Greening the Environment: A Road to Achieving MDG 7 in Sub-Saharan Africa (SSA)

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Abstract: *This article is about greening the environment in the Sub Saharan Africa by critically assessing the promotion of environmental sustainability. The research focus has been on policies and strategies that characterize the successes and failures of MDG – 7 (environmental sustainability). Issues to do with ecological system and the design system were found out to be major challenges that constraint environmental sustainability. Nevertheless, various global policies have been designed to overcome such challenges despite limited local, regional and global collective ownership and responsibility. Environmental planning has been at the helm of some successes in some countries. Within this context, lack of visionary leadership has also affected environmental protection and management. In addition, countries that has made some trade-offs between the environment and other sectors of the economy has made tremendous achievements. Education has played a leading role in greening the environment as way to achieve MDG 7. Both informal and formal education has been a strategic mechanism to promote awareness, especially in countries where environmental issues matters to their development process.*
Key words: *Greening, Environmental sustainability, MDG 7*

I. INTRODUCTION

While environmental sustainability was and still at the epicentre of Millennium Development Goals (MDGs) – specifically MDG 7, the environment and ecological system are still exposed to danger due to economic activities by human race (United Nations, 2000), especially in SSA. This is partly due to people's reluctance to focus on their geo-ecological set-ups as well as ecological systems, both in the present and future (Earth Negotiations Bulletin, 2009; Saamah et al., 2011). Environmental sustainability can only be achieved if it is only reflected in the people's economic, ecological, social and cultural systems (United Nations, 2013).

Environmental sustainability in the context of MDGs has achieved successes and failures (United Nations, 2013). It is worthy to note that in Sub-Saharan countries, failures has been attributed to limited financial and technical means, political conflicts resulting from the battle for natural resources, lack of political will, rising inequality and unemployment, and so on. Consequently, effects resulting from climate change, poor waste management and increase of green gas emissions have been tremendously increasing and negatively affecting people's welfare (IISD, 2009).

Countries like Burundi, Democratic Republic of Congo, Mali, Guinea Bissau, Ivory Cost, Somalia, Central African Republic, and so on have faced long protracted conflicts due to lack of democracy and good governance. As a result, these countries' development agendas were halted, including MDGs – recognizing that armed conflicts effects the environment and other sectors of a nation.

The Organization for Economic Cooperation and Development (OECD) (2009) asserts that such political environments has affected poverty reduction policies and programs and decreasing attention to environmental issues. In addition, industrial advancement in some countries has negatively affected the environment due to waste disposal and gas emissions. This has been due to lack of policy enforcement to protect the eco-system in SSA. On the other hand, business firms are continuously resisting to change their old ways of doing business that are environmentally and ecologically friendly. Changing old ways partly means redesigning modes and systems of production (Harris, 2007).

II. AGENDA 21: THE GENESIS OF GROWING GREEN

Basically, environmental sustainability is rooted from the United Nations Conference on Environment and Development, held in Rio de Janeiro, 1992 (OECD, 2001) which was also informed by the Brundtland Commission's report of 1987 (Baker, 2006; Blewitt, 2008). The beginning of the 21st Century between 2000 and 2001 was characterized by two important historical events: United Nations Millennium Summit that adopted MDGs and Earth Charter (Earth Charter, 2000; United Nations, 2001).

Since UN's adoption of MDGs in 2000, several World Summits were held, for example, World Summit 2002; Kyoto Protocol, 2005; United Nations Conference on Sustainable Development, 2012, to tackle issues of sustainable development – environment being one of the dimensions and at the same time a seventh MDG, all was guided by the Agenda 21.

