

SECURING A SUSTAINABLE FUTURE THROUGH A NEW GLOBAL CONTRACT BETWEEN RICH AND POOR

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ABSTRACT

Global sustainable development depends on the capacity of natural, social and economic systems to adapt to external stimuli. However, building this adaptive capacity in the developing world context of sub-Sahara Africa will require substantial investment in these systems, which most countries in this region simply cannot afford. Given that their social, economic and environmental security depends on developments in developing countries, we argue that developed countries should assume a leading role in making such investments in developing countries, in order to secure their own long-term well-being. This will require cooperative governance between developed and developing countries, and targeted investment in a number of key areas. This calls for a new global contract between rich and poor nations in order to achieve global stability and sustainability.

1 Consumerism, sustainability and resilience

Nations throughout the world face the challenge of balancing economic development with ecosystem functionality over time. The current compromised state of the global environment is proof that earth's natural resource base is nearing a threshold of fundamental change, and can no longer sustain mass consumerism associated with Western lifestyles. Balancing this trade-off is even more challenging in developing countries, which increasingly aspire towards the 'mass consumerism' and 'throw away' cultures of the 'West' (Ayres, 1995). These aspirations are reflected in prevailing policies in developing countries, which often favour social and economic objectives over ecosystem integrity.

A fundamentally different perspective on the definition of a 'wealthy lifestyle' is needed to steer Western society away from its current pathway of materialistic self indulgence, and to guide developing countries along a more sustainable path (see Dwivedi and Khator (2006)). The urgent challenge for the research community, policy makers and managers is to develop innovative, realistic and convincing arguments that will alter society's current unsustainable development trajectory by challenging the assumption that well-being will continually increase as material consumption grows. Easterlin (1974) presented evidence that, at a national level, marginal gains in consumption lead to increased well-being at a declining rate once

basic needs are met. This suggests that people living in consumption-orientated societies are not necessarily happier than people in countries with lower consumption levels. Easterlin explained this apparent paradox by arguing that 'happiness' is based on relative rather than absolute consumption. In other words, conspicuous consumption based on 'keeping up with the Joneses' does not actually increase overall social well-being; but results in a 'rat-race' of ever-expanding consumption with 'enough' never being 'enough' (Ayres, 2002; Goodstein, 2008).

Thus, innovative and practical alternative indicators of well-being, which recognise that social living standards are not as strongly related to growth in material consumption as conventionally understood, need to be developed (Morse *et al.*, 2001). Measuring well-being in terms of consumption is only appropriate up to the point where basic human needs are met, whereafter the relative importance of material consumption starts declining. Additional, non-materialistic measures of well-being (e.g. spiritual and social measures) need to be given more prominence once basic needs are met (Maslow, 1943). This means that, once basic needs are met, social well-being can be increased without increasing consumption levels, and that the definition of social well-being could be partially de-linked from consumption, which will invalidate the apparent trade-off between well-being and environmental integrity. In doing so, a vision that social well-being is likely to *increase* with improved environmental integrity will be created. Ecological economists have challenged society to fundamentally redesign what is currently marketed, perceived and aspired to as the 'ideal lifestyle,' based on material wealth; in such a way that they restore rather than degrade natural systems, and augment rather than deplete natural capital.

A further measure for making development 'more sustainable' is to mandate the consideration and enforcement of the precautionary principle with respect to sustainability at all decision-making levels (Princen, 2003; Van der Sluijs, 2007). Such an approach acknowledges the dependence of social welfare on environmental services and is based on a stronger definition of sustainability, i.e. only limited substitution between economic, natural and human capital is allowed (Pearce, 1993; Stern, 1997). Under this approach, physical measures of ecosystem resilience and resource stocks are weighed against population and consumption pressures as measures of sustainability. The concept of 'resilience' is central here and refers to the ability of systems (economic, social or ecological) to maintain functionality in the face of external stimuli (Brozović and Schlenker, 2007; Farber, 1995; Gunderson, 2000; Holling, 1973; Mäler, 2008; Mäler *et al.*, 2007; Norton, 1995; Perrings, 1998; Perrings, 2006; Plummer and Armitage, 2007). These external stimuli may include economic disturbances (e.g. depressions), ecological disturbances (e.g. pollution), and social disturbances (e.g. war), which increase system vulnerability. However, resilience is not synonymous with minimising impacts to maintain the status quo; rather, it implies the ability to adapt to constant change (Goodstein, 2008; Islam *et al.*, 2003).

