

THE BARRIERS AND POSSIBLE SOLUTION TO ACHIEVE SUSTAINABLE DEVELOPMENT

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Abstract: The increasing spectrum of environmental and social challenges instigated by the failure of development strategies, the continuous proliferation of unsustainable patterns of production and consumption coupled with the anticipated level of population stimulated the pursuit of a new path. Sustainable development has emerged as a possible remedy. Despite increasing efforts to marry the social and environmental challenges with economic growth, progress remains remote. Against this background, the paper aims to investigate the root cause of the current poor progress in terms of the practical application of the concept. The paper reinforces the drawbacks of the current societal conflict resolution mechanism: market and political arenas. As a possible solution, it suggests the urgent need for a shift to the third arena, which facilitates integration of public debates, scientific evidence and policy, and extensive use of innovative tools such as precautionary principle to ensure a high-quality decision-making process.

Keywords: challenges, development, progress, solutions, sustainability.

1. INTRODUCTION

Sustainable development emerged as a possible means of integrating social, environmental and economic growth so that the needs of the present generations can be met without jeopardising the possibility of the future generation from meeting their own needs. The concept of sustainable development is a classic example of the evolution of a new world order. A concept which “has passed through all the predictable stages: from an ideological side-show, an interesting trend met with equal measures of enthusiasm, scepticism and uncertainty to an agenda on which we might have differences of opinion, but one which we cannot deny, and one which individuals, companies and institutions increasingly adopt as their own.... Typically, it begins as an almost unnoticeable trend that gradually takes shape and finally develops into a fundamental global condition” (Nordic, 2002 pp 8). Figure 1 shows the dramatic increase of international media interest in sustainability while Figure 3 shows the timeline of both global and UK efforts to achieve sustainable development

Despite increasing high profile global conferences and events aimed at promoting sustainable development, its uptake in terms of practical application is conspicuously low (NFSD, 2002; Dyllick and Hockerts, 2002). This paper explores the reason behind this and reviews a large body of knowledge to develop a topology of challenges and a timeline of various attempts to promote sustainable development. It also examines barriers to sustainability and suggested a possible way forward.

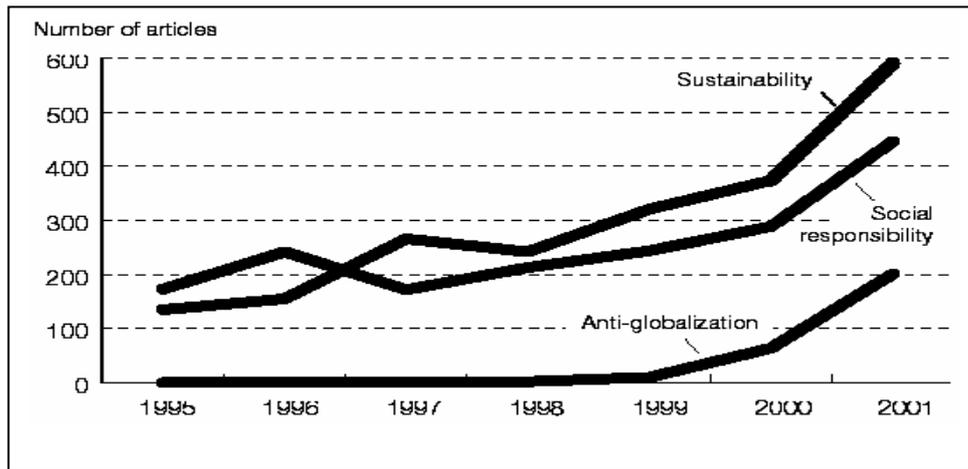


Figure 1: Key words in 12 leading international media 1995-2001 (Nordic, 2002)

2. THE NEED FOR SUSTAINABLE DEVELOPMENT

Sustainability describes the ideal society- a better quality of life for everyone now and for generations to come (see Brundtland, 1987; DETR, 1999). The relevant literature is abundant with the spectrum of sustainability challenges (IPCC, 1996; UNDP 1999; 2000). The evolution of sustainable development has been driven by demographic and environmental concern, value creation and increased industrial activity.

Demography, poverty and economic concern

The current world population is about 6 billion, an increase by 140 per cent over the last fifty years. By 2050, it is projected to be 9 billion (UN, 2002). Of the current six billion, fifty per cent have to survive on less than two dollars per day (Leisinger and Schmitt, 2002), one-fifth have no access to health care, one-sixth have no access to safe water to drink, and over 40 per cent lack access to sanitation and modern energy services (DTI, 2004).

