Assimilating Climate Change with Economic Development of Developing Countries: A Rejuvenated Assertion

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ABSTRACT

It is true that climate change is one of the serious challenges faced by the world today. The celebrated presence of a body of various dignitaries including intellectuals, political bosses, industrialists and environmentalists failed to combat the serious threat of climate change. The major challenge posed in climate change is the reduction of greenhouse gases. Nevertheless the deal to reduce these gases is torturous and time-consuming especially, for developing countries. Developing countries are in a double bind, burdened with growth trajectory by reducing their development deficits on the one hand, and on the other, to achieve growth targets within the constraints of traditional use of fossils. In the United Nations Framework Convention on Climate Change, participating countries overwhelmingly reached an agreement to reduce the carbon emission. But the key issue in the global climate change negotiations is the share of global economic burden of climate action, relatively between the developed and developing countries. The reduction of carbon emission requires a strong policy commitment and vast investment in the green economy. Highly efficient, emission saving technologies could be implemented in these countries but with a question to bring these technologies in these countries as these lack financial means to invest. The successful implementation of these technologies results in reduction in emission level, energy saving and job creation. Meanwhile, the views of climate expert’s highlights that the damages of climate change will disproportionately fall on the developing countries particularly the poor countries which are most vulnerable and least able to adopt. These damages inhibit the economic development of the developing countries. The developed nations have indicated their long term goals to mitigate climate change whereas the developing countries with the exception of China have only short term goals to achieve. This paper deals firmly with the key question of economic inequities in providing the basic amenities, public health and investing in facilitating technology transfer and knowledge sharing by the developing countries.

KEY WORDS: climate change, developing countries, economy, mitigation

PROLOUGE

Climate change is defined as the prolonged modifications in earth’s climate due to natural, mechanical and anthropological processes which results in the excess emission of greenhouse gases like CO2, methane etc. these gases accumulate in the stratosphere and entrap the heat within the atmosphere causing global warming and changing climatic patterns. Climate change is a threat not just to the environment but also to the growth and development of the country. The current assessments suggest that loss to human welfare from climate change is greater than the cost to mitigate the risk. The ‘growth cost’ of the measures to deal with this large problem is meager and hence requires speedy action. With regard to the climate change, developing countries has tough tight rope walking before them. The temperatures is poised to rise by 2.5 to 5 degrees Celsius over the century, consequently affecting the monsoon patterns, rise in the sea level this on the other hand, will cause the problems of food security, water scarcity, livelihood and health. To balance this there are imperatives of sustaining a high economic growth as a prerequisite to poverty alleviation, and the need to raise per capita energy consumption to provide acceptable level of well being. Developing countries are taking steps both inward and outward in its efforts to balance the economic development with the climate changes measures but often dealing with the contradictory concerns. These steps are reflected in the
comprehensive domestic agenda, especially, India for mitigating the climate change, for instance, aiming to cut the emission intensity of GDP by 20-25% of the 2005 level by 2020.

OBJECTIVE

The paper aims to deal with the two problems of twenty first century which are popping up to dominate the economic policy along with societal factors. First is the global climate change and second is the differences between developed and developing countries to mitigate the climate change creating impediments in the economic growth of the developing countries and the poor countries. Both these are problem are acute in developing countries due to their fragile environment and varied cultural and economic conditions. Economists are skeptical to deal with these issues due to the uncertainty and irreversibility of the issue. The paper focuses more on the adaptation of the climate change on the economic front rather than on the mitigation strategies. It’s a rejuvenated approach as it focuses on the adaptation strategies enforced by the developing countries and not just stressed on the mitigation strategies.

REVIEW OF LITERATURE

Climate change and Economic development: SEA Regional Modeling and Analysis, Senderson and Islam, Palgrave Publication, 2007

Focusing on S.E. Asia, the economics of climate change and the relationship between climate change and economic development, this book examines the region's vulnerability to the impact of climate change, forecasts environmental and economic outcomes and opportunities these factors provide for policy actions towards alleviating this vulnerability.

CLIMATE CHANGE : IMPACT, VULNERABILITIES AND ADAPTATION, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE

The United Nations Framework Convention on Climate Change (UNFCCC) secretariat has published this book to highlight the concerns and needs of developing countries in adapting to the effects of climate change. It outlines the impact of climate change in four developing country regions: Africa, Asia, Latin America and small island developing States and studies the vulnerability of these regions to future climate change.

Economic Development, Climate Change, and the Environment, Ajit Sinha and Siddhartha Mitra, Routledge India

This book examines the problem of environmental degradation and its relationship with economic development.

