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Review

Ecocentric and anthropocentric policies and crises in climate/environment, finance and economy: Implications of the emerging green policy of the Obama administration for Africa's sustainable development

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Advanced economies responded to recent global financial meltdown and economic recession by implementing "green" economic stimulus packages concentrating on environmentally-friendly and sustainable technologies. We examined this emerging paradigm against Sub-Saharan Africa's under-development (prolonged poverty, economic stagnation/decline, weak structures, processes, institutions and attitudes required for accelerating economic growth; practice of electoralism: power derivation through elections without democratic ingredients), exclusion of stakeholders including civil society from policy, thereby depriving society innovations and resources contributed by civil society elsewhere to socio-economic development. We used desk research and descriptive methods to analyze secondary data based on increasing civil society involvement in development processes under emerging paradigm of partnership, governance, climate change, global financial crisis. We showed that past actions: unbridled pursuit of anthropocentric policy that ignored ecocentric measures led to crises (environmental-climate degradation, and recently global financial meltdown and economic recession), thereby worsening existing challenges. We recommend that African nations adopt the emerging green policy thereby increasing their chances of benefiting from the assistance of Governments. The promotion of green development policy in Africa is of urgent need and imperative.

Key words: "Green" development policy, Africa, anthropocentrism, ecocentrism, climate change, economic growth.

INTRODUCTION

The US Presidential Campaign that started in 2006 and ended with a landslide victory by Barack H. Obama featured a strong commitment of the victorious President Obama on "change". A few days after inauguration, it was reported that President Obama has taken various steps towards realizing the change he promised. The previous US Government denial of climate change science was promptly reversed by President Obama. In his speeches for presidential campaign and acceptance of nomination as US Democratic Party's presidential candidate, President Obama has repeatedly stated his belief that green development (including renewable and efficient energy technologies and other environmentally friendly systems) promise and deserve to be employed as a US Government strategy to surmount (and recover from) the recent global financial meltdown and economic recession (Obama, 2009). Specifically, green development strategy is being considered as a means of sustaining current jobs and creating new jobs with several advanced nations of the North entrapped in the global financial crisis, Sub-Saharan Africa is likely to face a greater burden of the rather increasing wave of global challenges. Unlike most parts of the world including North America, Western Europe, Japan or the North, and South East Asia, Sub-Saharan Africa has not gained from centuries of the glo-

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balization process. Industrial revolution, liberalization of trade, capital markets, among other mechanisms have tended to work in ways that Sub- Saharan Africa remains under socio-economic stagnation or decline (Khor, 2001). This might be the case with the current degradation of the environment. Prior to the recent global financial melt-down, sub- Saharan Africa had become nearly synony-mous with poverty, conflict and wars, among other indicators of underdevelopment or the perpetuation of the replication of poverty and economic stagnation and/or decline. Development aid/assistance promised by advanced (economically and industrially) countries were, by and large, not fulfilled. At the global level, the pursuit of unbridled economic growth development strategy and downplaying of ecological (non-human) nature protection despite mounting scientific evidence that global warming had progressed to a highpoint that climate change was becoming abrupt, dangerously compelled the former UN scribe; Kofi Annan to state that the world lacked leadership in the environmental (climate) sector. The disproportionately large percentage of poor people in Sub-Saharan Africa compared to other parts of the world is well documented (UNDP, UNEP, World Bank and WRI, 2005) is elaborated under the description of the study area below.

Disasters, hazards and risks have been most frequent in the region. These range from huge losses of lives and property due to abysmally low levels of services (safe water and sanitation, healthcare, education and so forth (UNDP, UNEP, World Bank and WRI, 2005). Terrorists struck Nairobi, (Kenya) and elsewhere in Sub-Saharan Africa before the September 11, 2001 attack on the World Trade Centre and the Pentagon in USA. There have been increasing reports that the recent global financial meltdown has taken a toll on the economies of the region: most recently the financial and money markets of Nigeria have been very badly hit by unprecedented recession (Newsweek, 2009).

The predictions of impacts of climate change and global warming have put Sub-Saharan Africa on top of the list of the most vulnerable regions. The huge migration of people predicted to be forthcoming (Brown, 2008; Stern, 2006) would add to past, present or ongoing migrations due to frequent wars and strife. Despite a series of mounting scientific evidence that global climate change was inflicting irreversible transformation on the earth's environmental and climate subsystems, govern-ments especially in the industrialized and economically advanced nations almost obstinately continued to pursue economic growth-centered development strategy while ignoring the deleterious consequences of that attitude on the global ecosystem especially the life bearing biosphere. The market (capitalist) system's promotion of laisses faire or unfettered freedom to pursue profit and wealth led to an increase in temperature of the global environmental system of 0.6 $\pm$ 0.2°C in the twentieth century. This has been attributed to the continued and increasing emission of greenhouse gases (GHG) which is in turn triggered by increasing release of carbon dioxide (CO_2) gas arising from the burning of fossil fuel and land-use change (WRI, 2006; IPCC, 2007, 2001; Byrne et al., 2008: 27). Research derived predictions of climate change impacts have stated various deleterious disasters for different parts of the world. Sub-Saharan African countries have been predicted to be the one of the parts of the world that will be most vulnerable to climate change impacts or disastrous events (Stern, 2006; Myers, 2006) . It is widely accepted that climate change is the greatest challenge facing mankind currently (Ki-Moon, 2007).

