Journal of Energy Technologies and Policy www.iiste.org
ISSN 2224-3232 (Paper) ISSN 2225-0573 (Online)
Vol.3, No.11, 2013 – Special Issue for International Conference on Energy, Environment and Sustainable Economy (EESE 2013)

Living More Humanely and Sustainably: A Framework to Embracing Environmental Ethics as a Driver to Stable, Just and Self- Sustaining Societies and Economies of the World

Dr. Githui Donatus Mathenge
Senior Lecturer, School of Business
Dedan Kimathi University of Technology, PO Box 657-10100, Nyeri, Kenya.
*frdonatusmathenge@yahoo.com

Abstract
It is becoming increasingly more apparent that today's societies and economies are faced with multiple, interconnected challenges, such as climate change and significant ecosystem degradation; but it also has the unique opportunity to design and create a sustainable living for posterity. These challenges that necessitate the development of capable, responsible and effective ethical environmental frameworks are crucial to forming and implementing humane and sustainable societies and economies. There has been an explosion of concern in world economies and societies about the destruction of the environment leading to inhumane and unsustainable living. In response to these concerns, a range of environmental ethical philosophies that foster sustainable development have been developed by environmentalists, ethicists and philosophers. The philosophy of sustainable development offers new moral and ethical ideals for environmental concerns and has been widely adopted globally by many societies, leaders and economies. While many projects are guided by the principles of sustainable development, an environmental ethic has not fully been engendered in the process. Despite widespread environmental concerns, many global societies and economies, in general, focus on the domination of nature through science, technology, engineering, innovation and leadership, and ignore surrounding natural ecosystems. In this regard, it is urgently required that an environmental ethical theory which can be inculcated as a driver to the global societies and economies' behaviour be embraced. From the theoretical analysis of different views and debates of scholars and researchers on sustainability and environmental stability, this paper therefore recommends that there is a need for societies and economies to adopt ethical duties and virtues of a 'green' and sustainable society with an emphasis on positive environmental ends. This is because if societies and economies are to reduce their impact on the environment and preserve it for future generations, it is imperative that their actions are challenged and that they adopt new ways of revamping and protecting the environment to create a humane and a self sustaining world.
Keywords: Humane living, self-sustaining societies and economies, environmental ethics, Sustainable development

Introduction

Most people recognize that our planet is in a bad way and we all seem to have an opinion on environmental issues, such as climate change due to industrial effluents, inhumane living or the use of motor vehicles in cities. Different views have held regarding the true meaning of humane living and sustainability, and to this date no precise definition has been commonly adopted. Daily (1990) infers that Humane living not only instills the desire and capacity to live with compassion, integrity, and wisdom, but also provides the knowledge and tools to put our values into action in meaningful, far-reaching ways so that we can find solutions that work for all. Equally important, Nemetz (2003) contends that Sustainable living is a lifestyle that attempts to reduce an individual's or society's use of the Earth's natural resources and personal resources. Practitioners of sustainable living often attempt to reduce their carbon footprint by altering methods of transportation, energy consumption, and diet[1819]. Proponents of sustainable living aim to conduct their lives in ways that are consistent with sustainability, in natural balance and respectful of humanity's symbiotic relationship with the Earth's natural ecology and cycles[20]. The importance of environmental ethics is brought home daily by the news of global warming, loss of biodiversity and their effects on our lives, both now and in the future. There has been a rapid growth in innovation, knowledge, science and technology; so that humans now face choices we have never had to face before that affect the continuation of humanity and the world within which we live (Pearce, Markandya and

[18] Daly H.E. (1990). "Toward some operational principles of sustainable development." *Ecological Economics* **2**: 1–6.
[19] Nemetz, P.N. (2003). "Basic Concepts of Sustainable Development for Business Students." *Journal of International Business Education* 1(1)
[20] Beckmann, Volker, Nguyen Huu Dung, Max Spoor, Justus Wesseler, Shi Xiaoping (eds.) (2011). *Economic Transition and Natural Resource Management in East and Southeast Asia.* Series on Institutional Change in Agriculture and Natural Resources, Shaker-Publisher, Aachen.

Barbier, 1989). According to Singer, (1993), Environmental ethics has grown in importance in our times because to make no decisions about environmental issues is to decide in favour of the status quo, and that, we are told, is no longer an option[21].

Challenges such as climate change and the degradation of the environment are extremely complex and intricately interconnected (Gardiner, 2011). The world is more interconnected than it has ever been before; local matters can significantly influence global issues, and global issues often produce effects locally (Rockefeller, 2004). In order to successfully address these wide-ranging problems, economies and societies need to be able to understand the components, causes and end results of numerous decisions and issues. They also need to rethink their core values built on ethical pillars of humane living, to have "a deep knowledge of how social, economic and environmental issues interact". Different environmentalists from different economies and continents continue to develop important models to deal with this problem. For instance in Kenya, the late Nobel Prize winner, Prof. Wangari Maathai through her Green Belt Movement, made a significant move to keep our environment clean and sustainable by planting trees and ensuring that Kenyans live peacefully within the environment. (Green Belt Movement, 2006[22]). This campaign grew so fast in the country as she has explained in one of her major books. (unbowed 2006) Though there are such efforts in our society, there still exists an impediment towards achieving sustainability. Despite all these achievements, Kenya is not unique in creating solutions to problems arising from climate change and environmental degradation. Challenges such as, massive poverty, social injustice and democracy battles continue to affect all people directly or indirectly in different societies. This has been witnessed in some parts of Africa for instance, in the Democratic Republic of Congo where war is the order of the day (Tutu, 1990). Some parts of Southern Sudan are homes where fight for resources and unsustainability limits social and economic stability and humane living. Cases of militia and armed groups continue to deter the road to stability in many parts of Africa[23]. At this moment in the history of modernity, globalization and technology transfer of the 21st century, humanity is facing a number of shared challenges to our various ways of life. Challenges such as climate change, massive poverty and social injustice and democracy battles continue to affect all people directly or indirectly. Given this, there is an urgent need for societies and economies to address these collective challenges and facilitate our transition to humane living for sustainability, built on environmental ethics.

