

## An Exploration of The Different Dimensions of Sustainable Development

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### ABSTRACT

The concept of sustainable development became a very important lexicon in the development narrative decades ago with the publication of the Brundtland Report by the World Council on Environment and Development (WCED, 1987:47). With the publication of this report, sustainable development became firmly established as a new catch phrase, broadly embraced by institutions of global governance like the United Nations, International Monetary Fund (IMF), World Bank, development practitioners, national governments globally and even multinational corporations. According to Ginther et al, (1995:29), The Rio Declaration of the United Nations Conference on the Environment and Development (1992), just like the 1972 Stockholm Declaration made a pledge internationally to respect and protect the interests of all, and protect the integrity of the global environment and development system. These pledges are contained in 27 Principles which address a wide range of aspects such as the economic, environmental, social and technological dimensions of sustainable development. This article takes a look at those dimensions of sustainable development in order to enable researchers, development practitioners and policy makers to have clarity on the concept.

**Keywords:** Sustainable development, development, environmental dimension, technological dimension, human dimension.

### INTRODUCTION

Surveying the deplorable level of poverty and underdevelopment in the developing world especially in sub-Saharan Africa, it is clear that the promise of globalisation has not delivered on its pledge of being a 'tidal wave that will raise all ships' (Pezzoli, 1997:560). The increasing imbalance and inequality in the standard of living between developed countries and that of developing countries is proof that the fruits of globalisation and international trade unfairly favored the developed countries. The trickle-down-theory was a fantasy because despite the ubiquitous spread of globalisation, billions of people are still in absolute poverty, penury and wretchedness, especially the millions who are living below the poverty line in sub-Saharan Africa (UNDP, 2003).

The search for the best way to improve human welfare and tackle poverty, unemployment and underdevelopment which is common in Africa, has led to

the reevaluation of whether or not the global economy is on the right path to development (Corbridge, 1993:450; Goulet, 1995:610). This search for alternative forms of development gave birth to the concept of sustainable development Goodland et al (1993:298) accentuated this narrative saying, 'poverty is a massive global outrage'. The recognition of the scourge of persistent and endemic poverty in the developing countries of the world especially sub-Saharan Africa, is common to politicians, aid agencies, academic analysts and the media (Timberlake, 1985:224; Morgan and Solarz, 1994). This statistic from British Charity group Oxfam (2014) is a vivid illustration of the level of inequality which exists in the world and it is proof of the desirability of sustainable development:

- Almost half of the world's wealth is now owned by just 1% of the population.
- The wealth of the one percent richest people in the world amounts to \$110 trillion. That's 65 times the total wealth of the bottom half of the world's population.
- The bottom half of the world's population owns the same as the richest 85 people in the world.
- Seven out of ten people live in countries where economic inequality has increased in the last 30 years.
- The richest 1% increased their share of income in 24 out of 26 countries for which we have data between

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1980 and 2012.

- In the US, the wealthiest 1% captured 95% of post-financial crisis growth since 2009, while the bottom 90 % became poorer (Oxfam, 2014: 3).

It was the increasing global concern and outcry for alternatives towards creating a more humane, just and equal world that led to an interrogation and re-examination of the traditional narrative of economic growth and development at all cost (Haque 1999:7). It was the realisation by those in the institutions of global governance like the United Nations, International Monetary Fund, World Bank etc., that globalisation and international trade have not increased living the conditions of the majority of people on this earth especially the millions that live in Africa, which led to the rise of the sustainable development narrative (Camadessus, 2000:9). It was found that increased poverty and environmental degradation works together in creating an unsustainable life for the planet (Camadessus, 2000:9; Sachs, 1999, cited in Muducumura, 2002:137). According to the World Development Report (2000-2001), 2.8 billion people live on less than two (US) dollars a day (cited in World Bank, 2000). More sobering statistics from the UN figures is that 1.2 billion people live without access to safe drinking water. Adams (2001: 10) referred to the persistence of endemic poverty, especially in the countries of sub-Saharan Africa as the “pollution of poverty”.

