), a composite measure of welfare and income designed to integrate social and economic dimensions of well-being. The HDI components are: health, indicated by infant mortality and life expectancy; knowledge, indicated by school enrolment and adult literacy; and income, indicated by GNP. The HDI re-united welfare components with income measures, because the PQLI on its own 'misses the synergy between social and economic progress' (Ul-Haq 1995,128).

Ul-Haq admits that the HDI is a still a crude measure. Like Morris, Sen and Ul-Haq designed the HDI to displace the even cruder measures of GDP/GNP, and to stimulate development policies that would build human capabilities, supporting investments in health and education, while recognising economic growth as a means for enabling human development. The human development approach aspired to be 'the most holistic model that exists today…a practical reflection of life itself' (Ul-Haq, 1995: 21). The door was left open to refine or expand the human development paradigm beyond the HDI. Two decades later, this has led to the evolution of new measures that expand and deepen the approach to include dimensions of poverty, gender and inequality. The translation of the capabilities idea into simple, replicable and comparable cross-country and within-country measures of human development has proved a challenging task, opening out a whole field of work on concept, measurement, theory and policy practice (e.g. Comim, Qizilbash & Alkire 2008).

BOX 2: The capabilities approach - defining human development.

The philosopher and economist, Amartya Sen defined development in terms of ***human capabilities*** and ***freedom***, taking freedom to be the ultimate goal of human development. 'Development' means the expansion of people's capabilities to lead the kinds of lives they have reason to value (Sen 1999, 18), so policies should enhance capabilities, address deprivation and remove unfreedoms such as hunger, ill-health, illiteracy and gender discrimination. The human ability to choose and reason is valued in itself, as well as a democratic means of making decisions, hence development policies should be influenced by the exercise of public deliberation – 'the effective use of participatory capabilities by the public' (*ibid*.). Sen's capability approach strongly influenced the human development paradigm. The inaugural Human Development Report (1990) defined human development as

…a process of enlarging people's choices. In principle, these choices can be infinite and change over time. But at all levels of development, the three essential ones are for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living.

These three essential elements were captured in the HDI. Since human development was defined in terms of 'enlarging people's choices', all additional options valued by people are also important, for example political, economic and social freedom, opportunities to be creative and productive, and enjoyment of personal self respect and guaranteed human rights. Income remains important to the concept of human development, but human lives are seen in far broader terms than income alone. The human development approach therefore redefined development goals beyond income and wealth, to focus on human freedom. The wider 'human development paradigm' encompasses socio-political freedoms and self-respect – Adam Smith called this the ability to mix with others without being 'ashamed to appear in public'. Such subjective or dignitarian conceptions of human being and flourishing are also key to human rights.

Sources: UNDP Human Development Report 1990, 10; Sen 1999.

The human development approach is impressive in terms of philosophical richness and openness to a diversity of human goals, but the question is whether such an open-ended and expansive conception of human freedom can be reconciled with ecological limits. Neumayer observes that the human development and sustainable development literatures have, for the most part, stayed separate. Understandings of 'sustainable economic development' and 'sustainable human development' remain too weak with respect to ecological limits (UNDP 2010, 1).

Sustainability appeared as a prominent issue in only five out of eighteen annual Human Development Reports (HDR) published to date. The most significant of these was the 1994 HDR, which set an ambitious agenda for the 1995 World Summit on Social Development (Copenhagen Summit). Subsequent Human Development Reports have examined *inter alia*, the quality of economic growth, consumption, water scarcity and climate change; consistently highlighting the inequalities suffered by the poor and the responsibilities of the richer nations (Alkire, 2010). The 1994 Report marked the fiftieth anniversary of the United Nations with a proposed World Social Charter, presenting a renewed vision for global cooperation, including a 'human development compact' to implement essential human development targets by

the year 2020. A new, post-Cold War vision of collective 'human security' (UNDP 1994, 5-6) was advanced, integrating environmental protection and development goals with peace, human rights and democratization within a 'context of sustainable development that leads to human security' (op.cit.,1). The 1994 report called for a radical global restructuring, combining peace and human development with an understanding of limits and futurity:

> 'development patterns that perpetuate today's inequities are neither sustainable nor worth sustaining...current consumption cannot be financed for long by incurring economic debts that others must repay. It also means that sufficient investment must be made in the education and health of today's population so as not to create a social debt for future generations. And it means that resources must be used in ways that do not create ecological debts by overexploiting the carrying and productive capacity of the earth (UNDP 1994, 18).

There are two basic options for linking sustainable development and human development to yield a model of sustainable human development: combining the HDI with i) a weak sustainability measure, such as Genuine Savings, or ii) with a strong sustainability measure such as Ecological Footprint (Neumayer 2010, 10-11). Weak sustainability assumes that natural capital is *substitutable* by other forms of capital such as human knowledge (e.g. more education) or manufactured capital (improved technology and machinery). Strong sustainability rejects the notion of substitutability, regarding the planet's 'critical natural capital' as finite. Sustainability cannot be said to be present if natural capital declines below a certain level.

The key question for sustainable human development is how to balance long term, inter-generational sustainability with immediate demands for intragenerational distribution, given the starting problems of existing human deprivation: '[H]uman lives are battered and diminished in all kinds of different ways, and the first task… is to acknowledge that deprivations of very different kinds have to be accommodated within a general overarching framework' (Sen, 2000). Low human development countries will find it difficult to achieve even optimistic weak sustainability scenarios. They cannot be expected to consume less and they lack domestic means to invest in substitutes (Neumayer, 2010, 14). Low human development countries need to gain sufficient initial investments to achieve weak sustainability, before they can be expected to achieve stronger sustainability. Over-consuming high human development populations have to make a fundamental transformation towards strong sustainability (Neumayer 2010, 16), but without lowering their welfare attainments.

5. Environmental space, the New Economics and human development – can alternative aggregate measures shape a new global sustainable human development compact?

Environmental space is a helpful concept for conceptualizing the necessary transition to sustainable human development. Environmental space analysis seeks to allocate resource consumption on geographical lines, setting rules for expanding or contracting resource use, to fit within ecological limits. Environmental space analysis links to concepts like the quality of life, the precautionary, proximity and subsidiarity

principles and takes into account non-renewable resources (Bührs 2009, 113). The technique for calculating 'fair shares' and equity is disputed, but a per capita basis is regarded by many to be 'a moral and political necessity' (Bührs 2009, 113, citing Carley& Spapens 1998, 69). Environmental space analysis employs a range of indicators (Bührs 2009), one well-known composite indicator being the ***ecological footprint*** (Wackernagel & Rees, 1996).

A survey of 155 countries (Neumayer, 2001) worryingly suggested that many low human development countries will find it difficult just to maintain their low levels of human development. Estimates show that resource use by the 'developed' North is broadly five times greater than that in the South (McLaren 2003, 24), but the problem is not strictly geographical – the problem of inequality exists between countries and within them, since every country has a share of over-consuming wealthy individuals and a share of under-consuming poor. One major proposal for strong sustainability is to reduce the consumption of people with a larger than one-planet footprint, and try to prevent them from entering an increasingly burdensome 'consumption treadmill'. An alternative proposal is to promote forms of well-being and quality of life that can be achieved without intensifying resource depletion and attendant unfairness.

The 'New Economics' describes an alternative approach that re-orients economics as a discipline, by emphasising well-being, not money, on the understanding that

> ... human happiness and well-being are not measured very well in terms of money wealth, and just as money is subservient to morality, spirituality and humanity, so economics is part of a wider ecosystem…It is an economics that broadens our definitions of wealth, rather than narrows them down to an abstraction that may or may not relate to human fulfilment (Boyle & Simms 2009, 18-19).