Demography, poverty, urbanisation and quality of life

Geographically the earth is ageing. Demographically, most of the nations are becoming younger (Fussler and James, 1996) although in the most developed countries, life expectancy is rising while birth rate is declining. The implications of this are: slowdown in the rate of economic growth, unsustainability of pension schemes and public health facilities. In the EU, regional imbalances remain a major concern as 1 in 6 Europeans live in poverty.

Value creation, industrial activity and environmental degradation

The increasing depletion of natural resources and environmental degradation underscore the urgent need to decouple economic growth from environmental degradation. Major environmental problems such as CO₂ emissions, deterioration in air and water quality, depletion of forest, and solid waste generation are caused by industrial activity. As a result, some have demanded 90 per cent dematerialization of the economic processes to achieve a 'factor 10' improvement (Schmidt-Bleek, 1994).

Unequal distribution of wealth

Inequalities within and between countries are greater than anything experienced before (UNDP, 2000), where 80 per cent of the world income is received by 20 per cent of the world's population (Leisinger and Schmitt, 2002). The ill-conceived globalisation through strategic alliances; the ever-increasing economic power of the World Trade Organisation exacerbate these gaps (UNDP, 1999). Aside from the moral and ethical considerations associated with social inequalities, there are many practical issues. Inequality reduces efficiency and productivity of the poor thereby causing low economic growth and undermining social cohesion. Social exclusion promotes violence, crime, drugs, family breakdown, dependence on state benefits and so on. Extreme inequality threatens the whole economy as a large proportion of the society loose connectivity with the assets and organisations that produce the wealth (Dimbleby *et al*, 2000). According to Gates (1999 pp8) *“Two-tier societies and two-tier marketplaces are not the fertile soil in which robust democracies take root”*.

Other contemporary challenges and impact on the built environment

The occurrences of new diseases, especially the growing impact of the AIDS epidemic, the effect of climate change and urban growth on the built environment are examples of other contemporary challenges. Future changes in the built environment will have to meet the challenges created by climate change and urban growth. Statistics indicate (Figure 2) that the population of cities will increase three-fold to over six billion by 2050.

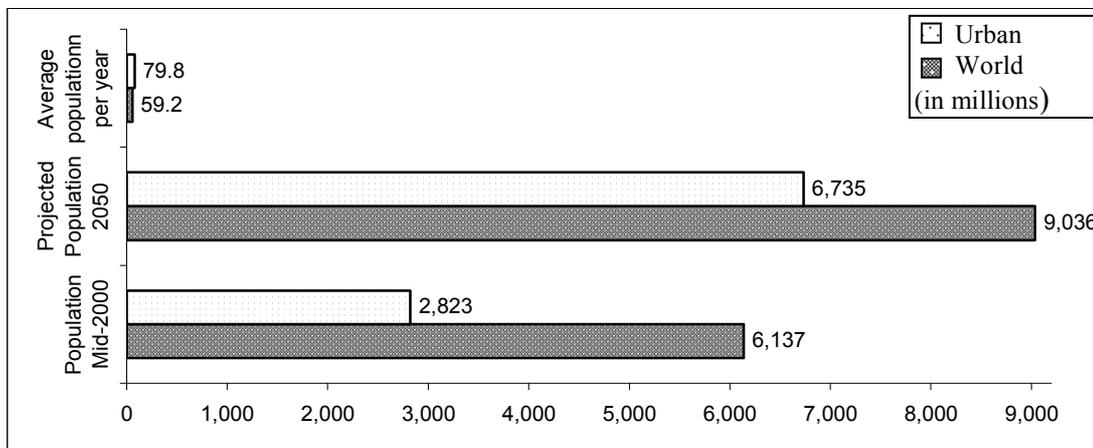


Figure 2: Population Trends¹

¹Collated: http://www.prb.org/Content/NavigationMenu/Other_reports/2000-2002/2001_World_Population_Data_Sheet.htm#highlights

The environmental and social changes addressed have been with us for much of the last century, but the pressures are intensified as society now faces additional environmental and social stresses (Roome, 1998). Dealing with them will require considerable invention and innovation. Sustainable development is presently the only answer available (Enmarch-Williams, 1996; Blair, 2005).

reviews consistently suggest that success is mixed and progress remains remote (Annan, 2001). The conclusion of the global analysis of the progress made so far indicated *“little evidence of a massive shift in attitudes and actions on the part of all major players upon which the realisation of a sustainable development process depends. Individual, political and entrepreneurial inertia as well as tactical behaviour continues to delay a halt of environmental destruction and resource mismanagement”* (NFSD, 2002 pp2). In the UK, the recent authoritative review of progress since 1999 concluded ‘Shows Promise, But must try harder (SDC, 2004). Against this backdrop, through extensive literature review and deductive reasoning, the paper explores the root cause of the current poor progress and suggested possible solutions.