The aim of this article is not to trace the historical process that led to the popularity of the concept of sustainable development. This background was provided in the article to provide more clarity on the concept. Before we discuss the dimensions of sustainable development which is the main aim of the article, it is appropriate to show the different definitions of the concept of sustainable development so that it would be easy for development practitioners, researchers in the field of sustainable development, policy makers and captains of industry, to have a firm grasp of the issue being discussed.

In a definition provided by the WCED (Brundtland Report, 1987:46) they framed the definition of sustainable development like this: ‘Sustainable development is a development that meets the needs of the present, without compromising the ability of future generations to meet their own needs (Brundtland Report, 1987:43)’. This definition envisages that in an effort to enthrone the policy of sustainable development in an

activity like fishing, it is vital that governments and fishermen adopt a policy that would sustain the economic needs of the fishermen and meet the nutritional needs of the present generation. To attain this goal, efforts should be geared towards preserving the fishing stock in the seas to enable them replenish itself continuously for the use of future generations. This means that the principle of sustainable development while it endeavors to meet the wishes and aspirations of the present generation, it must not endanger the needs of the future generation also. In another section of the report, they elaborated more on the meaning of sustainable development and this is how they put it:

“Sustainable development is a process of change in which the exploitation of natural resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance the current and future potential to meet needs and aspirations” (WCED, 1987:46).

There is no agreement between development practitioners, researchers, policy makers and captains of industry, on an accepted meaning and definition of sustainable development. Nevertheless there are some definitions that have encapsulated the inclusive nature and meaning of sustainable development. These are listed below:

- Sustainable development involves “a pattern of social and structural economic transformations which optimizes the economic and other social benefits available in the present, without jeopardizing the likely potential for similar benefits in the future. A primary goal of sustainable development is to achieve a reasonable and equitably distributed level of economic well-being, which can be perpetuated continually for many human generations” (Goodland and Ledec, 1987:35-36).
- Sustainable development is a concept which involves “satisfying the multiple criteria of sustainable growth, poverty alleviation, and sound environmental management” (World Bank, 1987:10).
- Sustainable development is “development that is likely to achieve lasting satisfaction of human needs and improvement in the quality of life” (Allen, 1980:23).
- Sustainable development involves “learning how long-term and large scale interactions between environment and development can be better managed to increase the prospects for ecologically sustainably improvements in human well-being” (Clark and Munn, 1986:5).

## **Dimensions of Sustainable Development:**

### **Economic Dimension of Sustainable Development:**

The economic dimension of sustainable development as enunciated by Principle 8 (Rio declaration), indicates that “To achieve sustainable development and a higher quality of life for all people, states should reduce and eliminate unsustainable patterns of production and consumption and promote demographic policies” (cited in Ntsime, 2002:58). This dimension gives prominence to the economics of supply and demand, the allocation of correct prices and the external effects of cost-benefit analysis. The economic dimension is uncertain about the future outlook of resource demands and the policies to be adopted to protect or preserve existing natural resources and prevent them from overuse and exploitation (European Commission, 1998). This dimension pays attention to untrammled economic growth and development while ignoring human development (Ntsime, 2002:58).

We need to remember that the assumption that economic growth (usually measured using the GDP) to measure development and social wellbeing originated from the ‘invisible hand theory’ of Adam Smith (1977). The author believes that measuring development in developing countries through the use of only economic growth and GDP as an index is a flawed and inefficient methodology, as it ignores or is incapable of capturing many of the activities in the informal sector of the economy. Using GDP as a sole indicator also ignores the level of poverty and unemployment in most of the developing world. Most times, economic growth does not translate into development for the ordinary person in the street especially those that live in developing countries of the world like sub-Saharan Africa. Senator Robert Kennedy of the United States amplified the narrative of those who see the weaknesses of using GDP as a sole determinant of development when he opined in 1968 (cited in Smith, 2003) that:

“The gross national product includes air pollution and advertising for cigarettes, and ambulances to clear our highways of carnage. It counts special locks for our doors, and jails for the people who break them. GNP includes the destruction of the redwoods and the death of Lake Superior. It grows with the production of napalm and missiles and nuclear warheads. And if the GNP includes all this, there is much that it does not comprehend. It does not allow for the health of our families, the quality of their education, or the joy of their

play, it is indifferent to the decency of our factories and the safety of our streets alike. It does not include the beauty of our poetry or the strength of our marriages, or the intelligence of our public debate or the integrity of our public officials. GNP measures neither our wit nor our courage, neither our wisdom nor our learning, neither our compassion nor our devotion to our country. It measures everything, in short, except that which makes life worthwhile; and it can tell us everything about America except whether we are proud to be Americans” (Smith, 2003).