Despite the fact that all economic activities depend on the environment, the promotion and awareness of environmental protection and management as well as protection of the eco-system are vital for future sustainability (UNESCO, 2009; Baker, 2006). In this regard, Forrester, et al., (2009) asserts what is required: valid scientific knowledge and rethinking our socio-economic systems. Definitely, such knowledge and rethinking systems would minimize our waste disposal, limit pollution, value nature's diversity and increase community's empowerment to participate in decision-making processes (Huckle and Sterling, 1996). Table 1 summarizes different "policies in making" that has promoted environmental sustainability:

Table 1: Global policies in making to promote environmental sustainability

No	Policies/Summits Adopted into Global Policies	Period
1	United Nations Conference on Environment and Development held in Rio de Janeiro	1992
2	Housing and Settlement held in Istanbul	1996
3	Earth Charter	2000
4	MDGs	2000
5	Kyoto Protocol in Japan	2005
6	World Summit on Sustainable Development	2002
7	Copenhagen World Summit	2009
8	Durban Conference in South Africa	2012

Source: Huckle and Sterling, (1996); Baker, (2006); REMA, (2012).

The aforementioned policies were designed, signed and ratified by a variety of states to promote sustainable development, among others, but less has been achieved compared to the set objectives due to lack of political will by some governments. This lack of collective responsibility at national, regional and global levels in the political context has increased problems associated with global warming, pollution, biodiversity, health and population and poverty in some Sub-Saharan countries.

Environmental sustainability – MDG 7: Is it achievable?

Environmental sustainability is linked to almost all MDGs. That is why there is a need for making trade-offs between the environment and other sectors of the economy (OECD, 2001) which is vital to achieving sustainable development in the developing world. Table 2 explains the inter-linkage.

Table 2: The link between Environmental Sustainability and the MDGs

1.	Environmental goods and services are essentials for the global economy
2.	Ecological infrastructure undermines the MDGS
3.	Decline of coral reefs has affected coastal defenses, tourism revenues and other incomes of the local population
4.	Decline of coral reefs has affected fish production, causing increased hunger, MDG 1 affected
5.	Deforestation also increases greenhouse gas emissions
6.	Clean energy would contribute to mitigating climate change if there were to be a reduction in the burning of fossil fuels

Source: United Nations Environmental Program (UNEP) (2010).

Environmental sustainability in practice remains a puzzle in many African countries (Morton, 1996). However, some have adopted environmental policies into their laws and development agenda but financial means and relevant knowledge sometime becomes a major constraint. Greening the environment to achieve sustainability is achievable through making decisions as well as taking actions that promote preservation of the natural beauty and resources. Much focus should be on preserving capability of our environment to support human life (Huckle and Sterling, 1996).

In addition, design system of our industries has had negative impacts on human life and natural resources. On the other hand, forests, woodlands, oceans, lakes and rivers have been polluted as a result of irresponsible businesses. These realities have characterised our doing business in the region despite existing regulatory bodies and their limited capacity to deal and foresee such negative effects.

Recognising that environmental sustainability is a process, it can only be achievable if governments can enforce decisions and actions that protect our natural resources. This requires collective efforts ranging from communal, national, regional and global levels so as to embrace global ethics and ownership.

Greening Our Economy: Achieving MDG 7

Green economy has been instrumental towards fighting environmental damage and degradation across nations (UNEP, 2010b). The United Nations Environmental Program (UNEP) argues that environmental sustainability cannot be achieved without green economy (UNEP, 2010a). Green economy strives for environmental

sustainability through market-oriented policies and system regulations (Deichmann and Zhang, 2013; World Bank, 2013).

Developing countries are struggling to promote green economy by encouraging economic investments that enhance the Earth's natural capital and reducing ecological and environmental risks (Hillebrand, 2008; Stern, 2008). Green economy sectors include: renewable energy, low-carbon transport, energy-efficient buildings, clean technologies, improved waste management, improved freshwater provision, sustainable agriculture and forest management, and sustainable fisheries (Sachs, 2008; REMA, 2009; UNEP, 2010b).

Green economy does improve water and food security by enhancing environmental and natural resource usage and management. Energy use, water quality, transport, fisheries in developing nations remains inadequate because countries have failed to adopt green economy that is critical to MDGs' environmental sustainability.

Environmental planning: Embracing MDG 7

In SSA, environmental planning is gaining momentum in some countries by incorporating it in their national budgets and development agendas. Such countries include: Rwanda, Ghana, South Africa, Botswana, and so on (United Nations, 2012). Christiana and Maria, (2002) argue that the environmental planning should be typically problem-focused and future-oriented. That is why these issues need to be reflected in national budgets and development agenda (Sachs, 2008).