We define 'sustainable development' as progression along a development path that maintains or improves the diversity and scope of prospects which enable individuals and communities to achieve their ambitions, while maintaining the resilience of economic, social and environmental systems (Burns *et al.*, 2006; De Lange *et al.*, 2008; Munasinghe, 2002; Walker *et al.*, 2008). Sustainability is therefore based on the adaptive capacity of economic, social and ecological systems. However, this

generic definition only becomes meaningful once operating rules are determined which guide the interactions between economic, environmental and social systems (Franks, 1996; Hopwood *et al.*, 2005). Thus, the broad aim of sustainability is only practical for formulating development strategies if based on context-specific characteristics (Morse, 2008) of the social-ecological system in question. This is no more apparent than when comparing developed and developing countries. For example, evaluation methods of 'Western' origin cannot readily be used to recommend durable sustainable development paths for developing countries without thorough insight into the developing country context (Virtanen, 2005). A different development path is needed for these countries, based on: 1) a definition of welfare that meets basic needs but does not glorify consumption for its own sake; and 2) closed loop, minimum waste production and consumption systems (Ayres, 2008; Islam *et al.*, 2003). At the same time, we argue that developed nations need to lead by example by curtailing their own consumption, adopting clean technologies, and investing in the adaptive capacity of economic, environmental and social systems in the developing world; as this is ultimately in their own best interests. This paper explores the need for a new global contract between developed and developing countries to realise global sustainable development, focusing on sub-Saharan Africa (SSA).

2 The political economy of sub-Saharan Africa

Historically, the 15th century marked the first Western establishments in SSA that were later to be used for large-scale transfers of both human capital (slaves) and natural capital (minerals like gold, diamonds and oil) to the Western world. Technological differences (especially military power) facilitated a systematic drainage of human and natural capital from SSA for almost four hundred years. This resulted in an outflow of wealth from SSA to the Western world. The turning point, and the beginning of de-colonisation, came shortly after the end of World War II, when Europe was unable to suppress colonial struggles for independence. Ghana became the first country in SSA to gain independence in 1956, and by 1980 virtually the whole continent was independent of colonial rule. However, colonialism had significant and long-lasting impacts on SSA, some of which are still evident today:

- the (sometimes forced) introduction of Western governance, education and religious systems, which were fundamentally different from traditional systems and cultures, established a platform for future conflict;
- exposure to Western consumerism (especially through television and other forms of media in later years) fundamentally changed traditional lifestyles;
- colonially-imposed borders ignored traditional tribal and cultural boundaries, and forced previously independent communities to live together, or permanently separated previously integrated communities – leading to the breakdown of social systems and to conflict;
- colonies with direct access to sea trade imposed governance and economic systems that exploited and continue to exploit land-locked colonies;
- borders between colonies were set along major rivers, which has interfered with natural migration routes of wildlife and created conflicts over scarce water resources; and
- dual economies became established, with modern, formal economies existing alongside more traditional, informal economies.

Compounding these problems of colonial legacy is the fact that many countries in SSA are controlled by small elite groupings that control a disproportionately large share of the national income, and therefore have a disproportionate amount of political power and influence. The poor therefore do not have a forum for voicing their concerns, and because of a lack of political power, their needs are seldom articulated (let alone made central to policy design). Elite-dominated governments often maintain their power with military force, or even starvation, and rarely provide democratic options for society.

Factors such as their colonial history, the concentration of political and economic power among a privileged minority, undemocratic governmental structures and poorly trained and paid bureaucrats make countries in SSA highly susceptible to government failure (Goodstein, 2008). Given these potential threats, policies that depend on sophisticated analytical capabilities or aggressive monitoring and enforcement are unlikely to succeed in developing countries. Weak or corrupt governments and the lack of meaningful opposition means that business interests (legal or illegal) are likely to be able to influence the adaptive capacity of social systems, and how natural capital is used in these countries.