Economist magazine (2013) showed that 6 of the world’s 10 fastest growing economies of the past decade are in sub-Saharan Africa and the list includes Angola, Congo, Ethiopia, Malawi, Nigeria and Tanzania. After separating economic data from real life situations, the evidence points to the fact that the impressive economic growth raked up by these countries have not benefitted the ordinary citizens of those countries, as poor governance, corruption etc., have made sure that only the political elite and their allies in the respective countries and their allies enjoy the benefits of the much vaunted economic growth.

The weakness of using GDP as a measure of economic growth and wellbeing can be seen in most of sub-Saharan Africa, where millions of citizens work in informal settings as carpenters, bricklayers, petty traders etc., and are outside the net of the formal sectors which are counted and measured in terms of the GDP. As is the case for most of Africa, the figures arrived at through the GDP could possibly be flawed as they may not reflect the true reality and the standard of living experienced by people in these economies (Ukwandu, 2009:140). According to the World Bank (2006), the West African countries of Nigeria, Angola and Equatorial Guinea were quoted as having a higher GDP and better economic growth than most countries of the world in 2006, but the reality of life in these countries paints a picture of acute deprivation, poverty, crime and food shortages. The GDP as a measure of economic growth and development may be a reliable tool in developed countries of the world. The use of GDP to measure economic wellbeing could be reliable in the developed countries of the world because both the informal and informal sectors of the economy are most times registered with the tax authorities and it is easy to obtain precise information about the number of the informal sectors of the economy. In contrast to that which exists in the developing countries of the world

especially sub-Saharan Africa, data is unreliable and many sections of the informal economy operate without any sort of registration, hence the use of GDP to capture the size of these economies may be problematic.

### **Environmental Dimension of Sustainable Development:**

The environmental dimension of sustainable development is covered by Principles 4 and 6 of the United Nations Conference on Environment and Development (1992), which asserts that “In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it (Principle 4)” and that “the special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority. International actions in the field of environment and development should address the interests and needs of all countries” (Principle 6) (cited in Ntsime, 2002:58).

Concern for the environment which is encapsulated in Principle 6 becomes relevant when juxtaposed with the increasing rate of resource consumption and depletion, and rising world population to meet human needs which have quadrupled over the years (WWF, 2008: 2). The necessity for protection of the environment if sustainable development is ever going to be realisable is buttressed in a whole lot of worrying trends taking place in the environment. For example, fishery stocks globally are declining yearly with around 80 percent of the world marine fish stocks, for which data is available, fully exploited or overexploited (Secretariat of the CBD, 2010: 48).

According to the Millennium Ecosystem Assessment, their analysis shows that the provision of many crucial ecosystem functions—such as water, biodiversity, fibre, and food—is being put in danger due to the impact of unregulated exploitation of natural resources and wanton economic growth in the developed world (Hassan et al., 2005). In the water sector, scarcity of fresh water is a growing concern for many regions in the world, especially in the developing countries, and it is worse in South Africa which is a country in need of fresh water. Around 50 countries both in the developed and developing world are currently facing moderate to severe water stress (WWF, 2008). If we take into consideration the deleterious impact of climate change and its

concomitant effects on water stress, then we will realize the need for all national governments and private companies globally to wake up to their role as stake holders in our fragile earth, to mobilise and protect the environment as advocated in this dimension.

This dimension is slanted towards protecting and encouraging a delicate and careful use and exploitation of the earth’s resources. Environmental impact assessment has become a common principle for the environmental dimension (Principle 17) (Simonovic, 1996:225). These assessments strive to maintain environmental integrity (Simonovic, 1996:225). The World Commission on Environment and Development's (1987) definition is built on the same understanding of maintaining a correct balance (intergenerational equity) and integrity towards resource exploitation. Environmental ecological integrity gives prominence to the conservation of biodiversity which would invariably provide food, energy, raw materials, industrial chemicals and medicine, as well as important social and cultural benefits (Ukwandu 2009:140).