Nevertheless, lack of collective action on communal, national, regional levels and beyond has constrained achieving MDG 7 on a sustainable scale. Buchholz (1993) adds that environmental planning is also constrained by population growth and concentration in urban areas whereby increase in population leads to increase in more goods and services to meet human needs. It consequently leads to more waste material discharged in the environment (Harris, 2007; Sachs, 2008b).

In some countries, the planning has not been recognising the precariousness of states, systems thinking and ethical considerations of social equity. Consequently, it has affected the issues of knowledge, evidence and uncertainty that are bound in technology and democracy (Harris, 2007), thereby limiting the promotion of trust and understanding at community level.

Education and environmental protection

Education has a crucial role in promoting environmental sustainability through knowledge acquisition in schools and public awareness through the media, workshops or any other form of gatherings. Some schools in SSA included environmental issues in their school curricula (UNESCO, 2008).

Education provides a cognitive capacity to deal with issues surrounding man (Birdsall and Sabot, 1998; Earth Charter 2000). Huckle and Sterling (1996) argue that education is critical for addressing environmental concerns, awareness, values and attitudes that are consistent with sustainable development. In developing countries where illiteracy is a major challenge it helps to deal with resistance to change.

The Earth Charter agitates for both formal and informal education as approach to raising awareness of ecological issues (Earth Charter, 2000). Advocating for the above types of education is to make information or knowledge accessible to both young and old generations with respect to their ecological surroundings. The Charter also advocates for formal education that embraces environmental issues both in public and private school curricular. This is also reflected in the UNESCO's Mid-Term Strategy 2008-2013. This strategy advocates for promotion of access to information in different categories of people whether through formal or informal sectors of education (UNESCO, 2008).

Formal education being the formal channel of passing knowledge to people is not necessarily sufficient to reach a wider population. Old generations and/or people who did not get a chance to access formal education, they can be reached through a variety of methods and programs like in workshops, communal meetings and awareness programs through the media. This is much articulated in UNESCO's four pillars of learning: learning to know, learning to do, learning to live together and learning to be (UNESCO, 2008).

Environmental sustainability: Gender role in attaining MDG 7

Gender is a cross-cutting dimension in all sectors, environment inclusive. In some countries, gender has played an important role in environmental protection and management, though, in some countries it has been the other way round. In countries where gender has been empowered, there is a noticeable balanced approach to environmental sustainability as well as achieving the MDGs in general. Baker (2006), links gender with environmental protection and notes that it:

"requires understanding of the gender –specific impacts of environmental degradation and misuse; requires recognition of women's relationship to environmental resources and their roles in resource planning and management; and that requires incorporation of women's knowledge of environmental matters into policy and planning".

This implies that both women and men can impact negatively the environment, knowingly or unknowingly but what is important is an endeavor to collectively sustain their future welfare. Noting that the United Nations

Conference on Environment and Development held in Rio de Janeiro 3-14, June 1992, affirmed the importance of gender and environmental sustainability is worth to recognize that international policies took into account this perspective (UNCED, 1992). UNEP (2008) admits that ignoring the role of gender can lead to the environment risks as seen in table 3:

Table 3: Gender impacts resulting from environmental risks

- Men might be exposed to toxic chemicals used in mining, women will be exposed to pesticides used in export flower-industry);
- Women's and men's income-generating activities may require specific resources (fuel, water) that produce particular wastes;
- Environmental contamination produces different health hazards for men and women - women may be particularly vulnerable to home-based hazards such as indoor pollution;
- Women's workload to provide resources for the household (water, fuel, food) increases when resources become scarce;
- If environmental hazards produce illness, men and women have different responsibilities for caring for ill family members;
- Responses to environmental change vary with age, class, family hierarchy, and gender, and;
- Biases in educational and training systems may mean that women are less equipped than their male counterparts to understand, cope with, and anticipate environmental change or resource conditions.

Source: UNEP (2008).

The United Nations Environment Program explains that gender is evident in the use and management of resources and use of the environment. Ignoring gender differences can negatively affect collective responsibilities in managing, stewarding and use of resources (UNEP, 2008; Blewitt, 2008).

