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CONTENTS

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Editorial Note

In India with the change of guard at the centre there is lot of hope and expectations from the new regime. New policies and areas of focus are sending positive signals to the business communities in India and abroad. Discussions are already taking place on various platforms regarding environment protection, improving the business climate, reviving the lagging sectors and others. Accordingly in the present issue we have chosen the research work done on these related themes. The first article takes up the issue of environment. The author summarizes the issues and concerns in this aspect and introduces the reader to the latest terms being introduced world over in this important field. The concept of mergers and acquisitions is examined in the second research study. Based on the primary and secondary level data the authors attempt to throw more light on the trend of mergers and acquisitions taking place in the business world. With the new governments in the different states of India there is unwarranted haste to appease the farmers by way of debt waivers and debt relief. The author in the third article of this issue examines the usefulness of such schemes in the state of Andhra Pradesh. It gives useful insights into the reach and the utility of such schemes. It is concluded that instead of straining the exchequer by floating populist schemes it will be wise to design long-term asset generating schemes for the poor farmers. This will not only reduce the suicide rates being observed in different states but also help the farmer families to rise in their economic status.

In all the present issue covers the latest topics being discussed in the academic and policy making field. The rigor of these research articles and the new observations will definitely benefit the researchers and professionals in these fields.

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Editor

Global Climate Change and Need of Green Economic Model

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Abstract : The extremes due to climate change is perceived as one of the most widely and argued issues faced by humankind. In due course of time, there has been huge changes in the dynamics of two important issues. First, the dynamics of complex relationship was changed on scientific understanding on biosphere, politics, policies and economic fundamentals by IPCC on the one hand and the actions of the governments on the other hand. Second, the changing scenario of relationship between environmental and developmental models, which have been adopted by numerous countries. Under the changing scenarios, two outcomes have clearly emerged from the analysis of global climate change. First, the emission of GHGs, which heat up the atmosphere is rising, as a consequence of rising the concentration of CO_2. Therefore, this is aggressively disrupting the nature's cycles. As a result, the earth is hurtling towards endemic, spiraling, unending climate instability with melting ice caps and glaciers, rising sea levels and increasingly frequent erratic weather events. The world has failed to do the minimal necessary to prevent the earth from rapidly heating up even after two decades of first Earth Summit at Rio. Secondly, World's public has very few instruments to influence national climate policies and complex international negotiations since 1992. Therefore, the recently adopted green economic model (GEM) model can address the problem of brown economic model (BEM). The present paper review and explains in detail the conditions in which these models become useful.

Key words: Green Economic model, Brown economic model, Earth Summit

1.0 Introduction

The studies related to climate change at the global level are viewed in two ways, i.e., positive and normative. Positive approach is observational and very important input for the public policy formation (Kolstad, 2011). It assess the impact of climate change on various dimensions, viz., reduction of agricultural production, sea level rise, melting of glaciers and ice caps, change in ocean currents, pattern of precipitations and wind flows. Few studies observed that changing in climatic conditions affects agricultural productivity adversely (Mendelsohn, et al., 1994). The process of trade and industrialization enhances the intensity of air pollution of CO_2, SO_2, black carbon and aerosols, methane, hydroflorocarbons and subsequently helps in increase in water and soil pollutions. Free trade with developed countries has tended to accelerate deforestation in Latin America, and Southeast Asia and intensify the rate of desertification and extinction of some animal and plants species in Africa (Rudel, 1989). Further, contrary to the conventional wisdom, free trade has not been consistent with environmentally sustainable development (Daly, 1993). On the other hand, normative approach provides guidance for several policies to pursue and suggests about the best policy for the society (Kolstad, 2011). Further, it deals with the critical issue of the equity on climate change negotiations, such as future trajectory of green house gas emissions, the distribution of burden between different countries for reducing GHGs, sustainable resource use, production and consumption. Climate Change is really not a 'normal' international environmental problem; however, it threatens huge changes in living conditions and challenges of the existing patterns of energy use

and security (Vogler, John, 2011).

Keeping in mind the above issues relating to climate change, this paper highlights the following issues. Firstly, a brief analysis of extremes that have taken place in recent past as a example of negative externalities of Brown Economy Model at the global level. Secondly, the movement of international negotiations vis-à-vis politics and complexities associated at the international level negotiations to curtail down the emissions of Green House Gasses (GHGs). Thirdly, the need of an alternative economic model and it's complications in India.