The origins of the new economics are diverse. Ruskin's (1862) statement that 'there is no wealth but life' and his critique of '*illth*' (the poverty, ill-health, pollution and despair that were the attendant downside of economic wealth) are cited as founding ideas. Mahatma Gandhi's ideas of self-restraint, self-reliance and voluntary simplicity, and E.F. Schumacher's 'Buddhist economics – economics as if people really mattered' are both influential. 'Happiness' entered the debate in the early 1970s when the ruler of Bhutan announced that 'Gross National Happiness is more important than Gross National Product' (Thinley 1998; NEF 2006, 13; Priesner 2008). Boyle & Simms (2009, 22-25) note that the 'New Economics' came together at The Other Economic Summit (TOES), in London in 1984. The 'Happy Planet Index' is one alternative aggregate measure of progress developed by the New Economics Foundation (NEF). The Happy Planet Index combines available data about ecological footprint, life expectancy and subjective life satisfaction. Countries that score highly have managed to achieve relatively long and happy lives with smaller ecological footprints (see Box 3).

Box 3: The Happy Planet Index 2.0 (2009)

The HPI 2.0 provides data for 143 countries, covering 99 per cent of world population. Scores range from 0 to 100 – with high scores only achievable by meeting all three targets embodied in the index – high life expectancy, high life satisfaction

(combined as 'Happy Life Years'), and a low ecological footprint. No country achieved high scores for all three criteria.

Country	Life Sat	Life Exp	HLY	EF	HPI	HPI Rank
Costa Rica	8.5	78.5	66.7	2.3	76.1	1
Netherlands	7.7	79.2	61.1	4.4	50.6	43
Ireland	8.1	78.4	63.8	6.3	42.6	78
Zimbabwe	2.8	40.9	11.6	1.1	16.6	143

The countries where people enjoy the happiest and healthiest lives are mostly richer developed countries, but at an unsustainable ecological cost. The lowest scores were suffered by Sub-Saharan African countries, the bottom three achievers being Botswana, Tanzania and Zimbabwe. Some less wealthy countries in Latin America and the Caribbean have high levels of life expectancy and life satisfaction with smaller ecological footprints, the top three achievers being Costa Rica, Dominican Republic and Jamaica. Europe and the rich 'developed' countries perform only averagely, due to their large ecological footprints.

Source: NEF, 2009 http://www.happyplanetindex.org/public-data/files/happy-planet-index-2-0.pdf

The Happy Planet Index concurs with Neumayer's findings (2001), showing a global planet that is mainly 'unhappy', with most countries failing to deliver well-being at a sustainable rate of resource consumption. No country is presently achieving high life expectancy, high subjective satisfaction and one-planet ecological footprint. It is striking to note that rich OECD states saw a 15 per cent increase in life-satisfaction between 1961 and 2005, but at a cost of a 72 per cent increase in ecological footprints during the same period. The three largest countries in the world (China, India and the USA) saw their scores worsen between 1990 and 2005, although most other countries experienced marginal improvements (NEF 2009).

A recent review of different aggregate sustainability measures (Pillarisetti & van den Bergh, 2010) cautions that the aggregate indexes they surveyed (Genuine Savings, Ecological Footprint, Environmental Sustainability Index, Genuine Progress Index and Index of Sustainable Welfare) suffer from major methodological limitations and weaknesses. Lawn (2006, 428) similarly criticizes green national accounting measures, including Genuine Savings, green GDP, Ecological Footprint, Index of Sustainable Economic Welfare and Genuine Progress Indicator (see Table 1) for being under-theorized. There is weak comparability of values within as well as across indicators, which makes the evaluation and ranking of sustainability performance across nations deeply problematic. Care must be taken when choosing measures of sustainable development, as different measures yield very different results. Climate change - arguably the most serious threat currently faced by humanity - is not or only arbitrarily captured by most measures (Pillarisetti and van den Bergh 2010: 50).