BACKGROUND TO THE PROBLEM

The significance of think-tanks and civil society to policy making: policy making by governments of advanced nations (especially the USA and UK) since the 1960s and later emulated in the UK have been facilitated by think-tanks – describing policy research institutions of two types as follows:

i) Non-Government, non-partisan organizations that facilitate strategic coordination of government policies or enhance the relative prioritization of policies, creates new policy alternatives and/or clarifies policy options as well as their implications. For example, the Policy Studies In-stitute and the Central Policy Review Staff (CPRS) while the Labour Government undertook profuse and profound constitutional reform of 1997 under a think-tank: established in 1995: the Constitution Unit;
ii) Partisan organizations (frequently affiliated to and funded by political parties) providing policy advice to selected clients. In the US where this kind (like the first) originated, the Urban Institute and the Brookings Institute have served the Democrats while the Heritage Foundation and the American Enterprise Institute have served the Republicans. Some of the think-tanks that served the UK are: the Centre for Policy Studies (for the Conservatives) and the Institute for Public Policy Re-search (for the Labour Party) (Bradbury, 2003 in McLean and McMillan, 2003). The inability of countries of the South (that is developing nations including Sub-Saharan Africa) to benefit from globalization has been attributed to the ignorance of these nations of the contributions that think-tanks make to the enhancement of economic growth policies (Khor, 2001).

Therefore, it has been suggested that South-South poli-cy coordination among developing countries is required as a way of reversing the way the gains of globalization have been engineered and reaped by countries of the North. To achieve this goal, South-South cooperation has been proposed to be informed or supported policy-wise by centres engaged in research and coordination of economic growth and development including such organi-

zations that are independent and privately run. Their functions have been proposed to include: supporting countries of the South to prepare for international negotiations, and organize and undertake strategic thinking and long term planning of economic growth and development (Khor, 2001).

What Is Sub-Saharan Africa doing to respond to the "change" being implemented by president Barrack Obama and peers?

The fact that globalization process, which set off about two to three centuries ago and is ongoing, has integrated the economies of most sovereign nations and regions was recently confirmed by the rapid diffusion of the financial meltdown from the USA to Europe, Asia and Africa. While President Obama is rapidly responding to the economic crisis or recession by employing green development strategy including sustainable energy, the corresponding change in development and other policies by Sub-Saharan Africa collectively and individually is yet to be well known and or publicized.

STUDY AREA: AFRICA AND SUB-SAHARAN AFRICA

Geographical, social and economic setting

The entire African continent comprising about 55 countries is usually located at the centre of conventional world maps. The total population estimates and projections by reliable international organizations for Sub-Saharan Africa (comprising 50 nations in 2005) was 732,512,000 people (that is 11.4% of the world's population) and expected to be 1,181,279,000 people by 2030 (that is 14.5% of the world population) . Sub-Saharan Africa is widely regarded as the region of the world presenting the poorest social, economic and environmental conditions. The region's gross domestic product (GDP) in 2002 was US$393,001 million (that is only 1.1% of the world's total (US$35,065,010 million) in 2002. The region's GDP per capita PPP was $1,779 compared to the world average of $7,880 in 2002. The poverty level in the region was comparatively serious when the GDP per capita of other regions is considered as follows: $35,138 for North America; $21,348 for Oceania; $18,097 for Europe; $5,934 for Middle East and North Africa; $4,684 for Asia (excluding Middle East); $7,347 for Central America and Caribbean; and $7,339 for South America. The proportion of the population living on less than $1/day and $2/day (based on surveys in 1987 – 2001) were 46.5 and 78.0% respectively compared to 2.4 and 29.9% in the Middle East and North Africa (UNDP, UNEP, World Bank & WRI, 2005). Food insecurity was high and prevalent in the region: labour (that is workers) per hectare of land in the region (1.02) compared to other regions (0.87 for the world); received the largest quantity of cereals as food aid (3,145,000 metric tonnes) compared to other regions in 2002.

Unemployment rates are likely to be the highest in the world in the region due to a combination of reasons including the low absorptive capacities of national economies, poor governance, prevalent injustice, poor employment information and management (including reporting) systems. Although most Sub-Saharan African nations did not report unemployment rates for 2000 – 2002, the only three that did presented some of the highest rates worldwide; the unemployment rates of 29.5 in the region's largest economy (South Africa) and 33.8 for (Namibia) were only equaled by Macedonia, FYR (31.9) and Algeria (one of the most prosperous North African nations) with 29.8. Nowhere or no country elsewhere presented such alarming levels of unemployment in the world. (UNDP, UNEP, World Bank and WRI, 2005)

THE World Bank's classification in the early 2000s

The region presents a disproportionately large percentage of the member -states of the rather unfortunate categories of nations classified as "low income" "least developed countries" (LDCs), "highly indebted poor countries" (HIPC) but only a few to the "Middle Income" category and none is in the "High Income" class (UNDP, UNEP, World Bank and WRI, 2005: 174 – 227). Economic (growth) performance in Africa has risen between 1995 and 2004: economic growth (indicated by purchasing power increment) was 5.8% compared to 4% in 2003 (GEO Data Portal from World Bank 2006). However, to meet the Millennium Development Goals (MDGs), Sub- Saharan African economies are expected to grow at the rate of seven percent so that poverty can be reduced by half by 2015 (ADB, 2004). Climate change, water availability and other environmental and socioeconomic challenges (currently and expected) have been observed to affect several parts of the region [West, Central, North, East (most severe/prevalent) & Southern Africa]. These are described in detail in the literature (e.g. Mafuta et al. in UNEP, 2007).