4. BARRIERS TO ACHIEVING SUSTAINABLE DEVELOPMENT

4.1 Historical Disparity Between the two Parts of the Concept

A good appreciation of changes in thinking regarding the conceptualisation of sustainable development is a prerequisite to understanding the challenges of its practical application (Elliot et al., 1994). The origin of the concept of sustainable development lies in two distinct disciplines of development and environment, which were separated until 1960s. As understanding of the challenges and achievements of both disciplines changed, they came closer with the realisation that environment and development were interdependent and mutually reinforcing issues. The changing perceptions of both epistemologies and their emergence are possible reasons for the poor progress of the practical application of sustainable development.

Changing perceptions of development

In the 1960s, a positive causal relationship between development and economic growth was assumed and economic growth was measured through Gross National Product (GNP). It was generally assumed that the problem of the South could be quickly solved through financial aid, technology and expertise transfer (Elliot et al., 1994; and Radclift, 1987). In the 1970s, some progress was indicated by GNP. However, the increased poverty, population growth and inequality provided renewed challenges to economic development. As a result, the focus was widened to include ‘Even distribution of income’ and ‘Population control’. These are perceived as fundamental parts of any development strategy, hence such phrases as ‘Growth with Equity’ and ‘Redistribution with Growth’. The understanding of development took a new dimension in the 1980s and was perceived as a multi-dimensional concept encapsulating widespread improvements in the social, as well as, the material well-being of all in the society. It was recognised that there was no single model for achieving development and that investment in all sectors (for example, agriculture, industry and so on) was required. For development to be sustainable; it must encompass not only economic and social factor, but also those related to population, natural resources and resulting impacts on the environment (Radclift, 1987).

Changing perceptions of the environment

Environmental conservation took off in the 1960s when coherent bodies of work were published (Carston, 1962; Erlich, 1968). The multiple effects of unsustainable patterns

of production and consumption of the developed world started to emerge. Concern was intensified due to population growth, increasing demand on natural resources in the developing world and its threats on global environmental quality. However, the notion of environmental conservation gained little or no support from the developing countries for various reasons (Radclift, 1987):

- resources were perceived as infinite;
- environmental degradation is inevitable consequence of industrial development;
- scepticism of the motives behind proposal to limit their development;
- strong belief that development can only be achieved through industrialisation; and
- environmental problems are solely caused by the industrial world hence they should deal with.

Emergence of environment and development

The major political dilemma of the Brundtland is the integration of social and environmental decline with the desire for economic development in the South and economic growth in the North (Adetunji, 2003). This historical disparity is the cause of current divergence of views and perspectives, values and beliefs and, experience and insights as evidence in the various global political negotiations on environmental targets.

4.2 Lack of Clarity and Contradictions of the Concept

The relevant literature provides different definitions for sustainable development and there is still much confusion and conflict about the meaning of the concept. Sustainability is an integrative and crosscutting concept, characterised by deep-rooted contradictions of incompatible goals (Dovers and Handmer, 1993). This systemic dysfunction is rooted in the often irreconcilable two parts of the concept- 'sustainability' and 'development'. The combination of these two words resulted in multi-dimensional variables and sub-variables rather than the sum of two concepts put together (Samson, 1995). Dovers and Handmer (1993) identified eight contradictions as follows:

- **Cause versus cure:** technological and cultural paradox.
- **Humility versus arrogance:** uncertainty of decision making despite increased information regarding global environmental crisis.
- **Intergenerational versus intragenerational equity:** redistribution of resources is ecologically defined but politically impossible trade off.
- **Economic growth versus ecological limits:** 'sustainable' and 'development' is an oxymoron.
- **Individual versus collective interests:** the reconciliation of the two distinctive views. The western culture is epitomised by individual sovereignty, protected through the political frameworks, while sustainability is a collective problem instigated through the sum of the individual preferences.
- **Diversity versus purpose:** potential conflict between diversity of democracy and purpose action.
- **Adaptability versus resistance:** differing kind of resilience in the face of change.
- **Optimisation versus spare capacity:** optimisation is anti-sustainability.