Table 1 Comparison of major aggregate sustainable development measures

Aggregate SD measure and origins	Components	Benefits	Critiques
Genuine Savings (GS) World Bank, 1997	Domestic savings, depreciation of physical capital, education spending, natural capital depletion (energy, minerals, forest),CO_2 damage, willingness to pay to avoid pollution	Adjusts GNI to reflect welfare, resource depletion, pollution	Substitutability assumption unrealistic. Income biased. 'Erroneous and counterintuitive results'(Pillarisetti & van den Bergh 2010: 60)
Environmental Sustainability Index (ESI) Yale Centre for Environmental Law & Policy, 2005	76 data sets forming 21 indicators of i)environmental systems, ii)reducing environmental stress, iii)reducing human vulnerability to environmental stress, iv)societal/ institutional capacity to respond to environmental challenges, v)global stewardship	Many dimensions covered	Highly disparate indicators given equal weight. Income biased.
Index of Sustainable Economic Welfare (ISEW) Daly & Cobb (1989) Genuine Progress Indicator – variant of ISEW (Redefining Progress, 1995)	Personal consumption, public expenditures, private defensive expenditures, capital formation, domestic labour, environmental degradation, depreciation of natural capital	Accounts for welfare, defensive expenditures, social and environmental costs	Choice of welfare items questioned. Crude valuation methods, requiring 'heroic assumptions (Lawn 2006, 454)
Ecological Footprint (Wackernagel & Rees, 1996)	Cropland, pasture, forests, fisheries, built space, energy	Easy to understood ecological 'budget' / environmental space and estimate overshoot	Assumptions underlying land, energy criticised. (*Ecological Economics*, 32: 341-89) Welfare not captured
Happy Planet Index(NEF 2006;	Ecological footprint, life expectancy, life satisfaction	Novel measure: eco-efficiency of	No country performs well on all three criteria –

2009)		human well-being Objective and subjective data	unachievable?
Gross National Happiness (Centre for Bhutan Studies, Thimpu, 2006)	Living standard, health, education, ecosystem diversity and resilience, time use and balance, good governance, community vitality, psychological well-being	Holistic, culturally rich, captured imagination. Indicators developed as part of national policy programme	3 decades before concrete process to define goals, variables and indicators (2004-8.)

Sources: Pillarisetti & van den Bergh,2010; Centre for Bhutan Studies, Thimpu, (2006); NEF 2006; NEF 2009; Lawn 2006, 454; Daly & Cobb (1989); Redefining Progress, 1995.

Conclusion – sustainable human development and global justice.

This chapter has discussed the emergence of different conceptions of development. The debates about the meanings, concept and measurement of sustainable development are not merely philosophical or semantic disagreements. They have a serious policy function to concretely articulate, and advocate shared common goals of human welfare and happiness without 'costing the earth'. Yet a lot more progress is needed in order for sustainable development to be a coherent concept that can be operationalized in a practical manner. A recurrent theme throughout the debates is the insufficiency of income measures and the turn to more humanistic alternatives. *Sustainable human development* has been proposed as the ultimate goal, however human development's expansive capability and freedom-based conceptions of justice, may come up against the limits of available environmental space. The tighter the limits, and the more inequality there is, the more difficult we should expect the just redistribution of resources, benefits, costs and harms to be.

Human development was very much a concept seeking to push policy commitments and the 1994 UNDP World Development Report and World Social Charter proposal suggested that human development and sustainability goals could be made to converge, since: '…there is no tension between human development and sustainable development. Both are based on the universalism of life claims' (UNDP, 1994: 19). Yet, attempts at convergence have been tentative and are some distance from the mainstream. Environmental concerns have not yet been systematically integrated into the human development agenda, despite the ubiquity of 'sustainable development' in every text. Some human rights scholars have made serious efforts to define the 'minimum core' of human needs or values, and sought to make these the subject of substantive, justiciable national and international responsibility (Young, 2008). Others have examined the connections between human rights and environmental protection and sought to clarify the scope and content of rights-based approaches to environmental protection (Boyle & Anderson, 1998; Anton & Shelton 2011).