2.0 Climate Change and the Extremes in Recent Past

External weather related disasters are becoming more common in recent years. Extreme events have more than doubled worldwide since 1980 (Siclair, 2012). There are many extreme examples stands out are as follows. First, record high temperature in Australia in 2009; United States including highest June temperature, i.e., 54.0^{0}C in Earth's recorded history at Death Valley, California. Second, heavy rainfall and catastrophic floods in Northern India in 2013; Jammu & Kashmir in 2014; in the U.S.A, Canada, Central Europe, and Argentina. Third, parts of the Central U.S. also experienced record snowfall as late as in May in 2013 and simultaneously, other parts of the U.S., such as Southern Texas, are in the midst of record of drought. Four, extreme temperature swings are also becoming common. Having endured a "bine-chilling" cold wave in January, heat massive wave was in May in India and the risk of such heat waves is predicted to increase. Further, such swings are not uncommon in the United States of America. According to the National Oceanic and Atmospheric Admission (NOAA) of U.S., the city of Lincoln in the State of Nebraska registered a record low of 0.5^{0}c on May, 2012, rising to a record high of 37.7^{0}C within two days. After all, NOAA reported that the global average temperature in May 2013 tied with 1998 and 2005 as the third warmest May in 134 years. Both extremes are increasing. However, Justin Grieser of the Washington Post reported that in Washington, D.C., "daily heat records have outnumbered cold records..." by a just released report from the World Meteorological Organization titled "The Global Climate 2001-2010: A Decade of Climate Extremes", (WMO, 2013). Further, the average temperature rise, the overall temperature distribution shifts higher. The heat extreme which were very low probability of being observed 30 years ago are observed much more frequently today (James Hansen, 2012). Similarly, ".... Worldwide, the number of local records, i.e., breaking monthly temperature extremes is now on average five times larger than expected in a climate with no long-term warming" (Dim Coumou, 2012). Five, a Global Climate Risk Index indicates that warming is affected most of the Globe, especially in Asian continent. The economic impact of climate change is also significant and growing. Therefore, we must accelerate a shift worldwide from fossil fuels and heavily carbon intensive activities, towards a new economic growth based on renewable energy, energy efficiency, and carbon sequestration. Six, in a recent study conducted at Potsdam Institute for Climate Impact Research lead by Dim Coumou in 2100 that 3 sigma heat waves will cover 85 percent of the global land area and 5 sigma heat waves will cover around 60 percent of global land (Dim Coumou, 2013). 7. In a recent study conducted by Toshihiko Sugiura at National Agriculture and Food Research Organisation in Fujimoto, Japan that the taste and structure of Apple has been changed over the years due to increase in temperature, change in precipitation and solar radiation (Toshihiko Sugiura, 2013).

Global warming responsible for these kinds of extremes in other words, global warming is linked to both extreme heat and cold and further cause a record of droughts and rainfall, snowfall, or floods. Many scientific studies were in the past undertaken and supported that Jennifer Francis and Stephen Vavrus have shown, drastic Arctic summer sea ice melt since the 1980s (equivalent to -40 percent of the contiguous U.S., land area, almost equal to land area of India) and concomitant heat transfer to the Arctic Ocean could cause significant anomalies in atmospheric weather patterns, particularly in the north polar jet stream air current. Thus increased temperature and occurance of extremes are not just chance factor but substantially due to global warming. Further, the IPCC study in 2007 predicted increase in summer dryness and winter wetness in the northern hemisphere. There is growing evidence that global warming is partly due to significant increase in associated record forest fires. At the same time, the vast majority of the warming in the oceans. Greater evaporation of water into a warmer atmosphere made water holding more water vapor, which has led to an increase in atmosphere water content by about 4 percent since the 1970s.