The SSA region clearly requires urgent social and economic development to overcome extreme poverty. The question is how best to overcome poverty without compromising long-term ecosystem integrity. Truly innovative examples are hard to find (Buch and Dixon, 2008). We argue that a paradigm shift regarding measures of well-being, and an associated behavioural shift, is required for effective policy and implementation strategies to increase the adaptive capacity of economic, social and environmental systems in SSA (Kates and Dasgupta, 2007). Thorough insight into the sub-Saharan Africa context is essential. It should be recognised that economic, social and ecological systems in this region are particularly vulnerable to external shocks because they are sensitive and lacking in adaptive capacity¹. The region is also characterised by various system vulnerabilities, including over-grazing, droughts and desertification (natural systems); political turmoil, civil wars, lack of education, malnutrition, and infant mortality (social systems); and unserviceable foreign debt and huge balance of payment deficits, which can no longer be serviced solely through exporting raw materials (economic systems). Many of these systems function close to their thresholds, leaving them not only sensitive to external shocks, but also susceptible to perverse incentives. It is therefore imperative that the adaptive capacities of these systems are increased through directed and proactive interventions focused on stabilising political regimes and developing human capital (social systems); conserving and restoring natural capital (natural systems); and providing access to financial capital, markets and aid, and facilitating foreign direct investment (economic systems).

¹ **Vulnerability** to change (stimuli) defines the extent to which natural and social systems may be damaged or harmed by global-change impacts. It depends not only on a system's **sensitivity** but also on its **adaptability** to new conditions. **Sensitivity** is the degree to which a system will respond to a change in global conditions (e.g., the extent of change in ecosystem composition, structure, and functioning, including primary productivity, resulting from a given change in temperature or precipitation) (Anderies *et al.*, 2007; Burns *et al.*, 2006; Munasinghe, 2002).

Poverty is recognised as a key factor contributing to the low adaptive capacity of these systems in SSA. It is argued that higher poverty levels increase the vulnerability of these systems, because basic human needs are not met and the poor simply cannot afford to conserve the natural resource base. Out of economic necessity, they are forced to over-utilise their immediate natural capital at unsustainable levels. Environmental problems in developing countries are therefore essentially problems of poverty (Goodstein, 2008). In turn, poverty in SSA persists because of a unique combination of disproportionately pronounced demographic, geographic, historic and governance-related features. These include significant ethnic diversity combined with low population densities, the land-locked nature of many countries in SSA and their history of colonial rule, as well as an ongoing lack of good governance in the post-colonial era (Collier, 2007). Alleviating poverty, e.g. through the creation of social safety nets, is therefore a pre-requisite in order to curb environmental degradation in SSA (Kates and Dasgupta, 2007). However, leaders in SSA generally don't have ideologies consistent with the principles and ethics of social equity and environmental sustainability, precluding investment in social and environmental capital. In the absence of continual and meaningful pressure (both internal and external) to change this situation, the natural and social capital of SSA will continue to be rapidly eroded.

The challenge therefore lies in creating incentives for private individuals and companies² to be more sustainable, i.e. to adopt production practices that are profitable but also socially and environmentally friendlier, without harming the position of the poor, and without decreasing social and environmental adaptive capacities in the long term. It is also essential to remove perverse incentives that encourage harmful practices. However, inputs tend to be sold at a discount, whereby not all the resource rents are captured in the selling price. Also, inputs are often imported from developed countries, who add value to raw materials obtained cheaply from SSA and sell them back to SSA at a premium. In reality, therefore, there is still a net outflow of wealth from SSA to the developed world, even in the post-colonial era. We argue that subsidies aimed at improving adaptive capacities in SSA in an affordable way, combined with a decrease in the level of subsidies for industries in the developed world, would help to level the economic playing field between developed countries and SSA.

3 Key areas for investment to build capital and adaptive capacity

The millennium development goals (MDGs) (United Nations, 2000) outline key areas in which to focus investment in order to increase the adaptive capacity of economic, social and ecological systems in sub Sahara Africa. We argue that global equity (including, but not limited to, gender-related equity) is pivotal for promoting stability and sustainability, both in SSA and globally. Realising such equity, however, is a

² This does not imply that reform is only needed at the micro level of society, i.e. at the level of individuals and companies. We also acknowledge the need to tackle issues embedded in the societal structures (e.g. financial institutions such as the International Monetary Fund and World Bank) within which individuals and companies operate, which can be seen as structural hurdles to the achievement of sustainability. However, a full analysis and critique of these structures, for example, using the framework provided by Beck's (1992; Beck, 1994; Beck, 1997) reflexive modernization, goes beyond the scope of this paper.

major challenge. Developed nations need to realise that their social, economic and environmental security depends on reduced poverty and increased living standards in SSA. Thus, if developed nations are serious about achieving sustainability, they need to ensure that countries in SSA are supported in their efforts to overcome poverty (Arrow et al., 2003). Direct support is needed in the form of debt relief, subsidised access to technology, food aid, etc. However, direct support should above all facilitate the re-building of the capital stocks and adaptive capacity of SSA's social-ecological systems.