Advocates of sustainable human development hope that the divergence between economic and human development can be resolved by putting economic development 'back in its place' as a means of human development. However, economic growth remains a fundamental component of human development that may be impossible to sustain. From an ecological perspective, recognition for absolute carrying capacity is essential, but dealing with these limits requires more complicated questions that remain unanswered in ecology – of ethics, economics and politics. The concepts of environmental space and new economics try to bring together these concerns to inform and achieve more equitable and humanly satisfying ways of meeting our needs and 'developing', without costing the earth and incurring enormous injustice to the poor, the future generations and to the ecosystems and the life they sustain. Aggregate sustainable development measures provide governments, policymakers and citizens with tools to measure well-being and environmental impact in a consistent and regular way. Measures such as the Happy Planet Index set a fairly tough benchmark for future policy. Developed nations are required to set an HPI target of 89 by 2050, reducing per capita ecological footprint to 1.7 global hectares, increasing mean life satisfaction to 8 on a scale of 0-10, and increasing life expectancy to 87 years. Developed nations and the international community are expected to support developing nations to achieve the same target in the longer term, by 2070 (NEF 2009, 6).

As Dresner notes (2002, 172), attempts to bring about sustainability will meet strong opposition from powerful vested interests favouring the continuation of unsustainability. Sustainability requires present generation to rethink its own interests in well-being, but affluent consumers are likely to resist any changes. Meanwhile the poor and less economically developed continue to aspire to 'catch-up' with Northern levels of consumption, which would imply the requirement for anything between two and four planets at current rates. Both will try to ignore the long-term consequences. This is why sustainability efforts cling so optimistically to 'weak sustainability' hopes that new knowledge and technology can substitute for depleted resources and deliver cleaner, more efficient economic growth. Progress is lagging, even on agreed measures to achieve weak sustainability (see UNDP 2010). Without global governance measures to minimise rebound effects and countermand a globalized environmental 'race to the bottom', it is more likely that unjust and unsustainable outcomes will dominate. Global limits have to be recognised and environmental space allocated more fairly, but this requires actually changing the rules of the game, redistributing the patterns of risk, responsibility and reward optimally not only in an economic sense, but in a more ethically optimal manner (Goulet 1995).

Post-colonial demands for justice influence the North-South divide on sustainable development. Inequities caused by neo-colonialism are issues of retribution for past injustice, as contrasted against appeals to achieve distributive justice within the present and with respect to future generations (Bührs 2009, 122, citing Wissenburg 2006). This demand underpins the Rio principle of 'common, but differentiated responsibility'. However, this principle cannot be employed by developing country governments to avoid taking a precautionary approach, or absolve them from the obligation to deliver distributive justice and basic needs to present and future citizens within their borders. Future approaches to sustainable human development might seek to integrate environmental space analysis with minimum core obligations for social, economic and cultural rights and the participatory, democratic and humanistic

approach entailed by the Right to Development. In sum, what is called for is a new development compact based on North-South cooperation for fundamental social and economic change based on the principles of sustained welfare, greater equity and fairness.

References:

Alkire, Sabina (2010) 'Human Development: Definitions, critiques and related concepts'. Human Development Research Paper 2010/01. Geneva: United Nations Development Programme.