Further it has been observed that rate of global warming has slowed over the last 15 years despite doubling of CO_2 level. The temperature has been reduced for 2^0c to 1.5^0c in 2007, as per the report of IPCC in AR4. Despite sign of an improvement in the reduction of global temperature, there is no room for complacency as numerous externalities are identified during the recent years. There are three theories in recent climate science literature seeking to explain the slowdown. First, Global warming is measured by taking an average of near surface air temperature all over the globe throughout the year. However, this does not account for the heat trapped by GHGs that is transported into the deeper oceans. Warming of ocean waters below 700 meters has been exceptional high in recent years. Depth below 700 meters have become much more strongly involved in the heat uptake after 1998 and subsequently account for 30 percent of the ocean warming precisely the period in which surface warming has slowed down (Michael P. Byrne et al., 2013). Second, prolonged La Nina like cooling effects in the tropical pacific has lessened the impact of GHGs by 0.15^0c in recent years. It is a natural variability and therefore the slowdown shall be temporary (Yu Kosaka, Sanng; et al., 2013). Third, the nearer surface warming is being masked by an increased generation of aerosols, caused by greater manufacturing occurring in China during this period and lesser degree in India. This particulate pollution is harmful to human health but has cooling effect in climate terms (The Hindu, 23rd September, 2013).

Based on similar types of numerous negative externalities in the past, various steps were taken at the international level such as development of creation of norms, capacity building, scientific understanding, governing the commons. A critical outline of various steps at the international level to curtail down the emission of pollution and the reasons for failure are sketched as follows.

3.0 International Response to Global Climate Change

Global problems need global solutions and pose a fundamental requirement for global governance. In addition to this, local or regional action plays important role. Therefore, one of the definite characteristics of environmental politics is 'think globally and act locally'. The purpose of the global environmental

governance is conservation of natural resources and controlling the damage caused by pollution. Further, global governance also deals with poverty reduction, economic development, population growth, sustainable development and resource management. The idea of environmental conservation was officially started in 1946 in the form of International Convention for the Regulation of Whale (ICRW) and its International Whaling Commission (IWC) for conservation of Whaling industry and preservation of great Whales. Further, the salient features of environmental issues have grown in 50's and 60's at global and various countries level. The UN Conference on Human Environment (UNCHE) in 1972 at Stockholm created United Nations Environment Programme (UNEP) and established environmental department by various governments. It was established that environmental issues were not separated from the development model at Global level during 70's also (Voglur, John, 2011).

The first treaty on emission of pollution was adopted in 1979 at a meeting conveyed in Geneva by the UN Economic Commission for Europe (ECE). In this treaty, there was little support for the adoption of mandatory reduction of emission of SO_2 and other acid forming pollutants. This convention is otherwise known as Long Range Transboundary Air Pollution (LRTAP). The LRTAP had vague understanding that states would ensures the activities taking place within their boundaries, which do not cause damage to other countries (Soroos. M.S., 2004). A meeting of the parties to the LRTAP in 1985 adopted that states to reduce their emission of SO_2 by 30 percent from 1980 level by 1993. Each country was left to decide on the measures it would adopt to accomplish this reduction. However, several parties, viz. USA, UK, Poland, and Spain refused subsequently to reduce SO_2. Further, parties to the LRTAP concluded to limit emissions of NO_x levels by 1994 (Soroos, 2004). However, it was disappointed that protocol failed to mandate any reductions of NO_x. The protocol of 1991 proceeded for the targeted volatile organic chemicals (VOCs), which was broad category of substances that was responsible for ground level of ozone and photochemical smog, further, it was expected to control by 30 percent up to 1998.

The parties to the LRTAP convention adopted as a revised sulfur protocol in 1994 was based on the critical load. Under this protocol, each country was given its targeted percentage of emission reduction based on absorbing capacity of a geographical region for acidic deposition without significant environmental damage. Initially, it was agreed to reduce by 60 percent by 2000 beyond the critical load in the European regions, whereas many countries were not committed to cut the emission (Soroos, M.S., 2004). Further negotiations were led to the acidification, eutrofication, ground level Ozone layer, at Gothenburg, Sweden in 1999. In this convention, parties to the LRTAP committed to reduce sulfur dioxides (SO_2), nitrogen oxides (NO_x), volatile organic chemicals (VOCs) and NH_3 by 2010 in a phased manner.