CLIMATE AND ENVIRONMENTAL CHALLENGES FACING AFRICA

About five million square kilometers of land in Africa was adversely affected by degradative forces in 1990 thereby causing loss of livelihoods and worsening existing poverty. Serious and prevalent poverty in Africa compels people to disregard sustainable management of land and resources on it when they are pursuing immediate survival and satisfaction of basic needs for food, shelter and clothing. This situation caused greater and more devastating land degradation. Poverty and application of rudimentary agricultural techniques perpetuates poverty

and land degradation under a vicious cycle of poverty. Since 1981, food production per capita on the continent declined by as much as 12% (UNDP, UNEP, World Bank and WRI, 2005).

Although Sub-Saharan Africa's contribution to global GHG emissions were the lowest in the world (0.7 billion metric tonnes of CO_2 for 1990 – 2004), (UN, 2007), climate change (extreme weather events: drought, flooding) have been reported to exert pressure on and exacerbate land degradation on the region. It is adversely affecting the region's hydrography (changing river catchment), fuelling deforestation and desertification and reducing the quality of services offered by the ecosystem. Responses to these challenges have included the policy of promoting integrated crop and land management programmes designed to also improve agricultural productivity. Two major factors have been advanced to explain the dismal performance of policy in this regard: deficiency in the policy framework, and an unjust system agricultural subsidy practiced in advanced nations (Mafuta et al., 2007: 195 – 197 in UNEP 2007).

The article argues at the outset that the failure of Sub-Saharan Africa to rapidly and decisively respond to the opportunities being perceived by the Obama administration in regard to green development/technologies represents an agreement by leaders (political) of the region to perpetuate poverty and underdevelopment, unemployment, among other maladies in the region.

THE PROBLEM

Despite the deployment of partnership and participatory development strategies in advanced countries of the North especially the USA and UK, developing countries including Sub- Saharan Africa are yet to realize the significance of policy-relevant civil society organizations or think-tanks in the making of evidence-based policy for achieving sustainable development. Policy and decision making in Sub-Saharan Africa seems to be restricted to the ideas, whims and caprices of the political or power elite. Therefore, civil society in Sub-Saharan Africa has, by and large, been excluded from the policy process. This has led to a situation whereby the benefits accruing from the creativity, versatility, flexibility of civil society's approach to tackling most of the global challenges (climate change, poverty, violence, terrorism) to be forfeited by poor African countries. The consequence of this social exclusion, elitism is the perpetuation of poverty and underdevelopment, inequality, among other ills of the society, economy and environment.

Although John Byrne and colleagues have solicited for "Civil Action to shrink the (increasing global) Carbon Footprint" as a means of "Undoing Atmospheric Harm" resulting in dangerous and abrupt climate change, these have been directed at the US Government and other western countries (Byrne et al., 2008). Calls for policy shifts from anthropocentrism towards ecocentrism in Africa have been rather scanty and improperly directed.

QUESTIONS

What recent political changes in the USA towards green development strategies provide prompts for (re)alignment of development directions in Sub-Saharan Africa that promise to benefit the region?

What success stories in green development in developing nations of the South promise to make this strategy profitable for Sub-Saharan Africa?

To what extent does a Pan African Civil Society-led green development strategy promise to accelerate sustainable development in Sub-Saharan Africa? The purpose of this article is to raise this development issue, the gap in the policy response among nations and regional economic and political blocs to the visibility of the global and regional development community.

OBJECTIVES

1. To show how various philosophical perspective (ecocentrism and anthropocentrism) have resulted in deleterious outcomes for both human kind and nature in form of climate change and global financial crisis and economic recession.
2. To highlight the need for increased support for and consideration of the contributions of think-tanks to Africa's sustainable development at regional (that is continental), and national policy levels.
3. To show how recent changes in approaches to socio-economic and environmental management in the USA and elsewhere towards green development agenda not only provide an example for Sub-Saharan Africa but also offer opportunities (better than hitherto) for the African region.
4. To show a Pan-(Sub-Saharan) African strategy led by civil society promises to complement public sector policy that is capable of leveraging the rate of development.

ORGANIZATION OF THIS ARTICLE

This article is organized in sections: Having used the first section to introduce the title and relevant preliminaries, the second section will present a theoretical-conceptual framework for guiding the discussion. Two major concepts: ecocentrism and anthropocentrism are presented as key philosophical perspectives that describe the policy disposition or foundations of governments at national, sub-national and sometimes regional or international levels. The consequences of the foregoing policy perspectives on humankind and nature are presented in form of climate change and the global financial crisis.

The third section shows how various approaches to national development policy (that is tendencies towards either ecocentrism or anthropocentrism, or both) have been

exhibited in the different recent political regimes in the USA especially during the administrations of Williams (Bill) J. Clinton, George W. Bush and the incumbent Barack H. Obama.

In the fourth section, we argue that the rather dismal performance of policy globally and nationally has been amply indicated by climate change (which represents the failure of the goals of the ecocentrists) and the global financial crisis (indicating that the best offered by anthropocentric community failed to prove enough and cost-effective) – for sustainable development. Following this outcome, we conclude that the green policy being charted by the Obama administration promises to resolve the multiple crises by addressing ecological, economic and social concerns/problems. However, we recommend the need for the global community to follow the serious promises of President Obama that the US Government will not only acknowledge climate change but lead in tackling the debacle. On this point, we recommend the resort to the first and clear warnings and recommendations of climate scientists from think-tanks at international and national levels regarding the targets for GHG emission reductions instead of the rather politically and anthropocentric agreements that have so far been reached especially involving EU concessions to Canada, Australia, Japan and Russia in the July, 2001 international meeting in Bonn (Germany). We conclude that think-tanks be supported to guide ecocentric policy at global, national and sub-national levels as a way of avoiding the widespread catastrophic consequences predicted to occur, should humankind perpetuate past and current lifestyles, especially the over-use of hydrocarbon-based fuels (fossil and nuclear energy sources).