METHODOLGY

The contribution of this nascent research to the existent literature is fundamental in two respects:

• The research provides underpinning principles about how to involve conceptually the policies designed for climate change with practical thrust.
• It paves way for further research so as to generate data and information that might be crucial for adopting innovations
  The topic of research is not new in its origin and its extraction is based on the availability of the secondary data collected from various sources

NEW DIMENSIONS IN THE DEVELOPMENT OF ECONOMICS

Till late 1990s the economists focus the economic models of development dealing with the increasing per capita income. Nussbaum in 2000 emphasized on ‘distributive justice’ which focused on creating the conditions suitable to develop human capabilities. This model of Nussbaum not just focused on the national income but also calculated the magnitude of the well being of the poor nations.
improving their lives. The economic development is prominently understood by population, human capital, social capital, resource endowment, technology, institutions and political economy. Climate change has been an important additional dimension to understand the nature of development and its impact. The adverse consequences of climate change and the science dealing with it and an approachable consensus reached among scientists in the past decade stressed on the impact of climate change on economics of any country. Climate change poses a severe risk to global economic stability,” said World Bank Group president Jim Yong Kim in a news release, adding, “We believe it’s possible to reduce emissions and deliver jobs and economic opportunity, while also cutting health care and energy costs.” With focus on well being, individual happiness and the self actualization, the developing world may improve welfare of the human without contending the environmentally destructive consumption patterns that drove economic growth in the past in the developed economies.

The relationship between the economic development and the environment is critical. In the developing countries except China the state of environment is deteriorating. Land, forests and pastureland are degraded due to long term misuse. The changing realities of the global climate change have compelled the economists to re-think basic assumptions embedded in the traditional economic framework.

MENANCES OF CLIMATE CHANGE

India is a large developing country of sub-continental proportions – home to 1.1 billion people or 17% of the world’s population. A large proportion of this population continues to live in rural areas and depends heavily on climate sensitivity sectors such as agriculture, fisheries and forestry its livelihood. With rapid economic growth, however, the demands for goods, services and energy has soared and large shortfalls are emerging. If humanity along with the flora and fauna has to survive on this planet earth, all nations developed or developing must make sincere endeavor to climate change. The change in climate causes much deterioration on the economic front. The growth cost at the cost of climate requires speedy actions. The factors leading towards climate change may be natural, mechanical and anthropogenic. With regard to climate change, developing countries has tough tight rope walking before them. The major factors leading towards climate change are

- use of traditional resources like fossil fuels, coal etc
- deforestation
- bifurcated land use,
- ozone gas,
- industrial revolution
- Population explosion.

Climate change will make monsoon unpredictable. As a result, rain fed wheat cultivation in South Asia will suffer in a big way. Total cereal production will go down. The crop yield per hectare will be hit badly, causing food insecurity and loss of livelihood.

ECONOMIC DEVELOPMENT: A CONCEPT

Today the term economic development not just deals by the increase in per capita income (as in late 1990s) but it focuses on distributive justice, which means creating conditions which are suitable for the development of the human potentialities and capabilities. The economic development is prominently understood by population, human capital, social capital, resource endowments, technology and political economy. However, the relationship of economic development and the environment is critical and scientists and economists still believe that any step taken in this area is irreversible and uncertain. The three arrows or brahmastras of the developing countries are agriculture, labour intensive manufacturing and fiscal restructuring. The destruction in these areas due to climate change would leave the economy in despair.
IMPACT OF CLIMATE CHANGE ON INDIAN ECONOMY

Substantial economic impacts from climate change in India can be expected to occur given the current low levels of adaptive capacity, the country’s geographical location, large numbers dependent on natural resources based livelihoods, and impacts on agriculture. The foremost and destructive changes are witnessed in the agricultural sector which provides employment to vast population. Indian economy is agricultural based and large destruction in this sector will leave large section of people poor and unemployed. At domestic level, it will increase imports and reduce exports leaving the economy lingering.

The three key risks identified for Asia, include increased flood damage to infrastructure, livelihoods and settlements, heat related human mortality and increased drought related food and water storage (IPCC ARC 2014). The hurricanes, natural disasters cause large damage to infrastructure, health, loss to retailers in warehousing, loss in tourism etc. as per the current understanding of the climate related risks, the likely impacts from climate change will have adverse impacts on the growth and development of the Indian economy in a manner that’s cut across sectors and region of India. Considering flood risks and associated losses, India is among the top 20 countries most at risks from extreme events, and could experience an 80 percent increase in population at risk from sea level by 2050, with Kolkata and Mumbai as the two major cities facing risks to population and assts.