It is not sufficient just to focus on SSA; it is also necessary to change Western lifestyles (based on mass consumption and waste generation; carbon-intensive production systems; in-house subsidies for the primary sector; patented, unaffordable medicines; etc.) that are the primary drivers of the global changes threatening SSA and all developing nations. Achieving this requires that fundamental changes to existing production systems, trade agreements and consumption patterns are made. Fundamentally different measures of well-being, defined in terms not related to material consumption (e.g. spiritual indicators) need to be developed and employed in developed countries, and in developing countries after structures for meeting basic human needs have been put in place, so as to de-link well-being from consumption. The technologies already exist to achieve this. What is lacking is the political will to deal with the powerful elite who have vested interests in maintaining the status quo.

Increasing the adaptive capacity of economic, human and natural capital (seventh millennium development goal (MDG 7)) in SSA is a key requirement to increase system resilience that will serve our definition of sustainable development. With this broad aim in mind, we discuss the specific requirements regarding putting basic needs first, building human capital through education to stabilise and control population growth, and lastly to maintain natural capital through technology transfer and governance. We discuss these objectives from a sub-Saharan Africa context, with sub-Saharan Africa norms and values in mind.

3.1 'Basic needs first'

We align basic needs with food security (MDG 1) and human health (MDGs 4, 5 and 6) (United Nations, 2000). Providing basic family needs takes significantly longer in developing countries as compared to developed countries. Responsibility for collecting resources (such as firewood and water) for the provision of these needs in SSA falls disproportionately on women and children. We consequently argue that time invested in satisfying basic needs in SSA carries a potentially high opportunity cost in the form of time that could be spent receiving education. Basic service provision (e.g. water supply, sanitation, food security and energy) will therefore enable the satisfaction of second order needs (e.g. education) by freeing up time that would otherwise be spent collecting basic resources. Importantly, the provision of basic services, particularly water, sanitation and energy, should be adapted to the needs of the community. For example, it does not make sense to provide rural or migrating communities with bulk water, sanitation and energy supply infrastructure which does not suit their lifestyles, particularly when small-scale, stand-alone technologies exist and are affordable. New and innovative solutions for financing and

distributing these technologies are needed, along with concerted efforts to gain consumer understanding and acceptance of these.

Food security, as another basic need, relates to the accessibility of sufficient food to meet minimum nutritional standards. Satisfying these needs could be achieved either via the market (which necessitates effective transportation, trading and financial systems) or through community self sufficiency. We argue that, given the SSA context, it makes more sense to focus on creating self sufficiency at the local community level because of high transportation costs from poorly maintained distribution networks, resulting in inflated food prices. This is in line with the notion that global food security is faced with a distribution challenge, rather than a production challenge. Self sufficient food production requires improvements in the productivity of small-scale farmers (Chianu and Tsujii, 2004) via extensive mentorship programmes and access to inputs such as seeds, equipment and fertilisers. International funds are currently utilised for this purpose, but far more could be done to speed up the process. Safety net mechanisms are also required to support communities through difficult periods such as droughts. It is comforting to see the efforts of all signatories of the United Nations Framework Convention on Climate Change (UNFCCC) in creating funds to assist least-developed nations adapt to climate change. Examples of these include the Special Climate Change Fund and the Adaptation Fund.

It is only once self sufficiency is achieved that the focus should shift toward increasing the international competitiveness of SSA³, which could be realised via international funding to cushion initial uncompetitive consumer prices in SSA, allowing local producers time to become internationally competitive. Clear exit strategies need to be in place to remove subsidies after producers become internationally competitive. However, a rural transition from low-productivity, labour-intensive, small-scale farming to high-productivity, capital-intensive, commercial farming could realise surpluses in the labour market that need to be absorbed elsewhere in the economy. Urban industries are usually required to absorb the surplus labour (Luken and Hesp, 2007); however, countries in SSA lack these industries in the first place, and secondly are unable to provide the necessary training of farm workers for industrial application. The result is sharp increases in unemployment rates, with associated declines in effective demand to absorb the increased supply of goods and services. There is therefore little motivation for governments in SSA to actively promote capital-intensive agriculture that will displace additional people from rural areas to urban areas. Therefore, any initiative at promoting large-scale commercial agriculture should only be allowed if it is associated with investment and training in 'value-addition' (secondary sector) activities that process the raw products, thereby creating employment for those displaced from rural areas.