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW: ECOCENTRISM VS. ANTHROPOCENTRISM

Some strands of political philosophy have developed suitable concepts for analyzing various policy choices of governments and/or administrations. For example, political philosophers among others have developed and used the concept of ecocentrism to refer to a nature-centred system of values for embedding public policy. Ecocentrists justify their values for emphasizing nature protection, preservation and conservation on an ontological belief and consequently ethical claim. They debunk two claims promoted by anthropocentrists that:

i) Human beings are superior to non-humans and therefore constitute the sole bearers of intrinsic value in the ecological system within which Man is only a part.
ii) Humans and human nature are in possession of a greater intrinsic value compared to their non-human counterparts and their own nature. Therefore, ecocentrists advocate for the enthronement and/or practice of biospherical egalitarianism, a philosophy that promotes equality of the intrinsic value for both components or natures of the ecosystem: human and non-human. Ecocen-trists have constituted a radical rejection of the human-centred development policy and practices called anthropocentrism, which is relatively older and more deeply entrenched in public policy systems, and attitudes of industrialized western culture including the scientific community.

This paradigm of (anthropocentrism) hinges its value system in determining the need for protecting non-human nature on the extent to which the demands of human utility have been satisfied. In this regard, human welfare is the basis on which the greatest premium is placed as the primary challenge or interest of policy while non-human nature (and its conservation) is considered to be secondary. Anthropocentrists and critics of ecocentrism claim that the placement of high premium on non-human nature protection is unnecessary, represents the promotion of an anti-humanist morality through which human well-being is ignored, downplayed in favour of the empty claim and poorly defined claim that non-human nature protection leads to the achievement of the "greater good" (Humphrey, 2003 in McLean and McMillan, 2003).

The prolonged practice of human welfare-centred public policy generally in the USA and the western culture could be inferred to be a commitment to unbridled anthropocentrism. While the deliberate denial of climate science especially the several warnings about an increasingly warming globe (or global warming) represents an extreme form of political interest promotion, an issue beyond the scope of this paper. However, it deserves mention that it has taken centuries (the 19th century) since Arhenius published one of the pioneering reports about the warming of the earth (Arhenius, 1896). This prolonged reluctance to consider the ecological consequences of anthropocentric and strictly economic growth-centred development policy generally and the associated attitude promoting public energy systems to over-rely on fossil fuel (petroleum oil, natural gas, coal among others) has led to the dangerous and abrupt climate change problem.

There is an emergent and increasing advocacy for a rapid transition in public policy on energy to shift "from Fossil Fuels to Renewable Energy" (Droege, 2008: 1 – 14) and energy efficiency systems (Alliance to Save Energy, ASE. 2007, 2008). This advocacy has been well documented and needs not detail us here. We turn to a brief elaboration of ecology and its relevance and application in government and public policy because of the enormity of the climate change challenge to the global and African environment, society and economy, and polity.

ECOLOGY, GREEN PHILOSOPHY, POLITICS/ GOVERNMENT AND SUSTAINABLE DEVELOPMENT IN SUB-SAHARAN AFRICA

The work of Lincoln Allison shows that the term "Ecology"

was originally used in its German form: “Oekologie” to refer to “the science of relations between (living) organisms and their environment” (Haeckel, 1866). This definition is believed to have remained useful since its formulation. The following three dimensions of the concept (Ecology) have been distinguished:

i) An academic and professional field concerned with studying and explaining the system of interactions among living organisms.
ii) The study of the system of actual causal inter-relationships among species of fauna and flora.
iii) The way the existence and significance of a distinct ecological system is perceived, considered and incorporated into programmes of politics and morality of the society. In this sense, the emphasis on morality and politics deviates from the earlier conceptions of the subject thereby making this subfield or definition to fail to satisfy the views of some professional Ecologists (that is, those who define and practice the discipline differently). Moral and political ecologists question and reject the viability of the way most programmes are planned and implemented in ways that disregard the need to sustain the harmony between humankind and nature thereby allowing and causing non-human nature to suffer enormous degradation and destruction. Therefore, political ecology emerged as a subfield concerned with: promoting efforts to achieve the above objectives; enhancing the coherence of the pursuit of morality and politics in development planning and management and ensuring that the relationship between scientific ecology and political-moral ecology is sustained and maintained.

The emergence of increased environmental consciousness in the western world in the late 1960s and early 1970s led to the distinction between the political aspect of ecology and the scientific leanings of the subject. The implications of the idea of ecology also gained the interest of moral philosophers including Arne Naess, a Norwegian who formulated the concept of “Deep Ecology” as a subfield that is devoid of “anthropocentrism”, which was perceived to be “Shallow Ecology” but concerned with promoting the principles of “biospherical egalitarianism”, “diversity and symbiosis” and “decentralization”. The shallowness of ecology practiced and advocated by anthropocentric environmentalism described the way its practitioners myopically concentrated on the conservation of fossil fuels and beautification schemes which were undertaken with the sole purposes of promoting human welfare or consumption of natural resources. Moreover, proponents of “Deep Ecology” argued that the shift to their camp was necessary because achievement of its goals/objectives translated into the achievement of the objectives of shallow ecology.