Sustainable societies and economies have to realize that the deep and complicated relationships between our challenges require equally sophisticated and complex solutions. In addition to understanding the interaction of social, economic and environmental factors, societies and economies must also notice and make sense of trends and understand behavioural patterns. In general, it is necessary to "Look for interrelationships among people, organizations and the actions they take, noticing the impact they have on one another in addition to society, the economy and the environment as a whole"[24]. The ability to think holistically and draw the connections between issues is of prime importance in promoting and fostering responsible and sustainable lifestyle choices (Walker, 2000).

Problem Statement

Environmental ethics, humane living and sustainability have strongly gathered momentum in many societies, organizations and economies across the world through a convergence of pressures from employees, investors, consumers, citizens, scholars, governments and non-governmental organizations. Expectations from these stakeholders shaped by current and future environmental and social forces such as climate change, the effects of pollution on public health, environmental degradation and social conflicts, water availability, scarce energy resources, social inequities and eroding trust in institutions, are forcing organizations, societies and economies to take a different, more humane and sustainable approach to execute their affairs. Therefore, the main purpose of this paper is to theoretically present key vital components of humane living and environmental sustainability, with regards to science and technology, engineering and innovation, modern civilization and responsible leadership.

[21] Peter Singer (1993) In his book *Practical Ethics*, advocated the preservation of 'world heritage. Their preservation ensures their survival for future generations to enjoy the environment.

[22] The Green Belt Movement (2006), *Wangari Maathai and Women in Forestry. She also wrote her autography entitled;* Wangari M. M. (2006); Unbowed: One Woman's Story; William Heinemann: London. This magnus opus (great work) narrates her own life and humble upbringing in her home near abadare ranges where she developed her passion and love for environmental conservation and later on the beginning of the Green belt movement.

[23] Tutu, D. (1998). Leadership. In Carnegie Commission on Preventing Deadly Conflict (Ed.), *Essays on Leadership* (pp. 67-70). New York: Carnegie Corporation.

[24] Adopted from Walker (2000), on his paper Respect for nature.

Literature Review

Living more humanely and sustainably is a vital quality which needs to change as the context demands, but there are a few consistent attributes or skill sets that successful societies and economies frequently possess to the benefit of the environment. The following section presents the main drivers that build ethical societies and economies for sustainable development, which include but limited to; science and technology, engineering and innovation, modern civilization and responsible leadership.

Science and technology

Science and Technology are growing at a rate that is faster than many of us can fathom. We are extremely fortunate to be living in such interesting times. It is our duty as members of the society and as common environmental shareholders at this point in history to embrace these technologies and assimilate and integrate them into the way we conduct ourselves (Elam and Bertilson, 2002). Technological developments are conceived as the main facilitator and driving force of most of the globalization processes.

Science and technology in itself is neutral- in whatever form and usage, it should always be for the betterment of humankind. Science is a "tool[25]" to an understanding of natural phenomena whereas technology is a "tool" to increase productivity and reduce cost of production in any types of industries (Falkenberg, 2004). Scientific and technological revolutions are among the most important things that happen to humanity. Ethical assessment in the incipient stages of a potential technological revolution faces several difficulties, including the unpredictability of their long-term impacts on the environment, the problematic role of human agency in bringing them about, and the fact that technological revolutions rewrite not only the material conditions of our existence but also reshape culture and even – perhaps – human nature besides posing known harms on the environment (Kidder, 2003).

It would appear that technological revolutions are among the most consequential things that happen to humanity, perhaps exceeded in their impact only by more gradual, non-revolutionary scientific and technological developments. Technological change is in large part responsible for the evolution of such basic parameters of the human condition as the size of the world population, life expectancy, education levels, material standards of living, the nature of work, communication, health care, war, and the effects of human activities on the natural environment. Other aspects of society and our individual lives are also influenced by technology in many direct and indirect ways, including governance, entertainment, human relationships, and our views on morality, cosmology, and human nature (Bruno, 1987). One does not have to embrace any strong form of scientific and technological determinism or be a historical materialist to acknowledge that scientific and technological capability through its complex interactions with individuals, institutions, cultures, and the environment – is a key determinant of the ground rules within which the game of human civilization is played out at any given point in time (Parker, 1998).

In the course of a normal lifetime nowadays, we can all expect to be involved in one or more scientific and technological revolution: if not as an inventor, founder, investor, regulator, or opinion leader, then at least as voting citizens, worker, and consumer. Given that scientific and technological revolutions have such profound consequences, one might think that they should be the focus of intense ethical deliberation and feature centrally in public policy analysis. If so much is at stake, it would seem to behove us to dedicate a corresponding amount of effort to ensuring that we make the right decisions; ones that do not harm our environmental sustainability (Esptein, 2010).

The human community today faces the most serious challenges ever to have confronted the planet in the areas of health, environment, and security. Science and technology are essential for responding to these challenges. More is needed, however, because science is not equipped to deal adequately with the, dimensions and the political issues that accompany the challenges. For an adequate response, there must be cooperative effort by scientists and statespersons, informed for moral leadership by the ethical wisdom that is available. The ethical communities can provide this moral direction, thereby fulfilling their traditional role, but it will require their coming to terms with the character of the scientific and technological base of contemporary culture (Cantwell and Iammarino, 2000).