The reduction of substances caused for depletion of ozone layer also got similar significance at International level negotiations. Developed nations viz., USA, Sweden, Canada Norway initially promised to reduce CFC, aerosol sprays, whereas many other countries refused it (Soroos, M.S., 2004). The first international convention on ozone layer was held at Vienna in 1985, which decided to control/limit or prevent activities to diminish the ozone layer depletion. Initially this treaty

did not set a time limit for mandatory reduction in production and use of substances to ozone depletion (Benedick, 1998). The landmark Montreal Protocol on substances of ozone layer depletion was held in 1987, which decided to reduce the production and use of CFC by 20 percent up to 1993 and 50 percent up to 1998 with 1986 as the base year. As the depletion of ozone layer spreaded to other latitudes higher than Antarctica, the parties to LRTAP in its convention at London in 1990 decided for completion of phasing out of CFC and halons by 2000. Furthermore, carbon tetrachloride and methyl chloroform was banned in 2000 and in 2010 in phase wise. Copenhagen convention of LRTAP in 1992, decided the use of HCFCs as a substitute of CFC. Therefore, the Montreal Protocol of 1987 and the amendments made in 1990, 1992 had drastically reduce the production and use of CFC, halons, carbon tetrachloride and methyl chloroform. However, there had been sufficient doubts on the intensity of recovering of ozone layer due to existence of illicit trade on banned substances of CFC and complete ban of methyl chloroform as it was for agricultural interest (French, 1997).

The emergency of sustainable development was formulated by the Brandtland Commission in 1987 (WCED, 1987), and the environmental issues had been pushed to the periphery of the international agenda out of the global economic downturn in the previous decades (Voglur, John, 2011). The UN Conference of Environment and Development (UNCED) or Earth Summit held at Rio in 1992, which was the largest international conference held so far. It finalized several significant documents and agreements such as Agenda 21 and UN Framework Convention on Climate Change (UNFCCC), Convention on Biological Diversity (UNCBD), and establishment of UN Conference on Sustainable Development (UNCSD). Further, the 10th anniversary of UNCED was held in Johannesburg in 2002 in the name of Earth Summit on Sustainable Development (WSSD). The Johannesburg Summit in 2002 focused on poverty eradication through providing clean water, sanitation, agricultural improvements. In such provisions, the role of public private partnership was played an important role. The change of words showed the change of conceptions and dynamism of Environment and Development since 1972. The important issues emerged from the three great UN Conferences in 1972, 1992 and 2002 was to make connection between the international environment and development agendas.

Many countries joined at UNFCCC, to cooperate one another in 1992 in order to limit the average increase in global temperature. In the Conference of Parties (CoP-1) of UNFCCC at Berlin in 1995 agreed that the original treaty was not achieved much and further commitment was negotiated for binding reductions. They launched negotiations to strengthen the global response to climate change after two years and consequently, the Kyoto Protocol (KP) was adopted at Kyoto Japan, on 11th December, 1997. The Kyoto Protocol legally binds developed countries for emission reduction targets. The Protocol's first commitment period (CP1) started in 2008 and ended in 2012. The second commitment period (CP2) began on 1 January 2013 and will end in 2020 (UNFCCC, 1997). During the first commitment period (CP1), 37 industrialized countries and the European Community committed to reduce GHG emissions to an average of 5.2 percent over 1990 levels. During the second commitment period (CP2), parties committed to reduce GHG emissions by at least 18 percent below 1990 levels in the eight-year period from 2013 to 2020.

Kyoto Protocol to the UNFCCC in 1997 committed for the developed countries to make an average of 5.2 percent cut in their GHGs from the 1990 baseline. Within this, different national targets were negotiated, such as 7 percent for USA, 8 percent for European Union. These were to be achieved by end of the CP1. Many steps were taken to increase the carbon sinks, such as expanding forest cover including developed nations, purchase of emission credit from countries, joint implementation, clean development funds, whose emission were below their KP targets (UNFCCC, 1997). It means that it entailed investing in projects in developing countries that could achieve a net saving in GHGs emissions. Nonetheless, the problems faced by the framers of the KP were numerous and complex. First, instead of controlling a single industrial gases like in the Montreal Protocol in 1987 for which substitutes were available, KP proposed to reduce most of GHGs at a time. As a result such kind of decisions, many countries could not achieve because of their respective political promises and compromise on standard of living (Vogler, John, 2011). Second, despite the international scientific effort for the creation of IPCC, there was no scientific consensus on CFCs reduction. The effect of climate change was fully not understood and there was enough evidence for some nations to calculate that there might be benefit for them from climatic alternations. Third, one of the most important international politics of climate change is the structural division between North and South on the issue of Common But Differentiated Responsibility (CBDR). Nevertheless, later on it was observed that North's commitment to reduce GHGs emission fell short of Kyoto commitment. Instead, many of them meet their targets by buying carbon credits from overseas (Bidwai, 2013). Though, there had been differential CO_2 emission proportionately to their population, developing world's (mostly India and China) emission would overtake the developed OECD nations at a point of time. Four, climate change remains as afflicted by free rider problem. Five, the protocol did not call upon developing countries to restrain their emission of GHGs, which were course to exceed the emission of GHGs of the developed nations.