The creation of “green philosophy” resulted from this debate combined with increasing consciousness and consideration of ecological issues since the 1970s. Allison claims that ecological political theory, a component of the wider “green philosophy” presents a fundamental problem: neither a model of ecological stability nor a proposal or idea of a universally accepted role that humans should play within the ecological system has been provided. Instead, ecological political theorists have resorted to the creation of the Darwinian model of an unstable and evolving system based on the scientific ideas espoused by Charles Darwin (1809 – 1882). Darwinists argue that humankind, (although other constituents of the ecosystem play their roles) is principally instrumental to the modification of life conditions of other species, thereby determining the living chances of all species either for the worse and more for the better. For example, John Halliday suggested that Darwinism concentrates on populations of no fixed or predetermined boundaries, contrasted to biologists’ concern with species types which individually possess fixed essence and form. Survival of populations under Darwinists’ conception depends on “natural selection” of favourable and heritable variants of populations (organisms) which better adapt to their environment or niche. Unremitting pressure of the selection process causes organisms that fail to adapt to the environment to get rejected through either death or sterility (Halliday in McLean and McLillan, 2003).

Lincoln Allison suggested that collective and individual choices (the pursuit of improved living standards by Man) are ecologically neutral: that is, can neither be said to be wrong or right per se! However, there has been increasing but incoherent advocacy for the consideration of rigorous analysis of the ecological consequences of human decisions and also the ecological or environmental aspects of policy (Allison in McLean and McLillan, 2003: 161 – 162). The looseness in the advocacy for ecological considerations in policy has tended to be associated with the disposition of policy makers especially the US Governments prior to the Obama administration. Therefore, we turn towards elaborating the concept of climate change and its recent acknowledgement by US President Barack Obama.

CLIMATE CHANGE AND GLOBAL LACK OF LEADERSHIP IN THE CLIMATE-ENVIRONMENTAL SECTOR

Increasing emission of green house gases (GHG) comprising carbon dioxide (CO_2), methane (CH_4) among others over the years has led to the “ceiling” of the atomsphere thereby causing solar radiation entering the earth surface to get entrapped between the earth surface and the atmosphere (that is, below the “ceiling”) instead of getting reflected back upwards beyond the atmosphere. This phenomenon which is abnormal due to its contradiction of the condition of the global atmosphere prior to the formation of the atmospheric “Ceiling” due to GHG concentration because of the steady and rapid increase in temperature of the global atmosphere since its

emergence is called “green house effect”, global warming and/or climate change.

The phenomenon has been prolonged, caused changes in the mixture of gases constituting the earth’s atmosphere over the years and centuries and led to fluctuations in the average global temperatures all through its emergence. It has been characterized by the following:

1. Created by the action/consumption habit of humankind especially over-use and over-reliance on fossil fuels and land-use change.
2. An unprecedented rate of occurrence.

The consequences of climate change have been reported to range from uncertainty of models predicting increased deforestation, desertification, pole-ward shift of vegetation and animal populations, rising sea levels, decreased precipitation (Humphrey, 2003 in McLean and McLillan 2003: 225). More recently, use of improved equipment and approaches in scientific studies undertaken by the Intergovernmental Panel on Climate Change (IPCC) led to projections that the continued build up of GHG emissions from human activity, especially in the 20^{th} century (during which temperatures rose between $0.6 \pm 0.2^{o}C$), would lead to an increase in 200 average global temperatures between two and $4.5^{o}C$ by the year 2100 compared to 1900 levels (IPCC, 2007, 2001). This disastrous situation can only be avoided through prompt actions designed to promptly reduce the accumulation of atmospheric GHG. Various researchers have shown that high end warming (or accumulation of GHG) of the range presented by the IPCC and colleagues would lead to widespread catastrophic consequences (Schneider and Lane, 2006, Stern 2006, Myers 2006). To avoid the widespread catastrophic consequences projected, some preventive and protective conservation measures have been proposed. One of the most popular of these proposals has pegged the threshold for carbon concentrations at no more than 450 parts per million (ppm) (Oppenheimer and Petsonk, 2005; Hansen, 2004; Parry et al., 2001). Actions for curbing the carbon footprint owing to the recent agreement of the global scientific community that anthropocentric attitude (especially over use of fossil fuels) have triggered the change in climate, advocacy for prompt and considerable policy responses designed to avoid the predicted future catastrophic consequences have increased in intensity and frequency. One of the policy responses include the “Stern Review on the Economics of Climate Change” which was prepared by Sir Nicholas Stern, a former World Bank Executive, for the office of the Prime Minister and the Chancellor of the Exchequer of the United Kingdom. The Stern Review recommended the necessity for all countries to reduce by 80% or higher the level of anthropocentric emissions (Stern, 2006).

National academies of sciences of the G8 nations (comprising the USA, UK, Japan and others) and those of developing nations (India, Brazil, and China) jointly issued a statement advocating for urgent, significant and prompt actions designed to respond to the climate debacle in June 2005 (The Royal Society, 2005) in Byrne et al. 2008.