3.2 Building human capital through education and stabilising population growth

³ This does not imply a dichotomy between self sufficiency and international competitiveness, but rather that self sufficiency is a necessary pre-condition to sustain international competitiveness.

The second MDG (United Nations, 2000) promotes the realisation of primary education as a basis for building human capital. The purpose of education (both formal and informal) is firstly to communicate accumulated wisdom and knowledge from one generation to the next, and secondly to facilitate active participation in innovation and the development of new knowledge. Education in SSA is traditionally rooted in oral story-telling, art, culture and traditions; rather than literature and writing. Story-telling is one of the primary means of learning and communicating the SSA culture, and it is used to help define and distinguish different ethnic groups and cultures (Bassey, 1999). A culturally-sensitive educational system whose goals are to enable the society to effectively cope with its rapidly changing environment has to be dynamic so as to empower people with the capabilities to proactively prevent or adapt to these changes. In such cases, a society will have the incentive to educate their children, as they will experience the benefits of doing so.

A strong argument for the promotion of education lies in the inverse relationship between education and population growth (Mabogunje, 2007). According to recent UN projections, the world population could rise from its current 6 billion to 9 billion over the next 43 years (United Nations, 2007). However, population growth rates across the world vary significantly. Unlike some other developing regions (e.g. South-East Asia), the population in SSA is still growing, with Africa's share of the world population expected to nearly double from 13 percent to 24 percent in 2300. We therefore expect a severe population crisis in SSA.

In SSA, especially in rural communities, children form part of the social security net for the elderly (Boshoff, 1996). However, educated people tend to earn more, and with income as an alternative form of social security, educated women tend to have fewer children. Add to that the fact that the opportunity cost of having children increases with higher education levels, and the fact that educated people are more likely to understand that uncontrolled population growth will undercut sustainable development efforts; and it becomes clear that education plays a pivotal role in population control, and therefore in promoting sustainable development. If women could be empowered through education to control the amount of children they have, the quality of life in SSA could improve. In particular, there needs to be an emphasis on keeping children in school beyond primary education level. Also, as education levels increase, political participation tends to increase, resulting in increased pressure on leaders to be responsible and accountable.

The education of a generation takes approximately 15 years. SSA therefore faces a considerable transformation period in terms of educating its communities. Furthermore, a significant increase in investment in education in SSA is needed. To provide some perspective, the World Bank's estimate of gross world production in 2007 was US\$65000 billion (Central Intelligence Agency, 2008). Global public expenditure on education was US\$2800 billion (4.3% of global GDP), of which primary education comprised approximately 30% (US\$840 billion or 1.3% of global GDP). Although 15% of the global school-age population lives in SSA, only 2.4% (US\$67 billion) of the world's public education budget is spent on education in SSA. By contrast, US\$117 billion is spent on education in France (as a typical European country), and US\$784 billion in the US (where 28% of the global education budget is spent on 4% of the global school-age population) (UNESCO, 2007).

It is therefore clear that global education expenditure is biased towards the developed world. It must also be borne in mind that developed countries only need to maintain their stock of human capital; whereas developing countries have to address historical backlogs. Substantially higher investments in education in SSA are therefore required to enable SSA to support itself and develop in a sustainable manner. Thus, significantly more education-related aid will be needed to create a critical mass of educated people (human capital) in SSA. To achieve this will require a concerted global effort and creative financing mechanisms beyond the traditional means of donations and aid.

3.3 Maintaining natural capital through technology transfer and governance

Maintaining the natural resource base which underpins basic needs is vitally important if SSA is to ensure sustainable livelihoods (Dovie et al., 2005). Unfortunately, the poor often cannot afford to conserve natural resources because of their struggle for immediate survival; resulting in unsustainable pressure on the environment. Also, the response of poor people to pollution and degraded environments is relatively low, because of limited options for doing so and shorter life expectancies (Goodstein, 2008). Increased recognition (via education) is needed of the central role natural capital plays in satisfying basic human needs in these communities.