Countries in the developing world, specifically in Sub-Saharan Africa do depend largely on agriculture where women are most active agents in the sector, thus, their role in environmental protection and management cannot be ignored. Bearing in mind that most people in SSA depend on agriculture as means of survival, firewood as means of energy for cooking and their engagement in mining sector, the environmental surroundings mean a lot to their life. That is why the gender-perspective becomes relevant in environmental sustainability.

On the other hand, in African perspective the socio-political and culture constraints still negatively affects women's participation in realising developmental plans. If the mindset is not changed, predictably the post 2015 development agenda is likely to be affected as it has been the case in MDGs. It will continue to affect gender's role in environmental conservation, fighting soil erosion, promotion of water and food security and protection of the eco-system in general.

This requires continuous political awareness to foster collective ownership and responsibility (UNESCO, 2008), in the aftermath of 2015. To achieve the post 2015 development agenda, three principles will need to be promoted: universality, diversity and participation (UN, 2013).

The new environmental paradigm for MDG 7

The new paradigm that MDGs could have adopted in developing countries is that of a positive and innovative in nature towards environmental sustainability (Sachs, 2008). The emphasis is to focus on the changing nature of the eco-system affecting the needs of the present and future generations. In this regard, the Institute for Trade, Standards, and Sustainable Development (ITSSD) argues that to achieve this paradigm, there is a need for emphasizing the rule of law, scientific discovery, technological innovation, and the establishment of balanced, science-based and cost-effective national regulatory and standards systems.

The environment being the basis for man's survival, human activities are increasingly affecting the environment negatively. This has resulted into climate change effects that are continuously manifesting themselves due to little attention that has been given to the environment. This is largely due to industrial and technological innovation that is increasing gas emissions to the ozone layer despite global commitment to reduce environmental damage (Sachs, 2008; UNEP, 2010).

UNEP (2010) analyses that the Organization for Economic Cooperation and Development (OECD), in their study conducted in 2010, showed that commitment by governments to reduce gas emissions by 25-40% had reduced to 12%, contrary to what was recommended by the Intergovernmental Panel on Climate Change (IPCC, 2007). In addition, water and air are being polluted in developing world due to lack of policies and mechanisms to control such deterioration and poor sewage system is another challenge that affects people's welfare.

One cannot ignore the negative impacts of the financial global crisis of 2007-2010 that negatively affected the environmental protection resulting from the shortage of funds (UNEP, 2010). The lack of proper implementation of environmental policies has resulted into continuous ecological damage which results into climate change effects (Burton, 1996). In fact the "the environment exists for man, not man for the environment" (Burton, 1996, p. 152). Economists like Todaro and Smith (2003) have also emphasised the importance of protecting the environment by linking sustainable development with environment, population and resources, urbanization and global economy.

Environmental issues must be viewed as global instead of local and regional as resource limitations do affect everyone (Buchholz, 1993). This requires ecological consciousness and rethinking the future. Indeed, this

consciousness must reflect environmental protection which is human-centered and survival which is eco-centered. It also goes with protection of bio-diversity and control of population growth so as to enhance environmental resilience (UNESCO, 2008). The new paradigm has led to some successes though some failures have been identified, as shown in table 4.