The World Commission on Environment and Development's definition that the present generation should preserve resources for other generations reveals that the environmental objectives of developed countries will differ considerably from those of developing countries; especially those in sub-Saharan Africa. Developing countries are adopting alternative development policies and goals which are not necessarily in sync with that of the developed world. This policy of the developing world links the problem of environmental destruction to issues of basic needs provision, distributional equity and social justice, local self-reliance and popular empowerment (Brohman, 1996:391).

There has been a gradual development of a value system pertaining to the morality of intergenerational justice as to how the present generation deals with the environment (Van den Bergh and Straaten 1994:33; Rao, 2000:69-70). Haq (1995:79) elaborated, “Environmental concerns are not science fiction- they are real. The facts of environmental degradation are far more than the exaggerations of excited minds and they are shocking”. Perhaps what remains a challenge is the integration of environmental and human development concerns. As the situation stands today, the former still occupies a high status because it is supported by countries and organisations which have sufficient resources and power especially those in the developing world (Haq 1995:79).

### **Technological Dimension of Sustainable Development:**

For the past four decades, scientific and technological innovations of the world have assumed a high status in terms of scientific advances, which were branded a great success in terms of development issues. The technological dimension of sustainable development is viewed as a solution to the many problems confronting humanity ranging from medicine, to food, housing, transport, education, healthcare, etc. This prompted the notion of appropriate technology, which was subsequently linked to Principle 14 of the United Nations Conference on Environment and Development (1992). This dimension makes the case for a concerted political will (nationally and globally), and technological wherewithal to combat environmental degradation and over-exploitation. The call of this dimension is for national governments to hold companies accountable for their damage to the environment may be difficult to enforce especially in the developing countries of the world. For example in Nigeria, it is almost impossible for the communities and national government of Nigeria to hold oil companies like Shell and others accountable for the damage they have caused in the rural community of Ogoni in Rivers state. The oil companies were able to use all sorts of tactics to subvert and disregard the law on protection of the environment and the eco-system because of the weakness in the national environmental impact assessment system and even also because of corrupt government officials.

Haimes (1992:189) observed that this dimension promotes a creative application of technology which encompasses the responsibility to plan, design and construct those systems that will not only solve the immediate problems, but which are sensitive to the long-term interactions of such technologies with the environment and which will inevitably affect the sustainability of the solution. The dimension emphasises a technocratic solution to many problems that emanate from the environment through the use of cleaner energies and technologies which are not harmful to the environment. It also seeks to curb the dangerous effects of climate change.

### **Human Dimension of Sustainable Development:**

The human dimension of sustainable development is covered by a number of Principles, such as Principle 5 of the United Nations Conference on Environment and Development (1992), which indicates that “All states and

all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development, in order to decrease the disparities in standards of living and better meet the needs of the majority of the people of the world” (UNCED, 1992)

The human dimension recognizes the social, economic and environmental benefits which can be derived if there is a concerted effort by the public and private sectors, directed towards the protection of the environment. According to this dimension, people are not only seen as beneficiaries of change in the community, but also as agents of change. The human dimension is interested in the quality of life of the people (Ukwandu, 2009:140). The dimension subscribes to the notion of citizen involvement and empowerment in the process of development, and is further complemented by Principle 10, which emphasises extensive public participation in decision making and the success of information and legal remedies regarding the environment (Ginther et al, 1995:33).

To validate the narrative of the human dimension of sustainable development, De Beer (1997), is of the view that development has to involve the community if it is ever going to be meaningful and sustainable. Based on this narrative by De Beer (1997), the concept of sustainable development has to be rooted in the needs of the poor, and not in the prophetic utterances of the ‘voodoo priests’ from Washington. Robert Chambers (1983:144) agrees with him on the need for community empowerment and participation in all facets of development for it to be fruitful. This is how Chambers explained it: “the best approach (towards any development) in each situation may be an unconstrained dialogue with the poor, and an effort to learn from them what their priorities are” (Chambers, 1983:144).