Increased resource scarcity and limits to the capacity of the natural environment to absorb pollution mean that SSA cannot follow the same development path as that of developed nations, which was based on material consumption and an initial phase of dirty technology. This historical trend needs to be leapfrogged based on current knowledge and cleaner technology, by facilitating their transfer to developing nations. However, the benefits of reduced per capita consumption, and of reduced resource use/pollution per unit of output as a result of clean technologies, could be offset by increased demand as a result of lower prices (due to increased efficiency) and a growing global population, possibly leading to an increase in overall consumption, and even in overall resource use/pollution⁴ (Jevons, 1866). This is illustrated and discussed in detail by Ayres (2008). However, there are some areas where cleaner technologies hold promise for the sub-Saharan Africa context, including conservation agriculture and productivity improvements (minimum tillage, deficit irrigation, genetically modified crops and fertilisation); off-stream bulk water supply infrastructure to avoid the negative externalities of in-stream infrastructure; and sustainable renewable energy as an alternative to firewood (e.g. agro-forestry or woodlot systems, solar power and bio-ethanol). All of these technologies will aid in satisfying basic needs in an environmentally friendlier way, while freeing time for other, more productive activities, particularly education.

In terms of governance, the natural resource base is often subject to ‘open access’ (i.e. not subject to any form of ownership, access restrictions or rules regarding their use) (Goodstein, 2008), such that incentives exist for individuals to behave as ‘free riders’

⁴ According to Jevons (1866) and Ayres (2008), efficiency improvements, instead of reducing the total demand for a resource, reduce its relative price in comparison to its output, which in turn increases demand. This demand increase could offset the per unit savings in resource use/pollution and realise an increase in total resource use/pollution.

and exploit the shared resources without penalty. With open access and high market discount rates, natural resources are often used at unsustainable rates, especially in SSA (Barbier, 2005; Rammel et al., 2007). Communal, state or private property rights to goods and services are essential for more sustainable development paths, as they give the owner incentives to monitor and maintain these resources. However, even when property rights do exist, if these cannot be monitored and enforced, illegal exploitation will occur. The relatively low level of government legitimacy, poor governance and failing institutions in SSA mean that monitoring and enforcement, and therefore establishing property rights, is more complicated than in developed countries (Kirk, 2000; Zerbe, 2005).

International funding organisations promote the use of economic incentives and other market-based strategies as the key to more effective environmental protection. These instruments may well turn out to be more effective in developing countries than command-and-control strategies, which require significantly more monitoring and enforcement. However, market-based instruments have thus far achieved only limited success in SSA (Ayres, 2008; Bromley, 2007). We believe that these highly sophisticated instruments have been pushed too hard and too fast, and many initial attempts to implement them failed to account for the SSA context, where some of the pre-conditions for implementing these instruments (such as well-functioning markets, capable institutions and political will) may be lacking. The targeted beneficiaries of these instruments should be better informed, and the instruments need to be tailored to the SSA context in order to be effective. It is an imperative that the experiences with such instruments in SSA to date are critically reviewed so that appropriate frameworks and key lessons can be learned and adopted (Godfrey and Nahman, 2007). In the meantime, national governments in SSA should start by reducing environmentally damaging subsidies, working to clarify and enforce communal or private property rights, regulating pollution, promoting the development and transfer of clean technology, and ensuring that the gains from trade (Smith and Barrientos, 2005) are funnelled into measures promoting sustainable development.

4 The need for a new global contract between rich and poor

We have argued that sustainable development is determined by the adaptive capacity of a society's underlying economic, social and natural systems. SSA is seemingly trapped in a vicious cycle characterised by the interrelated problems of unsustainable population growth, poverty, environmental degradation and political instability. These have direct impacts on the adaptive capacity of SSA's economic, ecological and social systems, and do not sketch a bright future for SSA. Add to that over-consumption in developed countries, and associated global environmental threats such as climate change and biodiversity loss, and it becomes clear that SSA and the rest of the developing world carries a disproportionate burden (in the form of social costs) of the unsustainable lifestyles of Western societies. SSA will not be able to increase its adaptive capacity through sustained home-grown development programs without considerable investment from developed nations. Such investment, which should be balanced and structured so as to increase the adaptive capacity of SSA's economic, social and natural systems, should largely take the form of investment in education, financial assistance and mentorship programmes.