Although the development of science and technology has a lot of advantages especially in the present context of knowledge-based technology intensive culture, the questions of moral values and ethics are very essential and central. For this reason, science and technology will require an increasing emphasis on the teaching of values, moral and ethics in schools and other institutions of learning (Park and Saggi, 1997).

The question of values and ethics should be of major concern at all levels of education. For example, the realization that the misplaced or misuse of military technology may result in human tragedy, advancement in

[25] Adopted from Bruno (1987), and later re-used by Buller and McEnvoy in 1999

genetic engineering (e.g., Human cloning or transfer of genes etc.) may conflict with moral values and ethics of the society, negative impact of ICT /internet such as pornography, security, plagiarism and piracy; mass destruction by nuclear, chemical and biological weapons, problems related to global warming or the greenhouse effect, intellectual property rights, and so on (DeGeorge, 1993).

In order to answer this thoughtful question, we need to first understand the need and relevance of an educational movement that is guided by the principle of humanity. From the past performance, new education movement has expanded the concept of humanism philosophy, which is based on ethical principles and values that seek to create individual responsibility.

The first and the most important principle of this educational movement is the doctrine of individual responsibility - each individual is responsible for everything he or she does. It is an ethical philosophy that elevates the individual to the global level, for example we are all responsible for preserving the environment, avoiding nuclear warfare, eliminating poverty, face the challenge of extremism, terrorism and intolerance[26].

In other words science and technological education philosophy should primarily concern itself with our humanity; with our worth as individuals and with the processes that will make us more human and more civilized through self- regulated moral philosophy.

Modern civilization

Globalization offers a new opportunity for knowledge dissemination, but this does not mean that all the nations and institutions will equally benefit from it. On the contrary, it seems that the institutions that have managed to benefit most from globalization are those that already are at the core of scientific and technological advance (Roco and Bainbridge, 2003).

Developing countries are not automatically excluded from the advantages. They can benefit from globalization of technology if they implement active policies designed to increase learning and improve access to knowledge and technology[27].

The specific form and extent of technology globalization for developing countries bears important consequences for their government in action, and implies an especially active attitude towards innovation policies. It will in fact be argued that the globalization of technology offers new opportunities for development, but that they are by no means available without a deliberate effort to absorb innovation through endogenous learning (Haiping, 2004).

Of course we have to realize that technological advancement implies spread of different cultures and international practices from westernized and fully developed countries to developing and less developed world. Developing economies then have to formulate key modalities on how they can embrace modern global technologies while at the same time preserving the indigenous values and cultural practices (Githui, 2012).

We realize that global environmental ethics can also be promoted by deciphering the strengths of civilizations of the past, with the view of formulating a common civilization for our societies and economies. Research has shown that civilizations like the Egyptian, Persian, Chinese, Greeks, Mongolian, Roman; Islamic, Turkish and British rose because the people were willing to organize their society and shape values and cultures which contributed to the greatness of their civilizations. By adhering to and practicing these values, the society became intelligent, efficient, wealthy, safe and strong (Singer, 1998). To attain a common civilization, we need to understand the role of values in life, culture and civilization in our environmental stability and sustainability. We have to determine and practice good values and discard the bad ones. Even though the values of a society are formed naturally, a society that wants to succeed must choose, plan and cultivate certain values, which are believed to be able to help it.

Citizens and Leaders from developing and less developed countries have to understand that globalization and technological advancement comes with different opportunities and challenges both on their lives and on the environment, and their main tasks as leaders will be to maximize on these opportunities and minimize on the challenges. Some of the threats could be westernization and environmental degradation, a concept which makes many developing economies to lose their original identities and embrace a western lifestyle and practices. Modern civilization is very dangerous and if not carefully monitored could make some countries to be modern slaves of developed economies.

Developing and less developed countries should deem it fit to embrace the Japanese concept of *Global-local* and the *African Communitarian ethics* in their quest for humane living and sustainability. The Japanese concept of “Global-local” is a popular phrase of "Think globally, act locally". This phrase urges people to consider the

[26] Githui (2012) in his book *Fundamentals Of Business Ethics And Values: A focus on Individual, Business Conduct and Environmental Concern in a globalized village, presents strong sentiments on what scientists and technologists should embrace in their developments- an ethical inclination.*

[27] Adopted from Roco, M., C., and W., S., Bainbridge., (2003), *Converging technologies for improving human performance: nanotechnology, biotechnology, information technology and cognitive science*.

health of the entire planet and to take action in their own environment, communities and cities. The local perspective refers to a way of life and cultural practices in a country or region, and which contain some observed values and norms (Haiping, 2004).

Long before governments began enforcing environmental laws, individuals were coming together to protect habitats and the organisms that live within them. These efforts are referred to as grassroots efforts, and should be steered by leaders who seek the common good for their people. Noting from *African Communitarian ethics*, societies and economies of the world thus ought to protect the environment, as it is the requisite to human life and sustainability[28].

We have to note that less developed countries are endowed with natural resources, and hold a significant value to global business and economic growth. This is particularly noted in the maintenance of the global economy depends on key resources some of which come from third world economies. Because of increasing diversity in the use of natural resources, many world economies are currently feeling the pressure to ensure that these resources are used wisely and effectively in an ethical manner (Mullaly, 1976). Thus there is need that developing and less developed countries devise their own distinct policies and should avoid at all cost, being influenced by western countries. Developed economies should only try to help third world economies to stabilize and achieve economic stability but should not impose their policies on these third world countries. Achieving modern civilization in third world countries should be guided by indigenous cultural values; equal resource sharing and off-course effective use of ethical principles would be indispensable.