Anton, Donald & Shelton, Dinah (eds) (2011) Environmental Protection and Human Rights. Cambridge: Cambridge University Press

Arndt, H (1981) 'Economic Development: A semantic history' Economic Development and Cultural Change, 29 (3): 457-466

Barbier, Samuel (1987) 'The Concept of Sustainable Economic Development', Environmental Conservation 14 (2): 101-110

Boyle, Andrew & Anderson, Michael (eds) (1998) Human Rights Approaches to Environmental Protection. Oxford: Oxford University Press

Boyle, David & Simms, Andrew (2009) The New Economics: A Bigger Picture. London: Earthscan

Bührs, Ton (2009) Environmental Space as a Basis for Legitimating Global Governance of Environmental Limits. Global Environmental Politics 9 (4): 111-35

Cardoso Eliana & Urani, Andre (1995) 'Inflation and Unemployment as Determinants of Inequality in Brazil: The 1980s', in Rudiger Dornbusch and Sebastian Edwards, (eds) Reform, Recovery, and Growth: Latin America and the Middle East University of Chicago Press: 151 - 176

Centre for Bhutan Studies, Thimpu (2006) GNH Index variables http://www.grossnationalhappiness.com/gnhIndex/gnhIndexVariables.aspx

Chen, John-Ren & Sapsford, David (1997) Economic development and policy: Professor Sir Hans Singer's contributions to development economics World Development, 25 (11): 1853-1856

Comim, Flavio, Mozaffar Qizilbash and Sabina Alkire, (Eds.) (2008) The Capability Approach: Concepts, Measures and Applications, Cambridge: Cambridge University Press.

Cooke, Bill (2003) 'A new continuity with colonial administration', Third World Quarterly 24 94) 47-61

Cornia, A., Jolly, R. & Stewart, F. (1987) Adjustment with a Human Face: protecting the vulnerable and promoting growth. Oxford: Unicef/Oxford University Press.

Daly, Herman E. (1996) Beyond Growth: The economics of sustainable development. Boston MA., Beacon Press

Daly, Herman & Cobb, John (1989) For the Common Good. Beacon Press, Boston

Davis, (1977) Victims of the Miracle: Development and the Indians of Brazil. Cambridge: Cambridge university Press

Desrochers, Pierre & Hoffbauer, Christine (2009) The Post War Intellectual Roots of the Population Bomb. Fairfield Osborn's 'Our Plundered Planet and William Vogt's 'Road to Survival' in Retrospect. Electronic Journal of Sustainable Development 1 (3), 37-61

Douthwaite (1992) The Growth Illusion. Dublin: Lilliput Press

Dowie, Mark (2009) Conservation Refugees. Berkeley: MIT Press

Dresner, Simon (2002) The Principles of Sustainability. London: Earthscan

Drèze, Jean, and Amartya Sen (1989) Hunger and Public Action, Clarendon Press, Oxford

Dyson, T (2010) Population and Development: The Demographic Transition. London: Zed Books

Ehrlich, Paul R. (1968) The Population Bomb. Ballantine Books

Ehrlich, Paul R. & Ehrlich, Anne H. (2009) The Population Bomb Revisited. Electronic Journal of Sustainable Development 1 (3), 63-71

Estes, Richard J. (2003) Global Change and Indicators of Social Development, in Weil, Marie (ed) The Handbook of Community Practice. Thousand Oaks: Sage Publications

Frank, André Gunder (1966) 'The Development of Underdevelopment' Monthly Review 18 (7), 27-37

Goulet, Denis (1995) Development Ethics: A Guide to Theory and Practice, New York: Apex Press

Goulet, Denis (2002) 'What is a just economy in a globalized world?' International Journal of Social Economics 29, 1-2, 10-25.

Grindle, John (1992) Bread and Freedom. Dublin: Gill and Macmillan/Trocaire

Haller, Tobias et al (2008) Who gains from community conservation? Intended and unintended consequences of participative approaches in Peru and Tanzania. Joutnal of Environment and Development 17 (2), 118-144

Hamilton, Kirk & Atkinson, Giles (2006) Wealth, Welfare and Sustainability: Advances in measuring sustainable development. Cheltenham: Edward Elgar

ILO International Labour Organization (1976), Employment, Growth and Basic Needs: a One World Problem. Geneva: ILO.