Table 4: Successes and failures in environmental protection

No	Successes	Failures
1	An ozone-friendly future - The ozone layer is beginning to recover. International cooperation to eliminate ozone-depleting chemicals has been successful.	Collapse of leadership and a failure of the rich countries to deliver on their summit promises.
2	The rise of civil society- Experts, interest groups and ordinary people have made inroads into the environmental policy-making process.	Use it up, throw it out: over-consumption as a way of life - Despite increased awareness of the problems, it seems developed countries remain wedded to their pollution-intensive lifestyles.
3	The increasing of corporate social responsibility - Business is beginning to recognize its wider responsibility towards people, communities and the environment.	What price aid? The folly of the Washington Consensus - Strings attached to financial aid packages have done substantial harm to developing countries.
4	Levelling the information playing field - Electronic communications are making information more widely available and decision-making more transparent	Costing the Earth: economics still sends the wrong signals - Delegates at Rio recognized that economics and the environment needed to be brought into line, but it seems the environment is still being short-changed.
5	Knowledge is power: pushing the boundaries of science and technology - Major advances have been made in the way we understand natural systems, and in the development of sustainable technologies.	Whatever happened to world peace? - High hopes for harmony following the end of the cold war have been dashed by a fresh spate of armed conflicts.
6	Keeping track: measuring progress towards sustainability - The development of more accurate indicators and accounting practices gives us a better picture of our progress toward--or our movement away from -- sustainability.	Sea sickness: oceans and fisheries in peril - Marine ecosystems have paid a high price for overfishing, pollution and coastal development.
7	The Kyoto Protocol: global problem, global solution - Despite a U-turn by the U.S. and some backtracking in Bonn, Kyoto represents a crucial milestone on the road to a stable atmosphere.	Pressure mounts around scarce water resources - Climate change, coupled with political tensions and competition for increasingly scarce clean water, provides a recipe for conflict.
8	Other promising starts: landmark agreements on chemical and biological risks - Environmental agreements like the Bio-safety Protocol and the Stockholm Convention on Persistent Organic Pollutants offer new safeguards for communities and the environment, provided that they are matched by strong leadership.	Lost forever: species extinctions continue unchecked - Despite the good intentions of the Biodiversity Convention, thousands of species a year are disappearing from the face of the planet.

Source: IISD (2010).

The table (4) explains the achievements and failures of environmental sustainability. Challenges range from the developed countries to developing countries due to financial and technological capacity, global collective responsibility and ethical values.

Environmental ethics for sustainability

Forming a global partnership to care for the Earth is a collective entity. The need for knowledge and technology to protect our environment is viable to global citizens (The Earth Charter, 2000). There is an increasing gap towards environmental protection. The endeavor to protect both human and non-human life on the planet is a prerequisite for us and future generations. Our life systems and eco-systems are endangered by human activities (Noel, 2001; Deichmann and Zhang, 2013). The Earth Charter (2000) reminds us that when human needs are met, it does not necessarily mean that welfare has been achieved.

Environmental ethics cannot be realized without collective responsibility. Global citizens need to use their knowledge and willingness to equitably protect their future. This is because the quality of our water, soil and air has been depleted by environmental issues and global warning (Noel, 2001). Industrial activities are producing more gas emissions and toxic materials that deprive our lifestyles.

Environmental ethics requires connected efforts by the public and private sector as well as civil society organizations on international, regional, national and community levels. In addition, the need for viable structural changes in the management of the environmental affairs is so important to be adopted by states (OECD, 2001). On the hand, some in the western democracies have shown resistance to surrender economic growth for environmental conservation (Noel (2001). Technological friendly to the changing nature of the Earth can also contribute the environmental ethics, if scientists can rethink about future generations.

Environmental challenges down the road

Environmental challenges range from social, political, economic and technological. This section highlights some of the challenges.

a. Emissions and toxic gases

The growing industries across the world have been increasingly and negatively affecting the environment due to pollution and gas emissions (Sachs, 2008). There is limited human responsibility by global industries and companies. Even, the design system remains in faulty in way that toxins and emissions are result of the system (Blewitt, 2008; Deichman et al., 2013; World Bank, 2013).

The redesigning of the system is vital to reducing gas emissions to the ozone layer, water and soil pollution (Beder, 1994; Basu and Palazzo, 2008; World Bank, 2013). The global community businesses need to adopt technologies that are environmentally friendly (Sachs, 2008; World Bank, 2013). In other words, science and technology need to address sustainability challenges by focusing on the Earth's nature and its socio-ecological system (The International Council for Science and Technology for Sustainable Development, 2002; Rahul Tongia et al., 2005). Emphasis should also be put on politics, social institutions, human behavior, technological innovation, markets and the political economy (Rahul Tongia e al., 2005).

Lastly but not least, in the current 21st century, terrorism is continually becoming a threat to environment due to bombings that damage the environment and vehicles that are destructed which eventually are deposited into the environment.

b. Climate change

Global warming as a result of climate change is increasingly becoming a threat to the present and future generations (Baker, 2006; UNESCO, 2008; Deichmann and Zhang, 2013). Morton (1996) argues that climate change issues for the last two decades have been increasing due to poor management of the environment. He argues that in sub-Saharan Africa, climate change has been increasing due to the 'tragedy of the commons' where mostly cattle herders apply zero grazing on small plots of land as well as land rotations by farmers.