Political attention to global warming: The Kyoto protocol

Mathew Humphrey suggests that about 36 years ago, climate change started receiving increasing political attention due to the way it has become the crux of the emergent green politics of the period. A key milestone of global political response to climate change is the intergovernmental meeting of representatives of national governments and organizations in the Japanese city, Kyoto in 1997, during which the endorsement of a proposal by 38 industrialized nations led to the emergence of the Kyoto protocol. Under the Kyoto protocol, the 38 industrialized nations (Annex 1 countries) committed to reducing their CO_2 emissions at an average of 5.2 percent from 1990 levels by 2012. This measure was by far lower than the target of 60% reduction that climate scientists recommended as necessary for avoiding the widespread catastrophic consequences of climate change resulting from further global warming. However, the protocol represented a consolation to activists of green politics/development that adjudged it as a good and initial agreement that forms a basis for further work. It was heartwarming to environmental-climate campaigners in 2005 (February) when the protocol came into force through the achievement of the 55% endorsement by the Signatory nations (NGLS, 2005).

VARIABLE APPROACHES TO NATIONAL DEVELOPMENT POLICY

Rejection of the Kyoto protocol by the US government led by George W. Bush

Since its inception, series of intergovernmental meetings have been organized to mobilize greater political and legal forces, authority and power to transform the protocol into an enforceable treaty. In the first of these meetings held in November 2000 in the Hague, the insistence of the USA that forests and vegetation must be counted as ‘carbon sinks’ thereby providing a favourable standard for enormous fossil fuel consumption and associated CO_2 emission could be offset, caused major disagreement from the European Union (EU). The EU feared that this US proposal would constitute a loophole in the agreement due to the uncertainty, temporariness and instability of the carbon storage capacity of vegetation. The Protocol suffered a major setback due to the unilateral withdrawal of the US Government from the agreement following the election of George W. Bush citing the chances of inflicting disproportionate damage on the economy of the US if adopted. The setback posed

by the US led to the Protocol arises from the fact that the US contributes one of the most enormous CO_2 emissions (24% of the global total) . Therefore abdicating its responsibility to commit to the binding agreement represents a major obstacle in the quest for equity and justice in global and national response to the climate crisis. Other negotiations of response mechanisms founded on the protocol have included: the recent global meeting held in: the Indonesian city of Bali in the fourth quarter of 2008; in Bonn (Germany) in July, 2001 – where 186 national representatives conferred and successfully upgraded the protocol into an international treaty. This success was realized through the European Union's (EU) concession to Canada, Australia, Japan, and Russia in form of: the magnate de of allowances granted to nations interested in using forest as "carbon sinks" and also the type of mechanisms that could be applied to enforce the agreement. The Bali meeting successfully produced a road map for further negotiations.

The EU concession to the four nations effectively lowered the size of emission reductions from earlier proposal of 5.2% in 1990 levels to between 1.8 and 3% (Humphrey in Mclean and McLillan, 2003).

WHY GREEN DEVELOPMENT HAS BEEN ATTRACTIVE TO GOVERNMENTS IN EUROPE AND ELSEWHERE: THEIR CLIMATE-ENVIRONMENTAL FRIENDLINESS

Several reasons that have compelled governments in the European Union and elsewhere to adopt green development policy includes the emergence of climate change, crisis in the energy sector of nations that have been using over -centralized national grids for supplying electricity and social- economic problems such as unemployment, collapse of centralized grids. Therefore, the adoption of sustainable (renewable energy and energy efficiency) systems of powering economic, and social systems have become popular because of their environmental benignity, and also the experience that by their decentralized nature (that is, implementation in sub-national regional scales: states/provinces, local governments, towns and municipalities), they create new and more jobs than conventional energy stems (large hydro, nuclear power stations, coal-fired stations). These factors have led to rapid adoption of green energy policy in several nations of the world such as Germany, Denmark, India, Brazil (Droege, 2008).

The immense benefits arising from green power has encouraged the rapid growth of implementation of various types of renewable energy and energy efficiency systems around the world. Since 2000, the installed wind energy capacity from wind turbines for generating electricity more than quadrupled. Output rose from 17,400MW to 74,220MW in 2006. While the order of global leadership in descending order in the wind energy capacity in 2006 was Germany (28%), Share), Spain, USA and India (www.dbresearch.com, 25^{o} in Africa: 22 – 3), the USA recently rose to global leadership in wind energy implementation.

Moreover, renewable energy sources are credited with specific avoidance of CO_2 or "carbon (emission) costs" in the following order (in tonnes): photovoltaic (PV) (500 – 600), wind (60 – 70), hydro (unspecified) (35 – 55), carbon separation (28 – 53), new coal- fired power plants (14 -26) (Euracoal cited in 25^{o} in Africa, 2008: 23).

THE RISK OF CLIMATE CHANGE IMPACTS ON AFRICA

On November 15, 2006, at the 12 Conference of Parties to the UN Framework Convention on Climate Change (UNFCCC) in Nairobi (Kenya), the UN Secretary-General: Kofi Annan said, "The impact of climate change will fall disproportionately on the world's poorest coun-tries, many of them here in Africa. Poor people already live on the front lines of pollution, disaster, and the degra-dation of resources and land. For them, adaptation is a matter of sheer survival (Annan /United Nations 2006). The devastation wrought on Africa by climate change expressed by (extreme weather events: drought, flood, increased temperature) have increasingly been documented in the literature. For example, the occurrence of flood in Mozambique, food insecurity in Ethiopia, diseases, for example, Malaria in Southern Africa and drought in Malawi and agriculture and food security have been reported (Hellmuth, 2007). However, these reports seem to pertain only to the harbingers of climate change and do not cover the deleterious or more serious climate change impacts that will occur if policy ignores the warnings and recommendations for action by climate scientists. More devastating impacts might occur in future as indicated by past and current climate events. These beckon for the creation and use of research – derived information for policy and decision making.