Globalizations of technology and innovation require different learning strategies, and therefore, if a country has a choice, it might have good reasons to prefer one form to another. In particular, we have argued that the importation of foreign technology and innovations, either embodied or disembodied, has a negligible learning impact *per se*. It should be accompanied by local policies to promote learning, human capital and technological and innovation capabilities that embrace an environmental peace (Naditz, 2008). This learning has to be built on shared ethical and moral values in every developing and less developed country. Public policies should therefore try to induce foreign firms to move from exporting their products to producing locally, and transferring a technological and innovative component. Furthermore, it is often more advantageous for a developing country to set up inter-firm strategic technology and innovation agreements than simply hosting production facilities of foreign firms, though this will depend on resource capability (Neto, 2003).

Developing and less developed economies should try to ‘‘upgrade’’ Foreign Direct Investment (FDI) to strategic technological partnering. Collaborations among public and private organizations can provide substantial benefits to developing countries if done in an ethical manner. Policies at both the national and intergovernmental levels should therefore consider these collaborations as a preferential channel to transfer and acquire technological competencies which are built on observed and shared ethical and moral values, which create a self sustaining environment for a humane life (Bowie, 1999).

Therefore in summary, the way forward regarding the civilization and technological advancement as well as innovations in developing and less developed countries should take the form of thoughtful learning coupled with critical and self analysis to lead to self awareness, where countries learn and embrace only those qualities and practices of modernity and technological innovations which can improve their way of life both socially, while simultaneously creating sustainable environment and so, they have to economize. Modern technologies and innovations should embrace principles which do not debase, erode, and destroy their indeginous culture, ethical values, observed morals and norms (Haiping, 2004).

Engineering and innovation

Engineering is the essential building block and driver of technological innovation, sustainable social and economic development, and engineers need to emphasise this to their policy makers and the wider public. However, in order to ensure that engineering products are sustainable in the long run, there is a need to rethink engineering approaches and processes with a strong inclination to environmental ethics. An emphasis on ethical innovation and applications also helps attract young people to engineering (Belis and Impe, 2001).

For engineering and innovations, the incalculable value of human life demands nothing less than the highest moral considerations from those who might risk it otherwise (Bowen et al, 2007). Since an engineering profession has a direct effect on the lives of people in a society, these professionals owe special moral and ethical responsibility to the society, and overaly on the environment. However, it has been suggested that professionals in general tend to believe that their obligations to their clients far outweigh their responsibility to others, such as the public and the environment (Fan, C.N.L., Christabel, M., H., & Vincent, N, g., (2001). Because of their

[28] Inferred from Ezekwonna, F., C., (2005). In his article “*African Communitarian Ethic: The Basis for the Moral Conscience and Autonomy of the Individual”*

knowledge and importance in society, engineers should have a higher calling to answer ethical questions (Githui, 2011).

For us to have a self sustaining environment to support our societies and economies that is affected by engineering and innovation we need to assess our capacities. The capacity for innovation is the ability to "encourage decision-making across disciplines, understand the interdependence between environmental, economic and social systems, be open to new ideas, appreciate role of human ingenuity, and challenge the status quo" (Jamieson, 1992). This definition shows the interconnection and dependence of innovation with both systems thinking and teamwork. The close relationship and interdependence of vital sustainability leadership skills and capacities is especially appropriate given that the challenges are all interconnected. Innovation is so fundamentally important to future generational sustainability that it has been claimed that, in moving towards sustainable business, "Innovation will be in the lead, with administration playing its supporting role of serving the needs of people and the planet" (Davis, 1994).

Seeking to live more humanely and sustainably and focusing on addressing the environment's common good necessitates the development of new capacities and creative ideas, and also the ability to connect a "unified idea with a daring approach to translating it into something that will serve the goals of societies and economies" (Banuri & Najam, 2002). The success of engineering projects is increasingly less dependent upon their limits and guidelines, but more often results from the imagination, innovation, originality and dedication of the individuals involved in their realization (Banuri et al., 2002).

In that regard, societies and economies believe that people working in this field will often need to "obtain training beyond the traditional disciplines and skills acquired during their formal education,"and that effective leadership depends on "fresh and innovative thinking that uses existing tools and ideas as a springboard for larger social change. Young engineers and innovators are often more responsive to outside input, more imaginative and creative and they are often less constrained by the previous ways of doing things. It is necessary for young engineers and innovators to become actively engaged in projects and activities. It is important to recognize and utilize new ideas and solutions, and these solutions need to be implemented on multiple levels, local, national and global in order to affect all parts of the system. These ideas work to address common issues and they are also vital in working toward creating stable and sustainable societies and economies that are environmentally conscious. It is evident that, in many cases, that innovation and "newness incorporate some element of a building or rejuvenating a community, a network, an alliance, or a social group" (Belis et al., 2001).

Engineering education needs to emphasise the relevance of ethical engineering to the global issues and problems we face - the problem-solving profession needs to revitalise itself through such approaches as problem-based learning. For us to live more humanely in a sustainable way, we need to address these issues in the context of strategic vision, ethics and social responsibility, all which have an inclination on the environment (Vee, C. & Skitmore, C., (2003). At the global level, issues facing the world focus on the need to reduce poverty, promote sustainable social and economic development and address the other Millennium Development Goals, provide solutions for climate change mitigation and adaptation and facilitate the move into a low-carbon future. These issues also include challenges and opportunities presented by globalisation, the digital and broader technological and knowledge divides.