Jacobs, Michael (1991) The Green Economy. London, Pluto.

Kothari, Uma (ed.) (2005) A Radical History of Development Studies. London: Zed Books

Krueger, Rob & Gibbs, David (Eds.) (2007) The Sustainable Development Paradox: Urban political economy in the United States and Europe. New York & London: The Guildford Press

Lawn, Philip (2006) Sustainable development indicators in ecological economics. Cheltenham: Edward Elgar

Lawn, Philip (2007) A stock-take of green national accounting initiatives. Social Indicators Research 80: 427-460

Leach, Melissa & Mearns, Robin (1996) The Lie of the Land: Challenging Received Wisdom on the African Environment. Oxford and Portsmouth: James Currey/ Heinemann

Lélé, Sharachchandram (1991) "Sustainable Development": A Critical Review. *World Development*, Vol. 19, No. 6, pp. 607-621, 1991

Marglin, Stephen and Schor,Juliet (1990) The Golden Age of Capitalism: reinterpreting the post-war experience. Oxford, Clarendon Press

May, Robert (2009) 'Unanswered questions and why they matter' in May, Robert and McLean, Angela, (Eds.) Theoretical Ecology: Principles and Practice. Oxford: Oxford University Press: 205-215

Martell, Luke (1994) Ecology and Society. Cambridge: Polity

McLaren, Duncan (2003) 'Environmental Space, Equity and Ecological Debt' in Agyeman, J.; Bullard, R.D.; & Evans, B. (Eds*.) Just Sustainabilities: Development in an Unequal World*. London: Earthscan, 19-37.

Meadows, Donella (2009) Thinking in Systems: Primer, edited by Diana Wright. River Junction, VT:Chelsea Green Publishing Co.

Meadows, D.H, Meadows, D. Randers, J, Behrens, W.W. (1972) The limits to growth. A report for the Club of Rome's project on the predicament of mankind

Morris, Morris D., 'A physical quality of life index'. *Urban Ecology*, 3 (1978) 225-240

Munck, R. & O'Hearn, D (Eds.) (1999) Critical Development Theory: Contributions to a New Paradigm. London: Zed Books

Neumayer, Eric (2001) The human development index and sustainability — a constructive proposal. *Ecological Economics* 39, 101–114

Neumayer, Eric (2nd Ed. 2003) Weak versus Strong Sustainability:exploring the limits of two opposing paradigms. Cheltenham: Edward Elgar

Neumayer, Eric (2010) Human Development and Sustainability, Human Development Research Paper 2010/05. Geneva, United Nations Development Programme.

NEF New Economics Foundation (2006) The Happy Planet Index

NEF New Economics Foundation (2009) The Happy Planet Index 2.0

Pillarisetti, J.Ram & van den Bergh, J.C.J.M. (2010) Sustainable development: what do aggregate indexes tell us? Environment, Development, Sustainability 12: 49-62

Priesner, Stefan (1999) Gross National Happiness – Bhutan's Vision of Development and its Challenges, in Kinga, S. Galay, K., Rapten, P and Pain, A (eds), Gross National Happiness.

Randeria, Shalini (2003) Cunning States and Unaccountable International Institutions: Legal Plurality, Social Movements and Rights of Local Communities to Common Property resources. *Archives of European Sociology* XLIV 1, 27-60

Redefining Progress (1995) Gross production vs genuine progress. In Cobb, J., Halstead, T., & Rowe, R. (Eds.) Genuine Progress Indicator: Summary of Data and Methodology. Redefining Progress, San Francisco.

Rist, Gilbert (1997) The History of Development: From Western Origins to Global Faith. London: Zed Books

Ruskin, John (1862) Unto This Last: Four Essays on the First Principles of Political Economy. Reproduced in *The Works of John Ruskin*, Vol 17.(eds. E. T. Cook and Alexander Wedderburn) (George Allen, 1903–1912).