The original KP left many issues to be worked out in future. Therefore, the CoP-4 in 1998 at Buenos Aires and CoP-5 at Bonn in 1999 achieved little progress on the unfinished agenda of KP. At this conference, the USA pushed developing countries to begin restraining their GHG emissions to improve the prospects for ratification of the protocol (Soroos, 2004). The CoP-6 at The Hague, Netherland in 2000 broke down in disarray as the USA insisted upon receiving at least some credit for its existing carbon sinks. In March 2001, the new Bush administration summarily rejected the KP without participating at the conference and leaving it to other countries to decide to continue on the finalization of KP. A reconvened CoP-6 in 2001 achieved key compromise and finalized protocol was adopted at CoP-7 in Marrakech, Morocco. Many countries have ratified the protocol and begun taking steps to reduce their GHG emissions.

Bali Action Plan (CoP-13) in 2007, launched a new, comprehensive process to enable the full, effective and sustained implementation of the convention through long-term cooperative action, even beyond 2012. The aim at reaching an agreed outcome and adopting a decision at CoP-15 in Copenhagen. All the Governments divided the plan into five main categories, viz., shared vision, mitigation, adaptation, technology and financing. Some other important agreement

included a decision on deforestation and forest management, a decision on technology for developing countries, the establishment of the Adaptation Fund Board (AFB), the review of the financial mechanism, going beyond the existing Global Environmental Facility (GEF) initiated the CBOR. It emphasized that North must make the bulk of the emission cuts required and do so first (UNFCCC, 2007).

The Copenhagen Accord (CoP-15 in 2009) contained several key elements on which there was strong convergence of the views of governments. These included the long-term goal of limiting the maximum global average temperature increase to not more than 2^0 Celsius over pre-industrial levels, subject to a review in 2015. However, there was no agreement on how to contain this in practical terms. It also included a reference to consider limiting the temperature increase to below 1.5 degrees, a key demand made by vulnerable developing countries. Some other central elements were as follows. First, developed countries' promised to fund for reducing greenhouse gas emissions and to adapt the inevitable effects of climate change in developing countries. Developed countries promised to provide US$30 billion for the period 2010-2012, and to mobilize long-term finance for a further US$100 billion per year by 2020 from a variety of sources. Second, agreement on measurement, reporting and verification of actions of developing countries, including reference of international consultation and analysis", which had yet to be defined. Third, the establishment of four new bodies, viz., a mechanism on REDD-plus, a High-Level Panel under the CoP to study implementation of financial provisions, the Copenhagen Green Climate Fund, and a Technology Mechanism (UNFCCC, 2009), which are yet to fully operationalised.

The CoP-15 was observed great failures. First, it failed to produce an agreement on overall GHGs emissions. Second, on the obligations of the developed countries to undertake quantitative time bound emissions cuts and financially supports to the South's mitigation and adaptation action. Third, it contains no global or country specific quantitative targets. Four, CoP-15 does not have legal status. Five, the conference was mildly unsuccessful and ended in disarray. Cop-15 has greatly failed to agree on country specific emission reduction targets for 2020, 2030 and 2050. Therefore, North has violated the climate change negotiation and must reduce its emission by 40-45 percent by 2020 and 90 percent by 2050. In the words Praful Bidwai regarding future of the human survival "*the pledges made under the Copenhagen Accord fell about 40 percent short of the emissions cuts necessary to cap atmospheric* CO_2 *concentrations at 450 ppm and limit of global warming to 2°C. Under the pledges reduction,* CO_2 *concentration will rise to 3 to 4°C, even 5°C, above pre-industrial levels by the end of the century, if not earlier. Such high level of warming will produce absolute climate havoc, cause colossal physical and economic damage, threaten millions of livelihoods and displace people on a scale never before witnessed. Some eminent scientists warn that only a small fraction of the world's population will survive at 4°C global warming (Bidwai, P., 2013, p.XIV).* Further, there is scientific evidence that the planet will soon unable to absorb the waste carbon dioxide (Sanwal, M, 2012).