Chambers (1983:112) is of the view that if we are serious about eliminating poverty on the continent, we need to end what he calls the “voicelessness” and “powerlessness” of the poor. The poor have been passive spectators of their own development and development projects undertaken on their behalf for too long. The human dimension calls for a paradigm shift, whereby towns, villages and citizens in rural areas are allowed to talk and be involved in efforts to end something such as the absence of clean water in their community or to provide security in a rural area riddled with crime and violence. Chambers (1983:104) bemoaned the current

orthodoxy in development efforts in Africa when he opined that:

“Poor people are rarely met; when they are met, they often do not speak; when they speak, they are often cautious and deferential; and what they say is often either not listened to, or brushed aside, or interpreted in a bad light” (Chambers, 1983; 104).

Haq (1995) believes that empowerment occurs through decentralized community participation in national development goals and policies. For this to occur, national governments have to show a political will and commitment towards improving the quality of peoples’ lives. This is because an effort to protect the environment through community participation and empowerment also invariably leads to development. The human dimension therefore recognizes significant links between environmental, technological and economic dimensions of sustainable development. The dimension also acknowledges the need for the creation of an enabling environment for the optimal utilization of human resources wherever they may be whether in the urban or rural areas.

It is the view of the World Resources Institute (2000), that beyond meeting basic needs, sustainable development involves improving social wellbeing, protecting cultural diversity and investing in human capital. The human dimension of sustainable development is aware of the need to consider the broader social imperatives within which poverty and underdevelopment are embedded. This means that to address the incidences of poverty and improve the lives of people, it has to involve empowerment in the radical sense, which is political empowerment. This empowerment should and would empower local communities to make and alter decisions that directly affect them, including use and access to opportunities and resources.

The human dimension of sustainable development envisages a possibility where people will ultimately become sustainers of development, and could thus sustain their own development. Empowerment according to this dimension should be propelled by the fact that the poor people in many developing countries of the world especially those in sub-Saharan Africa, have received few benefits from the current globalisation of trade and investments (Pezzoli 1997). Some of the reasons for this unfairness lie in the distribution of resources and receiving access to the benefits of globalisation could

stem from political, ideological and economic factors which must be tackled before the current unfairness and inequity can be solved. As spelt out by Fitzgerald et al (1997: 278-289), the central challenge of sustainable development is one of human resource capacity building and institutional strengthening for the management of sustainable development. Agenda 21 and the World Summit on Sustainable Development (Copenhagen Declaration), and their pursuit of poverty alleviation strategies, are convincing proof of the seriousness of the world with regard to sustainable human development. The following priority actions are demanded from all the countries of the world:

- Improvement of access to sustainable livelihoods, entrepreneurial opportunities and productive resources.
- Empowerment of people living in poverty especially those in the developing countries of the world.
- Addressing the disproportionate impact of poverty on women and children globally, and in sub-Saharan Africa in particular when compared with the relative wealth and opulence of the majority who lives in the developed world (Ginther et al., 1995; Fitzgerald et al, 1997:278-289; Haq 1995:5).

#### **Conclusion and Recommendations:**

It is vital to state here that the concept of sustainable development does not and cannot refer only to the development process of the developing countries. It is very much needed in the developed world because it was in fact the untrammelled economic growth and development which happened in the developed world that brought the concept into global attention. This concern was underscored by Haque (1999:7) who elaborated that it was the enlarged international disquiet for re-evaluating development paradigm based on the logic of industrialism that fortified the focus on the question of sustainable development. In sub-Saharan Africa, there is paucity of research on the idea because of the high level of poverty and underdevelopment which ravages the region, as many policy makers and researchers believed that it was the developed world that should take the bulk of the blame for the absence of sustainable development in the world. This narrative is based on the assumption that Sub-Saharan Africa has not benefited enough from the globalisation of trade and industries in the world.