At the local level, many societies and economies are concerned that young people are turning away from science, engineering and technical education, and the effect a declining interest and enrolment in engineering will have on capacity and development around the world, which is compounded for poorer countries by the brain-drain of engineers. These issues and challenges are being further compounded by the recent financial and economic crisis, at a time when we need increased investment in engineering capacity building, research and development (R&D) and infrastructure. The engineering and scientific communities need to work more closely together and address these issues. It is also important to note that the issues and challenges facing engineering change over space and time, due particularly to new needs and new knowledge, and engineering needs to change to face these changing issues and challenges (Bowen et al., 2007).

Thus, an engineer recognizes that the greatest merit is the work, so exercise their profession committed to serving society, attending to the welfare and progress of the majority. By transforming nature for the benefit of mankind, the engineers and innovators must increase their awareness of the world is the abode of man and his interest in the universe is a guarantee of overcoming their spirit and knowledge of reality to make it fairer and happier (Fan *et al*., 2001). The engineer should reject projects and innovations that are intended to harm the general interest, in this way avoid situations involving hazards or constitute a threat to the environment, life, health and other rights of human beings. It is an inescapable duty of the engineer to hold the prestige of the profession and ensure its proper discharge and maintain a professional demeanour rooted in the ability, honesty, fortitude, temperance, magnanimity, modesty, honesty and justice, with the consciousness of individual well-being subordinate to the good social (Vee et al, 2003).

The main challenges of engineering and innovation are to promote capacity building and access to technology to address these issues through: promoting awareness of engineering and innovation to the public and young people, the development of technologies, including advanced technologies, the application and innovation of technologies, promoting inclusion, especially of women and young engineers for posterity, global cooperation to reduce knowledge divisions. These should be geared towards ensuring that the societies, economies and environment that we live in are not disturbed by the new engineering and innovation products.

Responsible and ethical leadership for humane and sustainable societies and environment

The unifying power of shared morality and ethics is readily evident in all societies and economies. As a matter of fact, community at any level depends upon the existence of shared values (Rockefeller, 2004). Ethics and moral values are communal rules that societies and economies create in order to "prevent individuals from pursuing self-interest at the expense of others" (Dalla 1998). Ethics and moral values greatly influence the development of our relationships and mindsets, but many do not realize that these beliefs are inextricably linked to sustainable development. The interaction of people with their environment and their political and economic affairs are strongly influenced by their diverse moral values, cultural heritage and religious traditions (Engel, 1990) Therefore, addressing all of these interconnected issues requires a shift in mindset, and this transition requires the inclusion of a new set of ethics. Sustainability leaders realize the integral role played by ethics in motivating people to care for the world around them (Bennis & Goldsmith, 2003). For this reason, the crucial importance of moral leadership in sustainability cannot be understated.

Leaders are required to make ethical decisions because of the responsibility that comes with their power. They are responsible for making decisions that can have sweeping consequences that can go further than expected. The ability to affect the lives of many people requires an ethical sense of responsibility and accountability when making decisions. Leaders have a greater responsibility because they are empowered by the people to make decisions that will affect them all. Due to this power and their accountability for its use, leaders need an ethical basis that will inform their actions.

Leaders need to utilize their positions and provide a vision or a mission that is an empowering synthesis of shared beliefs that will spread hope and inspiration as we work towards sustainability (Bennis et al, 2003). Ethics and morals, however, are significant factors in leadership only if the leaders are viewed as honest and faithful enough to behave consistent with their stated values. In order to inspire trust and have integrity it is crucial that sustainability leaders clearly "practice what they preach." The actions of leaders must be strongly based on ethics, especially now when"the current disarray in corporations, church, hierarchies, governments, and nonprofit agencies have been caused by revelations of fraud, corruption, theft, and betrayal" (Bennis et al., 2003).

At the present time, the advanced nature of the media and communications facilitates the constant exposure of leaders surrounded by scandals and controversy. The ubiquitous images and news about leaders falling short of their perceived integrity or overstepping their moral bounds has caused many people to lose faith in them, and these betrayals of trust are directly linked to a disbelief in the possibility of change. Disillusionment, mistrust and cynicism are growing at a time when the challenges to our shared home, through climate change and other man-made difficulties, are reaching a breaking point. Consequently, this has greatly affected the sustainability of the environment. It is necessary for the global society to have leaders whom they can believe in, to have leaders who espouse the same beliefs and ethics. As Fullan reminds us, the pursuit of moral purpose must be relentless, because it can easily slip away (Fullan, 2005).

In environmentally conscious societies and economies, sustainable leaders can both validate their credibility and good reputations by authentically exemplifying their personal adherence to a code of ethics that recognizes the fundamental need for sustainability and the importance of working for the common good. Ethical actions require us to look outside of our individual needs and goals. If we are to prosper in the long-term it is necessary to recognize the common aspects and responsibility that we share as members of humanity. We need leaders that express their sincerity and dedication to a new code of ethics by their actions. They need to work toward the interconnected goals of improving the common good and promoting environmental sustainability for stable societies and economies. Adopting this new set of ethics is arguably the most salient features in their ability to lead us because "the sustainability of change depends on having the people with the problem internalize the change itself" (Heifetz & Linsky, 2002).

The current challenges that face the entire world are immense and have arisen, to a large degree, because powerful societies and communities have lost their care and sense of responsibility for the environment and others. Irresponsibility, excessive self-interest and a lack of accountability have risen to the point where "modern cultural values have destroyed sustainable patterns of land and resource use" (Engle, 1990). This conspicuous loss of care and responsibility is, at a basic level, an ethical crisis, and subsequently indicates that sustainability is an ethical issue. This issue is not confined by political or ideological boundaries, by wealth or poverty or by

any other designation or means of classification which have perpetually partitioned humanity. The endless division, compartmentalization and segmentation of humanity is one of the greatest impediments to addressing the collective problems and challenges which are becoming increasingly pressing as time goes on. It is true that numerous individuals, organization and nations have tried to address these problems, but how can their efforts combat the consequences and end result of global challenges which have foundations based on practices, lifestyles and mindsets which transcend national, cultural, ethical and ideological boundaries?