Foreign investment in SSA has been sluggish due to the high risks associated with weak human capital, failing institutions, and poor governance and infrastructure; and the fact that investment decisions continue to be based on traditional economic criteria (Hyden, 2007). We argue that these criteria are no longer appropriate for investment decisions in SSA; and that, instead, poverty alleviation needs to become the primary objective of (and criterion for) all external and internal investments in SSA. Although these investments are unlikely to provide immediate and large returns (compared with commercial investments), they will set the platform for longer-term, global rewards; in the form of returns from investing in social capital; positive externalities associated with biodiversity conservation; benefits from nature-based tourism; and the avoided costs of providing food aid, restoring biodiversity, dealing with refugees and adapting to climate-change.

An essential requirement for this to be successful is that the investment process must be based on cooperation, mutual trust and mutual benefit. One aspect of this cooperation involves reversing the tendency of many developed nations to export 'dirty' industries to developing countries, or to pay developing countries to allow dumping of environmentally and socially harmful wastes. Countering these and other practices will increase the adaptive capacity of both social and natural systems (MDG 7) in the developing world. The challenge is to convince developed nations that rich and poor countries are mutually dependent for the well-being of their societies. Developing countries need the financial, social and human capital of the developed countries, while developed countries often rely on natural capital from developing countries. In turn, as argued above, the adaptive capacity of natural systems in SSA depend on developments in their social and economic systems. The social, economic and environmental security of developed nations therefore depends on the ability of developing countries to escape the vicious cycle of unsustainable population growth, poverty, environmental degradation and political instability. We therefore argue that developed nations need to invest in the adaptive capacity of natural, social and economic systems in the developing world in order to avoid the risk of undermining their own welfare in the long term. Without substantial financial assistance from developed countries, it will not be possible to increase the adaptive capacity of key systems in SSA so as to ultimately achieve sustainable development in both developed and developing countries. In summary, we propose that SSA should be supported in terms of the following:

1. funding for improved access to basic health facilities (particularly water and sanitation);
2. building human capital through investment in education, in order to reverse the downward spiral of poverty;
3. technology transfer and implementation of new and cleaner technologies (e.g. solar and wind power, waste control and management);
4. debt relief in the form of debt for nature swaps (partial write-off of SSA's debt in exchange for investment in environmental conservation);
5. international aid for catalysing rural economic development;
6. financial and technical assistance in the implementation of environmental regulatory and management programmes; and
7. removal of trade barriers on developing country products.

However, developing countries also need to take responsibility for their own futures, by making sure that their political environment changes from one characterised by corruption and wastage to one of transparency, responsibility, good governance and accountability. However, this can only be realised once an educative platform is in place. We have also argued that education is a highly effective measure for population control. Education is therefore central to the achievement of sustainable development. The process of uplifting SSA should therefore begin with increasing the adaptive capacity of its social systems via increased investment in human capital. Education (particularly for young women); together with basic health-care (coupled with comprehensive family-planning services) and provisioning for the poor; are therefore essential components of an effective package for poverty alleviation and, by implication, sustainable development.

In conclusion, we argue that developed countries need to invest more heavily in developing countries, as restoration of global equity is a key requirement for global stability and sustainability. This requires cooperative governance between developed and developing countries, and greater investment by developed countries in the adaptive capacity of natural, social and economic systems in SSA. Ultimately, sustainable development in poor countries is unlikely to occur without a substantial commitment from rich countries. We acknowledge that that this seems to place unrealistic expectations on developed countries; however, we maintain that an urgent change in the mind-set of decision makers in the developed world is needed to secure sustainability on a global scale.

Nevertheless, a realistic approach is needed, which communicates the need for a socially and environmentally friendly contract between rich and poor countries, yet is sensitive to current realities. One way of realising this may be through changes to current credit instruments used by international institutions such as the International Bank for Reconstruction and Development (World Bank) and the International Monetary Fund (IMF). These instruments tend to use conventional approaches as followed in developed country contexts, applied to the developing world (Annisette, 2004). The consequent misalignment to the developing world context often results in resistance from the intended recipients, which is often a formidable obstacle in effectively providing international aid; leading to the further social, economic and environmental impoverishment of the developing world (Birkin *et al.*, 2005; Neu and Ocampo, 2007; Virtanen, 2005). Current instruments should therefore be made more sensitive to local contexts. This calls for a new contract between rich and poor nations to develop a truly global partnership (in line with the eighth millennium development goal) in order to achieve global stability and sustainability.

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