The CoP-16 at Cancun, Mexico in November-December 2010 was not of great success despite improved atmospheric awareness. Cancun at least produced an agreement although its legal status has been questioned. Cancun summit failed to setting

targets for cutting GHGs emissions by dates, placing quantitative, time bound obligations on the North block, mustering technological and financial support to the South block to reduce or avert emissions and enabling technology transfer to facilitate low carbon development without stringent intellectual property conditions. It is also important to mention that USA drove a hard bargain and succeeded to convince the individual members not to follow the CBDR formula. Further, countries retained much of its prominence; despite G-77 got further weakened and dismantled. Most importantly, CoP-16 lessoned that voluntary reductions bear no relationship to their responsibility for causing climate change or their capacity for mitigating it.

The BASIC countries played an important role though there has been lot of divergence on commitment during 28th November to 9th December, 2011 at CoP-17 at Durban in South Africa. Durban was important because it was last year of CP1 and CP2 is about to start. However, umbrella group of countries, viz., USA, Russia, Japan, Canada and Australia, which wants the "*North and South differentiation principles to be abolished altogether in favour of the single agreement all major emitters and imposes emissions reductions targets on all countries, especially emerging economies like BASIC, baring only LDCs, SIDs and AOSIS (Bidwai, 2013, p.XVI).*" Further, Durban, conference included a decision by parties to adopt a Universal legal agreement on climate change as soon as possible and no later than 2015.

The CoP-18 at Doha in Qatar in 2012 has extended the life of Kyoto Protocol from the end of 2012 to 2020 to cut 15 percent CO_2 emission. Second, the conference incorporated for the first time the concept of "loss and damage", an agreement in principle that richer nations could be financially responsible to other nations for their failure to reduce carbon emissions. Third, some important aspects such as adaptation, mitigation and technology are discussed **to** adapt to Climate Change but not limit to change in agriculture and urban planning. Further, various steps and actions that the countries of the world can take to mitigate the effects of climate change (UNFCCC, 2012). At the end no fixation of country specific and time specific responsibility was fixed to cut CO_2 emission.

Numerous results emerged from the debate on climate change by the heads of the countries, policy makers, scientists and diplomats. First, emissions of green house gases which heat up the atmosphere are rising relentlessly, thus rapidly increasing the atmosphere concentration of CO_2 by 2 ppm a year. Further, two decades of Rio Earth Summit and despite countless publications, policy papers and recommendation of urgent remedial measures, the world failed to do the minimal requirement to prevent the earth from rapid heating up. Their failures are many and persistent. Secondly, world's public has very few instruments to influence national climate policies and extraordinarily complex international negotiations since 1992. Some of the upwind countries, viz, USA, UK and mainland European countries are net exporters of pollutants to the downwind countries of net importers of pollutants. However, upwind countries have little incentives for pollutants reductions. Furthers, some of the centrally located european countries, viz., Germany, Switzerland, and Austria have been willing to join the Scandinavian countries along with Canada in advocating international controls.

4.0 The Novelty of Green Economy Model

The new economic theme was put forward at Rio+20 in 2012 titled "Green Economy Path to Sustainable Development and Poverty Eradication" to find ways for a low Carbon Economic Model of Sustainable Development. All the countries pattern in the globe have experienced brown economic model and fossil fuel based energy consumption pattern in the past decades. However, brown economic model aims at development but not sustainable development, resulting in increasing land, water and atmospheric exploitation and therefore, there is resultant pollution (Kadekodi, 2013). The per capita CO_2 mission (in metric tonne/ per capita) for high income countries is nearly 4 times higher than that middle income countries and nearly 36 times higher than the low income group of countries. Therefore, the established EKC hypothesis (Kuznet, 1955) of inverted U shape was not proved correct for most of the developed countries in the globe (Barbier, 1997; Stern, 2004).

The development model used in past on its impediments and consequences. There are few concerned areas. First, irreversibility characteristic of natural capital, as a result of that increase in fuel price, food and commodity price, and consumer price index have taken place (Kadekodi, 2013). Second, unrecognized values of ecosystem services and non-existence of markers for them, leading to over exploitation of natural resources (Coase, 1960; Hardin, 1968; Friedman, 1971; Olson, 1971; Randall, 1973). Third, the world is running low on drinking water and productive land and hence the threat to food security. Four, due to loss in natural capital, multiple crises such as climate change, energy and food insecurity, financial meltdown, and increase in disasters, and social, political and ethnic conflicts are coming together making and the poor more vulnerable and less resilient. Five, cooperative institutional mechanism is vanishing. Six, more capital is poured into real estate and property, fossil fuels and structural financial assets but relatively little capital was in-vested in renewable energy, energy efficiency, public transportation, sustainable agriculture, ecosystem and biodiversity protection and land and water conservation, may not call it misallocation, but certainly not socially justifiable. Seven, excessive depletion and degradation of natural capital, which includes endowment of mountain natural resources and ecosystems (UNEP, 2011).