In a related postulation, a special session of the United Nations (UN) General Assembly concluded that

the “overall trends for sustainable development are worse today than they were in 1992” (UNDP, 1996:4). To reinforce the sentiments shared by many in the developing world, some policy makers and experts associated with the institutions of global governance like the International Monetary Fund and the World Bank have accepted that macroeconomic policy and international free trade alone are not improving the development prospects for the world’s poor, especially those in sub-Saharan Africa. This means that chronic impoverishment and environmental degradation reinforce each other to create increasingly unstable social and ecological systems (Camadessus, 2000; Sachs, 1999, cited in Muducumura, 2002:137). It was the view of the World Bank (2013) that the world has had an unparalleled rate of poverty reduction since the early 1980s, and in this time the number of people living in extreme poverty was reduced by more than 700 million. Though much of this decrease in poverty levels was a result of the economic transformations witnessed in China and India, 1.2 billion people mainly in Sub-Saharan Africa remained entrenched in abject poverty

and penury by 2010 (World Bank, 2013).

There is not enough research on the concept of sustainable development in Sub-Saharan Africa because the region is faced with high levels of poverty and underdevelopment as mentioned earlier in the article, and also because the region lacks the technological wherewithal to mount a serious challenge against the problem of environmental degradation and unfairness. Consequent upon this, it is vital that the developed world offer more assistance to the developing world not only to confront the evils of poverty and underdevelopment, but also to ensure that sustainability prevails in the world. This article in clarifying the different dimensions of sustainable development has provided a template for development practitioners, researchers, students and policy makers who may be interested in having a thorough understanding of the dimensions of the concept of sustainable development. This will provide them with a useful framework for implementing policies and programs that pertain to the concept in the public and private sectors of their respective countries.

#### REFERENCES

- Adams, W. M. (2001). Green development: environment and sustainability in the Third World. London: Routledge.
- Allen, R. (1980). How to save the world: Strategy for conservation. London: Kogan Page.
- Brohman, J. (1996). Popular development: Rethinking the theory and practice of development. Washington, DC: Blackwell.
- Camadessus, M. (2000). Speech to the United Nations Conference on Trade and Development (UMCTAD). Bangkok. IMF Survey, 4, (29):9.
- Chambers, R. (1983). Rural development: putting the last first. London: Longman.
- Clark, W. C and Munn, R. (1986). Sustainable development of the biosphere. Cambridge: Cambridge University Press.
- Corbridge, S.E. (1993). Marxism, modernity and moralities: Development Praxis and the claims of distant strangers. Environment and Planning: Society and space. New York: Columbia University Press.
- De Beer, F. (1997). The community of the poor. In F, C De Beer and H.J. Swanepoel (Eds), Introduction to development studies. Halfway House: International Thomson.
- Economist Magazine, (2013). Development in Africa: growth and other things. 1. May. Available at <http://www.economist.com/blogs/baobab/2013/05/development-africa> (Accessed 15th February 2015).
- European Commission. (1998). Towards sustainable water resources management: A strategic approach. Guidelines for water resources development co-operation. Brussels: European Commission, Directorate-General for Development; Brussels: EU.
- Fitzgerald, P. Lemon, A. and Munslow, B. (1997). Managing sustainable development in South Africa. Cape Town: Oxford University Press.
- Ginther, K. Denters, E. and Waart, P.J.M. (1995). Sustainable development and good governance. Dordrecht: Martinus Nijhoff Publishers.
- Goodland, R. and Ledec, G. (1987). Neoclassical economics and the principles of sustainable development. Ecological Model, 38. (19):56.
- Goodland, R.J.A. Daly, H.E. and El Serafy, S. (1993). The urgent need for rapid transition to global environmental sustainability. Environmental conservation, 20: 297-309.
- Goulet, D. (1995). Development ethics: a guide to theory and practice. London: Zed Books.
- Haimes, Y. (1992). Sustainable development: A holistic approach to national resource management. Journal of International Water Resource Management, 8. (8):34.
- Haq, M. (1995). Reflections on human development. Oxford: Oxford University Press.
- Haque, M.S. (1999). The fate of sustainable development