Sachs, Wolfgang (1999) *Planet Dialectics: Explorations of Environment and Development* London: Zed Press

Schuurman, Frans (Ed.) (1993) Beyond the impasse: new directions in development theory. London: Zed Books

Schuurman, Frans (2000) 'Paradigms lost, Paradigms regained? Development studies in the twenty-first century' *Third World Quarterly* 21 (1), 7-20

Scoones, Ian (2010) 'Sustainability' in Cornwall, A. and Eade, D. (Eds) *Deconstructing Development Discourse: Buzzwords and Fuzzwords*, 153-162

Seers, D (1963) 'The Limitations of the Special Case' *Bulletin of the Oxford Institute of Statistics and Economics* 25 (2), 77-98

Seers, D (1969) The Meaning of Development. *International Development Review* 11(4): 3-4.

Sen, A (1999) Development as Freedom. Oxford: Clarendon Press

Sen, A. (2000). 'A Decade of Human Development'. *Journal of Human Development*, 1(1), 17-23.

So, Alvin (1990) Social Change and Development. London & New Delhi, Sage

Thin, Neil (2002) 'Social Concepts and Principles – sustainable development objectives and principles' in Social progress and Sustainable development London: ITDG Publishing

Thinley, Jigme (1998) Keynote Address to UNDP regional meeting for Asia and the Pacific October 1998

Ul Haq, Mahbub (1995), 'The Birth of the Human Development Index', in Fukuda-Parr, Sakiko and A.K. Shiva Kumar, Eds. 2003, *Readings in Human Development: Concepts, Measures and Policies for a Development Paradigm*, Oxford: Oxford University Press

UNDP United Nations Development Programme (2010) Human Development Report 2010 The Real Wealth of Nations: Pathways to Human Development Oxford: Oxford University Press/ UNDP

UNDP United Nations Development Programme (1994) Human Development Report 1994: New Dimensions of Human Development. Oxford: Oxford University Press/ UNDP

UNDP United Nations Development Programme (1990) Human Development Report Oxford: Oxford University Press

United Nations (1974) Declaration on the Establishment of a New International Economic Order.1 May 1974 A/RES/S-6/3201

United Nations (1986) Declaration on the Right to Development. 4 December 1986 A/RES/41/128

Vanoli, André (2008) 'National accounting, history of' In Steven N. Durlauf and Lawrence E. Blume (eds) The New Palgrave Dictionary of Economics, Second Edition.
http://www.dictionaryofeconomics.com/article?id=pde2008_N000160&edition=current&q=History%20of%20national%20accounting&topicid=&result_number=1

Vihma, Antto (2011) India and the Global Climate Governance: Between Principles

and Pragmatism. *Journal of Environment & Development* 20(1) 69–94

Wackernagel, M. & Rees, W. (1996) Our Ecological Footprint: Reducing Human Impact on the Earth. New Society Publishers.

WCED World Commission on Environment and Development (1987) Our Common Future, Report of the World Commission on Environment and Development. Annex to General Assembly document A/42/427, August 2, 1987

Woodhouse, Phil & Chimhowu, Adios (2005)'Development studies, nature and natural resources: changing narratives and discursive practices' in Kothari, Uma (ed.) A Radical History of Development Studies. London: Zed Books, pp. 180-199.

WSSD World Summit on Sustainable Development (2002) Johannesburg Declaration on Sustainable Development: From our origins to the future http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/POI_PD.htm

Yearley, Steven (1991) The Green Case: A Sociology of Environmental Arguments, Issues and Politics, London: Harper Collins

Yearley, Steven (1996) Sociology, Environment, Globalization. London: Sage

Young, Katharine (2008) The Minimum Core of Economic and Social Rights: A Concept in Search of Content. *Yale Journal of International Law* 33, 1: 113-175