It is for this reason that the essential changes "needed in our values, institutions, and ways of living" need to be used to forge collaboration, because our shared challenges and problems "must be addressed by a constituency equally broad, with common values and norms, derived from recognized common interest" (Benson, 2000). Indeed, the highly integrated and interconnected challenges we all face oblige us to forgo immediate gratification and self-interest in order to work toward long-term sustainability and the common good. Immoderate and negligent practices have brought about and exacerbated these challenges, and therefore a new set of assumptions and beliefs will be needed to guide development toward sustainability (Davis, 1994). The necessity of bringing humanity together to acknowledge our shared responsibility and focus upon transitioning to sustainable ways of life is of paramount importance. The rise of globalization and the interconnection between the peoples and systems of the world mean that, in order to address the problems facing us, a world community made up of a diversity of cultures and religions is both possible and necessary (Tylor, 1998).

Furthermore, Dalla (1998) contents that in these dark days of environmental devastation and growing exclusion, a global ethic gives expression to the growing and shared fear and provides an embracive and equitable framework for responding to it. We need a common framework of fundamental shared moral values, principles and ethics. This new set of ethics should be utilized in helping define a *new social paradigm* which will promote sustainable development in each culture and each region of the world (Bennis et al., 2003).

We, as members of humanity, need to accept collective responsibility for decisions that have been made by us, or for us. By being accountable for these decisions we affirm the need to significantly alter our social paradigm. We can guide and direct the process of surmounting our challenges "by creating an ethical vision of where we want the process to go and committing ourselves to it in a spirit of solidarity and hope (Rockefeller, 2004). This is what a humane society and economy ought to inculcate into its own systems of sustenance.

The overall goal of the ethical leadership is to stimulate inner reflection of our own beliefs, values and priorities; it "challenges us to examine our values and choose a better way". Through this process, however, it is also extremely important to see how our personal beliefs and values coincide with those of others, and it is crucial that we use the opportunity to strengthen our own views while engaging in meaningful dialogue with others (Githui, 2012). This dialogue and exchange of views should enrich our efforts in working toward our common good. It is crucial that the ethical leadership will become more than a set of eloquent words and agreeable concepts. It must ultimately become personal values that translate into joint actions" and the principles must "become activated to symbolize real values, real ideals, real commitment, real action, and real change" (d'Evie & Glass 2000).

When using a set of values and ethics to change society, there exists the "need to challenge injustice and unethical practices by engaging them, not by distancing from them or being detached" (Preston, 2001). The fundamentals of ethical leadership are built in a manner which directly addresses the interconnected issues and practices that are involved with transitioning to sustainability. It is a framework which engages the persistent problems found in the perspectives and ethics of today's modern societies. The main objective of this leadership is to fulfil the crucial necessity of a "shared vision of basic values to provide an ethical foundation for the emerging world community".

An encompassing concept of the ethical leadership is the recognition of the common community of humanity and the world which we inhabit. This notion is central to the change towards sustainable lifestyles, because it means that "we have ethical obligations because our lives take place in a web of interdependent relationships (Preston, 2001). These obligations ask us to think about the common good and "by focusing on the "common good," moral synergies can be elicited, which can in turn lead to harmonious collective action (Neto, 2003). The shift toward sustainable practices needs to be motivated by our ethical and moral systems. These systems are some of the greatest factors in inspiring action and it is time that we make "a comprehensive ethical evaluation" when making decisions that will affect us all (Preston, 2001).

The increasing globalization of instantaneous communication technology in the world have allowed the influence of large national, transnational and international corporations, organizations and civil society into the processes of global governance (Bowie, 1999).

This has many negative effects, such as facilitating the exploitation of poorer countries and regions, but it is also an opportunity for change. There are many organizations and civil society movements which are supporting the necessary shift toward sustainability. The initiation and continuation of most of these activities and ethical

decisions will be the result of leaders who will be inspired and motivated by the act of rethinking leadership ethically. By using the ethical leadership as a framework and a basis for their decisions they will have helped make substantial progress towards our common goal of sustainability.

Applying Ethical theories to a humane living for sustainability

Although the concept of sustainability is widely accepted across the world, its underlying principles seem to have bypassed environmental and societal concerns, prompting the need for the formulation of an environmental ethic for humane and sustainable living for stable and self supportive societies and economies (Neto, 2003). In Western society, ethical theories fall into two main categories namely; teleological and deontological theories.. Teleological theories (derived from the Greek word 'telos, meaning ends), such as Utilitarianism, evaluate acts according to their outcomes, were heavily debated by Jeremy Bentham[29] and John Stuart Mill[30] in the 19th century.

More simply, a right action is one that results in generally good consequences, whereas a wrong action has overall bad consequences (Vesilind and Gunn, 1998). As Hayward (1995) states ecology has now become a core value in western society. As well as the necessity of societies and economies recognising their moral obligations, their actions must be directed at desirable ends, that is, environmental protection.

The second category which is Deontology or Duty Theory first espoused by Immanuel Kant in the 18th century, is a non consequential. This theory denies that the rightness or wrongness of acts is reducible to the value of their outcomes. Certain actions are right or wrong regardless of the consequences. According to Kant, a person cannot have good will unless he shows concern for the welfare of non-rational beings and values the natural world for its own sake. Kant also thinks that we have moral duties regarding the natural world and must not destroy it[31].