Table 1: Summary of comments on conceptual irregularities

Commentators	Comments
Brandon, 2000; Cecchini, 2000	Vague, ambiguous and ill defined
Meadowcroft, 1999; Oldeman, 1995; O’Riordan Voisey, 1998; Hill and Bowen, 1997; Gatto, 1995	Fuzzy concept and open to a wide range of interpretations
Dovers and Handmer 993; Mullaney and Pinfield, 1996; Pearce, 1989; Daly, 1996	Incompatible and incomplete Motherhood and apple pie, a breeding ground for disagreement
Kirby, 1995	Anthropogenic- centred on human welfare excluding other creatures

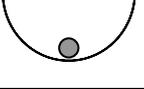
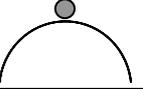
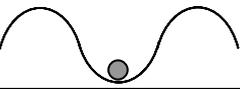
4.3 Time Required for Cultural Change and Lack of Political Will

The pursuit of sustainable development requires a concomitant reform in constellation of social and political forces at the global, national and local levels. Of course this is a cumulative and lengthy process, which requires cultural change. Several voluntary agreements have been reached, particularly during and post Rio Summit, but the political will to enforce them has often been misplaced (Blair, 2005). The regional agreement on sulphur dioxide and a global agreement on ozone-depleting chemicals such as chlorofluorocarbons led to a general optimism that the world is heading towards the right direction and inspired the conventions on climate, biodiversity and the forests. However, the outcomes of the negotiation on these three issues indicate misplaced optimism (Dresner *et al.*, 2002).

4.4 Differing Views and Conflicts of Interest Among Major Players

The differing views and conflict of interest among major players on the ability of the environment to endure human impact are the major reasons for inadequate policy. This has raised concerns on the effectiveness of the current democratic decision-making and consensus-seeking mechanism to the achievement of sustainable development. Drawing from the work of Thompson (1990), Rayner (1991) and Samson (1995), the conceptual debates on the effect of the global development and environmental change can be characterised using the analogy of four competing views of environment, which represent a mixture of physical and perceived reality (Samson, *et al.*, 1995). As depicted in Table 2, the illustration comprises four topologies of environmental views, demonstrated by a bowl situated in a landscape to represent ideal-typical positions.

Table 2: Summary of the four competing viewpoints

Views of nature	I. Environment is robust	II. Environment is fragile	III. Environment is robust within limits	IV. Environment is chaotic
<i>Visualisation</i>				
<i>Comment</i>	Environment is extremely robust and very forgiving of human impact regardless of what is done to the landscape, the ball will always return to equilibrium at the bottom of the basin (Simon 1981).	Environment is extremely unforgiving and fragile to the extent that a trivial knock on the landscape will cause its collapse (Goldsmith, 1993; Devall and Sessions, 1985).	Environment is resilient and forgiving within identifiable boundary, which must not be surpassed or the ball can be knocked over the edge. (Brundtland Report and national/ local strategies)	Environment is random, chaotic unpredictable. Defies any sort of mitigation, control or management. A ball on an flat plane.
<i>Views</i>	Individualist: Environmental crises are positive challenges with bundles of new opportunities for human ingenuity.	Egalitarian: Global environmental changes are reflection of the multiple negative humans impacts and these will eventually lead to irreversible collapse of the planet	Hierarchist: Ecological degradation and natural resources requires carefully management through accurate scientific understanding of ecological limits to avoid global catastrophe	Fatalist: Environment is lottery driven cornucopia with sheer luck.
<i>Institution / shared</i>	Business and industry	Deep ecologist	Political institution / Government	Proponents do not often enunciate view.
<i>Solution</i>	Free market and green technology. The invisible hand steer the market in the right direction and the Gov't should have a laissez-faire attitude.	Substitution of anthropocentric hierarchies with bio-centric egalitarianism; living in harmony with environment	Internalisation of externalities; standards and operating procedures; scientific research	Doing nothing is the best solution
<i>Example</i>	Recovery in Central American from over use by early settlements to original state of dense tropical jungle. (Tolba et al., 1992, pp 2)	The problem of desertification and urbanisation.	Kano a large city in north Nigeria has withstood intermittent droughts over many centuries. Forest fires, release essential nutrients contributing to rapid regeneration'	

Each interprets the concept based on his/her own background, personal orientation to justify their own chosen strategy or action, and all opposing views are rouge information, misguided and deliberate attempts to impede economic growth. This calls to mind the South-North and America-Europe divide on forest and climate change negotiations and accounts for the poor progress since Rio Summit. The American negotiate from the premise that 'environment is robust' while the European 'environment is robust within limits'. There is an entrenched dichotomy between individualist (business and industry), egalitarian (deep ecologist) and hierarchies (political institutions), each of which has been observed to display its own distinctive form of rationality that legalises its operation. These become more interesting when the unpredictability and ever-changing faces of nature comes into play, occasionally fitting each of these views, thus alternately testifying the legitimacy of these multiple views, as can be seen from the example provided in Table 2.