- under neo-liberal regimes in developing countries. International Political Science Review, 20, (2):78.
- Hassan, R. Robert S and Neville, A. (eds.). (2005). Ecosystems and Human Wellbeing: Current State and Trends, Volume 1. Washington, D.C.: Island Press.
- Morgan, W.B. and Solarz, J.A. (1994). Agricultural crisis in sub-Saharan Africa: development constraints and policy problems. Geographical Journal, 9, (160):57-73.
- Mudacumura, G.M. (2002). Towards a general theory of sustainability: Bridging key development dimensions through a multi-paradigm perspective. Unpublished PhD dissertation. Harrisburg: Pennsylvania State University.
- Ntsime, P.T. (2002). Towards sustainable development; a participatory model for the water services sector in South Africa. Unpublished PhD dissertation. Pretoria: University of South
- Oxfam, (2014). Even It Up: Time to end Extreme Inequality. Available at <https://www.oxfam.org/en/research/time-end-extreme-inequality> (Accessed 20 January 2015).
- Pezzoli, K. (1997). Sustainable development: a transdisciplinary overview of the literature. Journal of Environmental Planning and Management, 40, (5): 549-574.
- Rao, P.K. (2000). Sustainable development economics and policy. Northampton: Blackwell Publishers.
- Sachs, J. (1999). Helping the world's poor. The Economist Magazine, 20 June.
- Secretariat of the Convention on Biological Diversity, (2010). Global Biodiversity Outlook 3. Montreal: Secretariat of the Convention on Biological Diversity. Available at <http://www.cbd.int/doc/publications/gbo3-finalen.pdf> ( Accessed on 20 January 2015).
- Simonovic, S. (1996). Support systems for sustainable management of water resources. Journal of the International Water Resources, 21, (4):21.
- Smith A.(1977). An inquiry into the nature and causes of the wealth of Nations (ed) by Edward Cannan. Chicago: University of Chicago Press.
- Smith, B. (2003). Principles of macroeconomic analysis. Melbourne: Australian National University.
- Timberlake, L. (1985). Africa in Crisis: the causes, the cures of environmental bankruptcy. London: Earthscan.
- Ukwandu, D. C .(2009). Water Use and sustainable development in South Africa. Unpublished MA dissertation. Pretoria: University of South Africa.
- United Nations Conference on Environment and Development. 1992. Agenda
- United Nations Development Programme, (1996). Human Development Report. 1996.Oxford: Oxford University Press for UNDP.
- United Nations Development Programme. (2003). Millennium development goals: A compact for nations to end human Poverty. New York: United Nations for UNDP.
- Van den Bergh, J.C.M. and Van der Straaten, J. (1994). Toward sustainable development: Concepts, methods and policy. Washington, DC: Island Press.
- World Bank. (1987). World Development Report 1987. Oxford: Oxford University Press.
- World Bank. (2000). World Development Report 2000/2001–Attacking Poverty. New York: Oxford University Press.
- World Bank. (2006). World Development Indicators Data. Washington, DC: World Bank.
- World Bank. (2013). Poverty reduction and Economic Management network. Economic Premiere. Washington DC: World Bank Press.
- World Commission on Environment and Development. (1987). Our common future. Oxford: Oxford University Press for WCED.
- World Resource Institute. (2000). World Resources 2000-2001: People and ecosystems. The fraying web of life. Washington, DC: WRI.
- World Wide Fund for Nature, (2008). Living Planet Report. Gland, Switzerland: WWF International:

## البحث في الأبعاد المختلفة للتنمية المستدامة

داميان أوكواندو\*

### ملخص

أصبح مصطلح التنمية المستدامة من أهم المصطلحات المتعارف عليها في مجال التطوير، بعد نشر تقرير (Brundtland) من خلال المجلس العالمي للتطوير والبيئة. ومن خلال نشر هذا التقرير أضحت التنمية المستدامة من أهم المصطلحات المتعارف عليها والمتبناة بقوة في مختلف المنظمات والمؤسسات العالمية والدولية حيث يقوم هذا البحث بمناقشة الأبعاد المختلفة التي تندرج ضمنها التنمية المستدامة.

**الكلمات الدالة:** التنمية المستدامة، التطوير، البعد البيئي، البعد التكنولوجي، البعد الإنساني.