The Official African Union (AU), (formerly Organization of African Union, OAU) sources claim that some responses of the continental political-economic body to climate change have occurred. These include: the establishment of the New Partnership for African Development (NEPAD)'s Environment Initiative, which is supported by the AU and the creation of a related Action Plan: all of which acknowledge the problem of climate change and variability and by implication the urgent need to address them. Moreover, the recognition of the need to coordinate proactive programmes designed to prevent and respond to disasters and risks was demonstrated through the creation of the AUC – supported NEPAD Africa Regional Strategy for Disaster Risk Reduction. It was proposed that the UN Economic Commission for Africa and the African Development Bank (AfDB) would collaborate with the UN to support the GCOS – Africa Climate (change) for Development – a new programme that was scheduled to also respond to climate change

and development issues from 2007. This programme has the objective of mainstreaming climate information into national development plans and programmes by initially concentrating on those sectors of national economies that are most sensitive to climate. The programme is also a component of the Global Climate Observing System (GCOS) designed to combine climate information and services with development plans as means of promoting the achievement of the Millennium Development Goals (MDGs) Babagana in: Hellmuth et al. 2007.

The foregoing responses to climate change and variability are restricted to continental institutional framework revolving around the AU. The mitigation and adaptation to climate change and variability would not be cost-effective if pursued based solely on those mechanisms.

It has long become the mantra that local action and solutions are appropriate responses to global issues and problems such as climate change. Therefore, national institutions, structures, processes and attitudes for responding to climate change are as important as their sub-national counterparts. So are those at the regional levels such as ECOWAS for Economic Community of West African States, South African Development Community (SADC) and so forth. Sadly, responses to climate change at levels smaller than the African continental region seem to be poor if not virtually inexistent.

THE POOR RESPONSE OF AFRICAN UNIVERSITIES TO CRISIS IN FINANCE AND ECONOMY CLIMATE CHANGE AS INDICATOR OF WEAKNESS OF POLICY

The raising of climate change to global and national visibility of policy makers was achieved through the meritorious work of research derived information provided by universities, think-tanks, non-government and civil society organizations (NGOs and CSOs). Some of these organizations include: the Intergovernmental Panel on Climate Change (IPCC), the Royal Society (UK), Centre for Energy and Environmental Policy (USA), World Council for Renewable Energy (WCRE) (Germany), World Wind Energy Association, WWEA (Bonn, Germany), among others.

In Africa, think -tanks of this nature are few. This poses a problem for the generation of information and knowledge as well as implementation of programmes concerning the mainstreaming of multi-sectoral programmes into national development programmes at national and regional levels (e.g. ECOWAS, SADC, and so forth) as obtains in the European Union and elsewhere.

Moreover, recent research indicates that the response of national university systems in some African countries to climate change has been rather poor. For example, despite the emergence of over 100 universities in Sub-Saharan Africa's second largest economy (Nigeria), the offer of specialized courses for awarding degrees and diplomas and specific course streams dedicated or devoted to climate change and variability issues, public enlightenment and awareness raising concerning climate change, among other academic and professional programmes are yet to be seriously undertaken by Nigerian universities as obtains elsewhere in the world especially in North America and Europe (Ingwe, 2009). Information on the AU response to crisis in finance and economy was not available to the authors at the time of this research.

POOR RESPONSE OF NATIONAL GOVERNMENTS IN AFRICA TO CLIMATE CHANGE, FINANCIAL AND ECONOMIC CRISIS

In context of poor systems of economic management, education, science, technology, and environment, the response of most governments of nation states to the crisis in climate, finance and economy to be compromised or ineffective. This situation is attributable to the underlying weaknesses in national university systems, poor funding systems and the virtual absence of think-tanks that specialized in generating research-derived information on the affected sectors (Khor, 2001).

The foregoing crisis portends impediments in the quest to achieve the MDGs, which before the global financial meltdown and economic recession were feared to be unachievable. The UN report of the MDGs in 2007 revealed several bleak results. Sub-Saharan Africa presented the worst levels (that is, did not show that the MDGs would be achieved by 2015). For example, it remained the poorest region with 41.1% off people living on less than US$1/day in 2004; poverty gap ratio was 17.5% in 2004 (the highest worldwide); 166 children under five years old died per 1000 live births in 2005 (the highest worldwide); only 26% of the land area were covered by forests in 2005 – indicating compromise in ensuring environmental sustainability. The region presents the highest proportion of slum dwellers (62% of the total population) in 2005. This implies the low level of access to electricity and energy worldwide. The proposed implementation of a global partnership for development was rather poor before the global financial meltdown and economic recession. There was little to show for donors' pledge to double their aid to Africa at the Millennium Declaration in 2000. The official development assistance from developed countries as a proportion of donors' gross national income (GNI), between 1990 – 2006 declined from 0.35% in 1992 to about 0.25% in 1997, about 0.27% in 2004 before rising to about 0.35% in 2006. Access to markets was contrived to be preferential and favour developed countries (United Nations, 2007).