World summits like Copenhagen Climate Change Conference and the Kyoto protocol contributed to awareness and setting global policies to deal with global warming and climate change issues. Nevertheless, imbalances in sharing responsibility (between the rich and poor countries) remain a bigger challenge for our sustainable future (Deichmann and Zhang, 2013). For example, in 2007, US and Japan refused to ratify the Kyoto protocol with an argument that China and India are entitled to the same responsibility in carbon emission that increase year by year at the rate of 7% (Copenhagen Climate Change Summit, 2009).

Private sector: Do they care?

There is a gap between the public and private sectors in dealing with environmental issues in SSA. The involvement of the private sector is crucial given their contribution in environmental damage as a result of their economic activities (Natrass and Altomare, 2001; Sachs, 2008). In fact, "environmental problems are best analyzed as business problems" and private sector would love to see returns on their investments (Willard, 2002, p. 139).

In many developing countries environmental damages are not accounted both in the process of natural resources extraction and production (McDonough and Braungart, 2002). Sometimes, in conflict-torn countries like Democratic Republic of Congo (DRC), Somalia, Central African Republic (CAR), and so on, natural resource extraction is carried out by companies, in the absence of governments' knowledge, leading to uncountable environmental damages.

Natrass and Altomare (2001) argued that "natural world is not different from the human economy" which necessitates us to deploy appropriate technologies that environmentally friendly for eco-efficiency strategies. The biggest challenge is industrial structure that is based faulty design and production process as well as lack of responsible humanity (World Bank, 2013; Sachs, 2008).

However, in the last 20th Century and the beginning of the 21st Century, the world has witnessed private sector's involvement in environmental protection but there is a big way to go. Social entrepreneurship is expanding to environmental protection and sustainability. Governments in the developing world should ensure regulatory frameworks that are environmentally supportive for our future. Such frameworks need to be measurable using performance standards that internationally recognizable as means to verify compliance.

In doing so, regional trade blocks are expected to be an important catalyst in promoting environmental sustainability. In other words, environmental concerns should be included in the trading system between countries and/or among different regional economic blocs.

Businesses that take into account the nature of ecology do promote the surrounding community's survival and health (Meyer, 2010; World Bank, 2013). The link between economic development and environmental sustainability has been overlooked by some business communities (World Bank, 2013), a move that that post 2015 development agenda should emphasize, despite an increasing awareness that some countries have undertaken.

If trade systems are to incline environmental best practices, the post 2015 development agenda is to adopt

protectionist policies to countries that will refuse to adapt to the global concern. This can best be applicable to countries in regional blocs, for example, European Union in 2008-2009 denied Romania and Bulgaria to join the bloc due to some requirements that were not met, relevant trade systems that were environmentally friendly, inclusive (World Bank Report, 2010).

The international economy has been pushing it since MDGs came into force. Promotion of sustainable development through trade liberalization; making trade and environment mutually supportive; providing adequate financial resources to developing countries and dealing with international debt; and encouraging macroeconomic policies conducive to environment and development (Earth Summit Agenda, 2002; Willard 2002; Todaro and Smith, 2003).

III. CONCLUSION

Greening the environment is imperative for national, regional and global economy for the future. Environmental sustainability is a collective process that should be owned, promoted and advocated for at all levels. MDG 7 as one of the global policies to promote environmental sustainability has progressively improved especially in SSA, despite some challenges. Actors like national governments, media, private sector, civil society, etc have played a big role in countries like Rwanda, Botswana, Angola, Nigeria, Ghana, etc. This has been due to responsible governments in promoting awareness, ownership and putting in place relevant laws and regulations that promote the protection of the environment.

However, lack of collective decisions and actions as well as design systems by industries remain a major constraint to achieve environmental sustainability. Deforestation, pollution of forests and water bodies has been increasingly leading negative consequences to human life. It has been accelerated by increasing urbanization of towns and cities which also goes with population increase – eventually leading to increase in demand for more needs and waste disposal.

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