The Judeo-Christian, Ten Commandments, is representative of a deontological system (Vesilind et al.,, 1998). It can be argued that in a modern capitalist, society's duty has contracted to obligations to oneself and one's immediate family. Individuals must recognise they have a broad series of duties or moral obligations which should direct their behaviour beyond their immediate loyalties. We have to identify a series of duties or moral obligations which societies and economies have to take into consideration to protect the present and future generations as well as obligations to the environment (Attfield, 1983).

Both teleological and deontological ethical theories have been criticised by some virtue ethicists as being too narrow. In recent years there has been renewed interest in virtue theory. This position holds that ethics are not about good outcomes or performance of duties rather of 'becoming a particular kind of person' (Vesilind et al., 1998). Virtue theories analyse the excellences or virtues required to act or make decisions in a responsible way in society. Theories of virtue have their origins in Ancient Greek culture. To the ancient Greeks the four cardinal virtues were courage, temperance, wisdom and justice, with the Christian philosopher Thomas Aquinas adding the theological virtues of faith, hope and charity in the 13th century[32]. In common parlance, virtues may be described simply as 'integrity' or personal 'character' (Pence 1993). While the virtue of courage was often applied to warriors in Ancient Greece, courage has a new meaning today. Courage involves acting to further an ethical ideal' (Pence 1993) and is a desirable virtue in a world where new modes of behaviour are required. Virtue Theory provides direction on what excellences are necessary to be a 'green society or economy'.

No one ethical theory can serve as a basis of gardening ethic. As the philosopher Peter Singer points out: 'We must reinstate the idea of living an ethical life as a realistic and viable alternative to the present dominance of materialistic self-interest' (Singer, 1990). We must cast self interest aside and promote an ethic that combines the notions of duty, environmental ends and virtue[33].

Discussion

The literature review has manifested the question that the environmental movement and ethicists poses to the world is superficially simple. Howeer, its implications are vast. But there is fundamental concern which must be addressed namely; how do we devise strategies for society that will allow a peaceful, equitable, fulfilled human future: a humane future for a diverse earth? Unfortunately, sustainability is not currently the burning issue for most world leaders, whether politicians or business executives. Their immediate concern is to keep the world afloat or insuspence so long as their political position and employment are not threatened. Issues of justice,

[29] Bentham, J., (1948). *An Introduction to the Principles of Morals and of Legislation*
[30] Adopted from Mill, John Stuart. (1957) from his treatise of *Utilitarianism*
[31] Adopted from Kant, I., (1785), *Groundwork of the Metaphysic of Morals*
[32] Aquinas, T., (1952), *Summa Theological*, Chicago: Encyclopedia Britannica.
[33] IUCN, UNEP and WWF. 1991. *Caring for the Earth: A Strategy for Sustainable Living*. Gland, Switzerland, IUCN, UNEP, WWF

equity or environmental degradation, or stories about unstoppable global ecological change, are back cloth to the everyday business of firing the boilers of the world economy (Greg, 2010; Githui, 2012).

Further the scholars in the literature review have underscore that technologies and new forms of social interaction can contribute to a transition to sustainability. But they are also products of what needs to be transformed. Even if their potential is tremendous, they are an inescapable part of the human transformations of the Anthropocene, not an alternative to it. A transition to sustainability is vital and profoundly challenging. Change is needed in almost every aspect of the economy, in many aspects of human culture and society, and in the terms of engagement between humanity and the rest of the biosphere (Naditz, 2008). That means continous research and debate on these issues are encouraged in order to generate more solutions to the problems arising from energy, climatic change and environmental degradation. In this regard three dimensions of change stand out: first, the challenge of decarbonizing the world economy. Second, the challenge of committing to justice and equity; and third, the challenge of conservation, of standing up for life and the biosphere (Elam and Bertilson, 2002; Naguib, 2009).

Some of the scholars cited in the literature review have directly or indirectly noted that the key problem in addressing a sustainability agenda with a humane living perspective is the way that structures of inequality and power limit space for dialogue and alternative solutions. Issues of justice and human rights to environmental stability are central to any effective transition to global sustainability. This means that integrating equity into debate demands a focus on justice and dialogue with civil society (Heifetz and Linksy, 2002). In order to bring a transition to sustainability with a humane living perspective, both environmental stakeholders and conservation movements must make a serious commitment to justice. Consequently, the current concern for sustainable development needs to be replaced with a new and broader concern for 'environmental sustainability and justice'. This must embrace both the familiar concerns for ethical drivers from environmental ethics (Passmore, 1974).

It can be concluded in this discussion that the extent and rapidity of change now required to tip the world back towards sustainability is greater than can be achieved by existing institutions at global and national levels. Governments, corporations and international organizations have much to contribute in major ways. However, it is only the behaviour of billions of people as citizens and consumers that can give our institutions the mandate and means to lead the changes needed in attaining sustainable and humane living (Mullally, 1976).

Recommendations

Different societies and economies are diverse in terms of cultural, ethical orientation, business experience, geographical location and education. However, they share important environmental characteristics, which suggest that guiding sustainability through an inclusive humane living requires a distinctive type of ethical guidance. Therefore from the above theoretical literature and discussion and theoretical evaluations, the following four (4) recommendations have been formulated as the fundamental drivers to humane living and environmental sustainability.