5. DISCUSSION AND POSSIBLE WAY FORWARD

The discussion so far suggests that the conventional ‘market’ and ‘political’ regulatory arenas are narrow in scope in marrying development with multiple views of environmental capability. There is a disparity between democratic decision-making, consensus-seeking and long-term planning concerning sustainable development (Schomberg et al, 2002). For instance, the review of literature concerning climate change negotiations indicates that negotiations by most national representatives are mainly based on political feasibility rather than environmental acceptability. The reason being, (i) the increasing concentration of power to the few multi-national corporations through globalisation and (ii) probable maximisation of re-election prospect of national governments especially when environmental competes with economic objectives. Many political leaders have a strong inducement to negotiate for, or even reject, the lowest possible level of environmental measures that are achievable with no major economic repercussions and can be presented to the public as a success. The Bush-administration rejection of the Kyoto agreement and disinclination to any reduction of CO₂-emissions is an example (Dresner, 2002).

In view of these, like many authors (Birkeland, 1996; Keijzers 2002; Schomberg, 2002), the paper reinforces the need for the so-called third arena of the societal conflict resolution (depicted in Table 3) based on the global ethics of co-responsibility and new deliberative procedures to accommodate conflicting interest and limitations of market and political regulatory mechanisms. The third arena with decision-making process based on debate, mediation and transition management as opposed to the current process of vote and negotiation. The following elements form the main components of the third arena (Schomberg *et al*, 2002):

- **Increase in public debates** at all levels to provide an interface between system and subsystems – politics, law, science and the political decision-making process.
- **Technology assessment** procedures must be established to complement general public debate and to provide an interface between a particular subsystem and the political decision-making process
- **Constitutional change** or structural political change to accommodate the new forms of public debate and the development of transpersonal science and technology assessment processes.
- **Science for sustainability** is a complex system surrounded by scientific uncertainty and ignorance. There is a case for a new type of tool to facilitate smooth science-policy interface. A new decision-making tool for policy makers to assess the quality of the information rather than the truth within each scientific statement. Governance, precautionary principle, and sustainability should be inherently connected to each other to ensure a high-quality policy process.
- **Normative (deliberative) design** based on foresight/back-casting the establishment of normative targets, as a point of departure will help to find a common ground between scientific and policy level. Deliberative procedures such as the application of the precautionary principle help to find consensus on such targets.
- **System innovation** offers a route for achieving sustainability benefits. This requires a ‘transition management’ with the key elements of formulation of transitional goals and the use of process management based on a philosophy of

learning – by – doing and doing – by – learning, to resolve the long-term goals of sustainability and short-term ambition of the private and public sectors.

- **Visionary Enterprises:** the companies of tomorrow are the one that start integrating long term planning in its core business as evidence of the growing numbers of green consumers. Hence all organisation must develop a visible long term plans.

Table 3: Dimensions of societal conflict resolution (adapted by Schomberg, 2002 pp 20)

Dimensions	Interests	Standards	Processes	Arena
Individuals	Wants/Preferences	Efficiency	Trade	Market
Individuals/ Society	Rights	Social Justice/Equity	Vote/Negotiate	Politics/stakeholder agreements
Individuals/ Society/ Environment	Needs/ Responsibility	Ethics of Responsibility- Precautionary Principle/ Pursuit of sustainability	Debate/ Mediate/ Transition management	Long term Planning concerning sustainable development/ International negotiations

6. CONCLUSION

Sustainable development like any other evolutionary concept has a long history. The spectrum of challenges and their deep-rooted interconnectivity are the justification for the pursuit of sustainable development. Despite increasing effort to marry the social and environmental challenges with economic growth, progress remains remote. The key main barriers to progress are (i) historical disparity between the two parts of the concept; (ii) lack of clarity and contradictions of the concept; (iii) time required for cultural change and lack of political will; (iv) differing views and conflict of interest among major players; and (v) inadequacy of the current societal conflict resolution mechanism (market and political arenas). To achieve the ultimate goal of sustainability, this paper reinforces the urgent need for a shift to the third arena, which facilitates a smooth integration of public needs (through public debates and capacity building), scientific evidence and policy, and extensive use of innovative tools such as precautionary principle (preventative measure, even without scientific certainty of major human or environment impairment) to ensure a high-quality decision-making process.

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