The concept of Green Economy model is introduced in the Rio+20 summit of UN Conference on Sustainable Development at Rio in 2012. The Rio+20 have recognized all the above problems in the past or present problem. It declared green economy should contribute to eradicating poverty as well as sustained economic growth, enhance social inclusion, improve human welfare and create opportunities for employment and decent work for all, while maintaining the healthy functioning of the Earth's ecosystems (UNO, 2012, p.10, paragraph 56). "The Future We Want" reaffirms all that is to be done in the years to come. The Green Economy model is portrayed as an opportunity to enhance ecosystem services, and enable growth and sustainable livelihood for the poor (Kadekodi, 2013). From the 1972 Earth Summit at Stockholm and the 1992 at Rio summit on Sustainable Development to the June 2012 at Rio+20 Conference, there has been a gradual evolution in global thinking about dealing with human, environmental and ecological problems.

With the history of development at the background, several new "drivers under a Green Economy Model" have to be designed. First, a new strategy on investment may have to be evolved that reduces carbon emissions and pollution, enhances energy and resource efficiency, and prevents the loss of biodiversity and ecosystem services. Second, a new avenue of creating a market for ecosystem services *The Future We Want* has taken some steps to incorporate the green model in some of its preparatory summit. First, reducing or eliminating environmentally harmful or perverse subsidies, creating markets for ecosystem goods and services; providing market based incentives, opportunities and enabling institutions through appropriate regulatory framework. Second, green public procurement and balance between the public and private investments, also sharing social responsibilities on environmental governance and regulations. Third, design of compelling/committing global interest, in investment at least 2 percent of global GDP in greeting the economy.

The challenges that are faced by the developing countries under the green economy model are numerous. First, developing world face large scale challenges for investment in the form of green economic model. Keeping reduction of carbon emission in mind, the potential investors look for investment opportunities in renewable and low-carbon energy in developing countries. This may be possible for the economy, where, (a) country is having high in carbon intensity and suffering from brown economic model, (b) country have all essential infrastructure, such as transport, communication and market to invest, (c) where the returns or turnover is higher. Second, the most challenging areas on establishing a system of payment for ecosystem services (PES) at the global level. This is not only a challenge in economics but also global-political and international relation arena. Third, the demographic dividend is not sure for accepting the green economic models in the developing world.

5.0 Summary and Conclusions

The extremes due to climate change is perceived as one of the most widely and arguably issues faced by humankind. In due course of time, there has been huge changes in the dynamics of two important issues. First, the dynamics of complex relationship was changed on scientific understanding on biosphere, politics, policies and economic fundamentals by IPCC on the one hand and the actions of the governments on the other hand. Second, the changing scenario of relationship between environmental and developmental models, which have been adopted by numerous countries. Under the changing scenarios, two outcomes have clearly emerged from the analysis of global climate change. First, the emission of GHGs, which heat up the atmosphere is rising, as a consequence of rising the concentration of CO_2. Therefore, this is aggressively disrupting the nature's cycles. As a result, the earth is hurtling towards endemic, spiraling, unending climate instability with melting ice caps and glaciers, rising sea levels and increasingly frequent erratic weather events. The world has failed to do the minimal necessary to prevent the earth from rapidly heating up even after two decades of first Earth Summit at Rio. Secondly, World's public has very few instruments to influence national climate policies and complex international negotiations since 1992. Therefore, the recently adopted green economic model (GEM) model can address the problem of brown economic model (BEM) provided the countries could able to (a) reduce or eliminate environmentally

harmful or perverse subsidies, creating markets for ecosystem goods and services; providing market based incentives, opportunities and enabling institutions through appropriate regulatory framework, (b) green public procurement and balance between the public and private investments, also sharing social responsibilities on environmental governance and regulations, (c) design of compelling/ committing global interest, in investment at least 2 percent of global GDP in greening the economy.

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