(i) Engineering and innovation should protect the environment

First, the engineers and innovators should reject projects and innovations that are intended to harm the general interest, in this way avoid situations involving hazards or constitute a threat to the environment, life, health and other rights of human beings. It is an inescapable duty of the engineer to hold the prestige of the profession and ensure its proper discharge; also maintain a professional demeanour rooted in the ability, honesty, fortitude, temperance, magnanimity, modesty, honesty and justice, with the consciousness of individual well-being subordinate to the good social humane living. Of course these processes should be carried out using green energies and processes.

(ii) Collaborations and Partnerships:

Second, developing and less developed economies such as those in Africa and Asia, should therefore also try to ''upgrade foreign direct investments to strategic technological partnering, with an environmental focus. It should be noted that collaborations among public and private organizations can provide substantial benefits to developed, developing countries and less developed economies if done in an ethical manner. Policies at both the national and intergovernmental levels should therefore consider these collaborations as a preferential channel to transfer and acquire technological and environmental competencies which are built on observed and shared ethical and moral values, which create a self sustaining environment for a humane life.

(iii) Fostering individual and societal responsibility with regards to our global scientific and technological developments:

Third, each individual and nation should be responsible for everything he, she or it does. It is an ethical philosophy that elevates the individual and nation to the global level. In this regard, we are all responsible

for preserving the environment, avoiding nuclear warfare, eliminating poverty, facing the challenge of extremism, terrorism and intolerance[34]. In other words, science and technological education philosophy should primarily concern itself with our humanity; with our worth as individuals and with the processes that will make us more human and more civilized through self- regulated moral philosophy.

(iv) Rethinking societal and economic leadership in an ethical inclination and environmental orientation:

Finally, rethinking our mode of leadership alone, however, is not enough in instigating meaningful changes toward sustainability; it needs to be supported by strong leaders who have a fundamental belief and ethical basis in sustainable living in a human way. Governments and companies should strive to work effectively by inspiring people to technologise, innovate systemically, encourage scientific improvements and developments and improvise solutions to the common environmental problems that face our societies and economies. This should be supported by funding and producing clean and green energies; such as researches in universities, tertially colleges and individual innovators.

Conclusion

Elevating and emphasizing the common good and promoting sustainable lifestyles will be facilitated by the effort of dedicated leaders. Global societies and economies will need to be able to do holistic and contextual analyses of situations. They have also to be proficient in systematic thinking, engage in and initiate teamwork and have the capacity for environmental re-evaluation and improvement. However, sustainable societies and economies are required to embody and exemplify a lifestyle founded on a set of ethics that focuses on the importance of shared responsibility and proactive work toward the common good by promoting environmental sustainability. The theoretical research have reviewd that the tenets of environmental ethics should be used as an instrument that can help our societies and economies facilitate and aid their progress to sustainable and responsible ways of humane and sustainable living. If this is done future generations will also be able to prosper. The need for accountability in our choices is apparent, and the fundamentals of ethics and morality will help the modern societies,business community, scientists, technologists and political leaders to achieve the goal of providing “a universal code of conduct to guide people and nations toward environmental sustainability” (Brown, 2000). Rethinking the mode of living alone, however, is not enough in instigating meaningful changes toward sustainability; it needs to be supported by strong leaders who have a fundamental belief and ethical basis in sustainable living. They should be able to work effectively because they can inspire people, technologise, innovate systemically, encourage scientific improvements and developments and improvise solutions to the common environmental problems that face our societies and economies. With the new world outlook in mind this has to be executed out in an ethical and moral espouses. Thus, Individuals, societies and economies must recognise they have a duty of care to current and future generations as well as the environment. Societies and economies need the courage to reject out moded patterns of living inappropriate to our climate, and develop processes and methods which use resources in a humane and sustainable way and celebrate the uniqueness of our local environment because there is only one earth for the entire human race.

About the Author

The author is a Chaplain and a Senior Lecturer at Dedan Kimathi University of Technology in Nyeri, Kenya. He teaches Business Ethics and Philosophy to both undergraduate and graduate students in the School of Business. Rev. Fr. Dr. Mathenge is a long time member and the only African representative to the editorial Board of University of Leuven Theological & Pastoral Monograph. He obtained his PhD in Religious Studies from the University of Leuven Belgium, with a specilisation in personalitic ethics, human freedom and Divine Grace. He has published a number of research papers with IISTE Journals on topics of ethical dimension in Business issues, education, drinking culture among the youths, healthcare, money mobile transfer, human resource, finance and accounting, Supply chain management and procurement, and Engineering and construction in the Kenyan Context and. He has also published other articles such as; Value system of commercial banking , Rethinking, Redefining and Reinventing Leadership in the Modern Society, Responsible Tourism and Hotel Management, Ethical Issues in Advertising and Marketing, Corporate governance and organizational management in Kenyan State owned enterprises and Ethical Dimension in Gender Management in Kenya featured in many other International peer review journals. He has also written a book entitled; *Fundamentals of Business Ethics and Values: A focus on Individual, Business Conduct and Environmental Concern in a globalized village* (through

[34] Githui (2012) in his book *Fundamentals Of Business Ethics And Values: A focus on Individual, Business Conduct and Environmental Concern in a globalized village, presents strong sentiments on what scientists and technologists should embrace in their developments- an ethical inclination*

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Fr. Dr. Mathenge has given key note speeches on ethical and moral values relating to family, business transaction, individual decision making and management as well as theological and philosophical dimensions of human life; to a number of conferences in different countries among them being Canada, Israel, Germany, Italy, Spain, USA, Switzerland, Austria, Philippines and Uganda. His research interests lie in ethical dimensions in leadership, corporate governance, business, global trade, scientific innovations and Technology, security management as well Theology and African Philosophy.

Rev. Fr. Dr. Mathenge is a priest of the Catholic Archdiocese of Nyeri, Kenya.

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