THE GLOBAL FINANCIAL CRISIS (GFC)

This economic phenomenon started in September 2008 and has persisted till today (March, 2009), and has been characterized by failure, of merger, or conservatorship of numerous large financial firms in USA. Later it spread to

the insolvency of other companies, most governments in Europe, economic recession, and declining stock market prices around the world. Before its manifestation, the likelihood of its occurrence had been reported by journals of business, which drew attention to the (in)stability of the major investment banks in the USA and Europe as well as insurance companies. Mortgage banks, which had shown signs of the occurrence of the mortgage crisis that was experienced during the crisis had been marked by: credit crisis, bank failures, and reduction in stock market indexes in Europe and also large- scale lowering of the value of equities and commodities. It has been reported that the section 128 of the Emergency Economic Stabilization Act of 2008 has worsened the situation through its allowance of the US Federal Reserve to reward reserve requirement balances held on deposit from banks through the payment of interest, removal of incentive for banks to give credit to rather than providing cash on deposit with the Federal Reserve, Liquidity Crisis ensued due to the de-leveraging of financial institutions and also the declining international trade. The crisis is continuing irrespective of the efforts of national ministers of finance, governors of national apex (central) banks to work in a coordinated manner to address this frightening phenomenon. Moreover, it is changing its manifestation including the currency crisis which occurred in October 2008 in form of transfers of huge capital resources by investors in the stronger currencies (such as the Chinese Yen, the US Dollars, Swiss Franc) and has caused several economies to search for or solicit aid from the IMF (http://en.wikipedia.org/wiki/Global_Financial_financial_crisi_of_2008).

The response has included US government takeover of home mortgage lenders. Major features included filing for bankruptcy by Lehman Brothers following the refusal of the Federal Reserve Bank to offer support, the sale of Merrill Lynch to Bank of America; all on 14 September, 2008 (http;//en.wikipedia.org/…).

The “EU pledges fresh 75bn to fight crisis” was an addition to previous provision of other support to the IMF (International Monetary Fund) (The Punch, 2009: 21).

EMERGING GREEN DEVELOPMENT POLICY OF THE USA UNDER THE OBAMA ADMINISTRATION AND CHINA

While renowned experts in climate change response such as Joseph Stiglitz and Nicholas Stern are still calling on President Obama to take leadership of the global green recovery from the crises of climate change and the financial and economic recessions (Stiglitz and Stern, 2009), some have already credited the US President of being on the lead already (Robbins et al., 2009). The financial bailout proposed by president Barrack Obama initially was $1.5trillion, and there was a compromise between the US Senate$838bn and the US Federal Legislature $819bn – versions approved early February, 2009 receding US economy (by a 61-37 vote) to restore the…….(http://news.xinhuanet.com/english/2009-02/10/content_10797232.htm) Apart from the proposal that a substantial part of the bailout will be invested in developing and implementing sustainable (renewable and efficient) energy technologies and systems as a means of creating most of the three to four million jobs promised by the Obama administration, President Obama had acknowledged the manifestation of climate change as a global threat during his…month campaign and during and after his inauguration in and since January, 2009. He has further committed the US Government to leading the global effort to mitigate and adapt to climate change. These actions and positions of the US Government constitute an emerging green development policy promises a departure from previous global lack of leadership in the environmental sector. President Obama has already issued several directives to US Government departments and agencies showing how programmes should be formulated and implemented to use green development strategies to achieve sustainable development.

CHINA JOINS THE GREEN DEVELOPMENT PHILOSOPHY

Recently, analysts have declared that “the colour of stimulus goes green” (Robbins et al 2009). Robbins et al. (2009) reveal that governments across the globe have allocated over USD43billion in fiscal stimulus focusing on key climate change reduction investment themes with China and the USA in the lead worldwide. They believe that this represents the beginning of a future green economy that is, carbon reduction economic growth strategy. The G20 recovery talks and the Copenhagen climate negotiations are working / have worked towards this new direction of carbon reduction. With a total of US$2,796bn funding, the US has invested a total of $973.0, that is, US$186.0 (USEESA) and US$787.0 for USARRA, while China invested $586.1 (Robbins, Clover and Singh 2009).

Conclusion

The crisis in climate, finance, and economy, among other sectors at the global and national levels reflect the way policy has ignored ecocentric principles and limitation in the concept and operation of anthropocentrism. Specifically, pursuing the objectives, goals and interests of human beings without considering ecological principles or the inter -relatedness of human and non-human natural systems is responsible for the climate-environmental crisis. While the corruption of anthropocentric institutions, processes, structures and attitudes by top functionaries of global and national financial and economic systems has led to the crisis in these sub- sectors. The climate crisis is also the consequence of the way policy has ignored research-derived scientifically based information

and knowledge provided by think-tanks, NGOs/CSOs and universities. This point is also applicable to the causes of the crises in finance and economy at global and national levels. The mitigation and adaptation to climate change and resuscitation of financial and economic systems will be successful if policy hearkens promptly to the research-derived information produced by think-tanks, universities and civil society in directing development plans and programmes.

Unfortunately, despite the energy crisis in Africa in the form of gross inadequacy of electricity and the attendant disability of social and economic systems in Africa, the adoption of sustainable (renewable and efficient) energy has been rather negligible, slow, and by far below the level in nations that are in the front line of green power implementation.

RECOMMENDATIONS

The individual nation states in the membership of the African Union generally and in Sub-Saharan Africa in particular are by the foregoing findings of this study advised to encourage the creation and development of think-tanks that undertake research to produce information concerning various disciplines in the nexus of the development of both human and non-human natural environmental systems. It means that think-tanks with visions and missions to support or strengthen evidence based policy in human development (including economic management at global and national levels) and natural environmental sustainability deserve the attention, support and patronage of African governments. By impli-cation, the previous attitude of animosity championed by African governments that are almost solely interested self- perpetuation against NGOs and CSOs does not bode well for development of the society generally and the environment and economy in particular.

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