INTERNATIONAL NEGOTIATIONS AND ITS IMPACT ON DEVELOPING COUNTRIES

In the recent international negotiations conducted under the UNFCC, the industrialized countries have called upon developing countries to contribute to the global effort to address climate change. Kyoto protocol was signed by the parties to UNFCCC in 1997 to agree on quantified and specific emission reduction targets for each of the 37 industrialized countries that are listed in Annex-I of the convention. The starting point for a fair and equitable agreement in the climate change negotiations is, therefore, the acceptance by developed countries of the principle of per capita equity, and their undertaking to make credible cuts in GHG emissions of 25-40% by 2020 over 1990 reference levels. With formalization of UNFCCC and Convention on Biological Diversity, a global strategy of saving mankind from the threats of unsustainability arising from the changing climate and loss of biodiversity was laid out and new global environment development funding mechanisms like Global Environmental Facility established.

Global partnerships aim for capitalizing on the opportunities of cooperation for ground actions to the benefit of all. UN-REDD programme is one such programme providing a new opportunity of income to people in developing countries by conserving their forests and switching over to land uses with high carbon stocks; developed countries paying for carbon conserved and sequestered by people in developing countries. As climate change has large impact on both developed and developing countries, it has become the crucial agenda of international relations and the convergence point of social, economic and environmental developmental goals.

INDIA’S STAND ON CLIMATE CHANGE

The then Prime Minister Manmohan Singh has stated that India’s per capita emission levels will never exceed that of the per capita emission levels of the developed countries. India cannot and will not take emission reduction targets because:

- Poverty reduction and social and economic development are the first and over riding priorities.
- Each human being has equal right to global atmospheric resources, that is, principle of equality.
- “common but differentiated responsibility is the basis of all climate change actions”.

But India will continue to be a low carbon economy, according to the study of World Bank and its primary focus is on “adaptation” with specific mitigation. India has already unveiled a comprehensive National Action Plan on Climate change who’s activities are in public domain. The country has
already made nine submissions to UNFCCC and one of which is financial architecture for climate change. India’s co2 emission is well below the world’s average around 1.6 metric tonnes but it is third largest emitter after US and China and ranks 135th, standing alone with poor countries amongst developing countries.

India has submitted its Intended Nationally Determined Contributions to the UNFCCC in Conference of Parties 21 which was held in Paris in December 2015. These goals are intended to install 175 gigawatts of renewable power capacity by 2022 and to reduce its emission intensity per unit GDP by 33 to 35%. To achieve these goals steps are already taken for example, establishment of Ocean Thermal Energy Conversion plant in Kerela, establishment of wind and solar power plant in Jaisalmer etc..

UNFCCC divided the world in to industrialized economy and developing economy. The former are agreed to their non-binding commitment to reduce emissions of co2 and other green house gases and most of them failed to achieve their goals, due to an urge to retain their economy the most powerful one. This was followed by Kyoto protocol, adopted in Japan by UNFCCC. The developing countries does not have any obligation under said protocol and hence follows the path of economic development to gain the status of economic power nations, but diluting the happiness at the cost of healthy environment.

**MITIGATION STRATEGIES**

Today we face two major global ecological crisis, first the climate change and second is the extinction of flora and fauna. Consequently endangering the survival of the human being and fading the concept of well being. If no proactive mitigation steps are taken on time, we may experience upto 4degree increase in temperature by 21st century. Few strategies are

- **CARBON SEQUESTRATION:** also referred as carbon capture and storage. It is to capture co2 at power stations, industrial sites or even directly from air. It is helpful in increasing the forest cover and practically advances social and economic development
- **CARBON SINK:** use of blue and green carbon obtained from removal of carbon by photosynthesis and stored in the plant and natural ecosystem and carbon obtained from marine and coastal regions.
- **CARBON CREDIT:** it is a tradable certificate or permit representing the right to emit one tone of carbon or co2. It helps in reduction of green house gases and developing countries can use them to set up technology which is eco friendly. India and China are likely to emerge as the biggest sellers in this field.
- **CARBON TAX:** it is the potential alternative to the ‘cap and trade, method which is currently used by protocol. It is based on the amount of carbon contained in fuel such as coal. The aim of this tax is to cause less fossil fuel use.

However India will bring a WTO challenge against any Carbon taxes that rich countries impose on India’s imports.

**EPILOUGE AND ADVISORIES**

The frigidity of masses towards the disastrous effect of climate change makes the problem more despotic in nature. The paralyzed climate requires limited efforts not only at global compendium but also on domestic grounds accommodating people’s participation. Reorientation of thoughts by organizing awareness campaign can be positive steps involving schools, NGOs and voluntary organizations

- Gram sabha could be the forum to educate the village community or prescribe the code for collective action. Green army is active in Madhya Pradesh to make people aware.
- Proactive health adaptation strategies such as improved efficiency of the water supply management or improved health, educational and institutional capacities.
Regulatory, physical, competitive and reputational exposure requires transformation in industries to deal with climate change.

Reduction in e-waste as it does not create visible mountains but is very complex, non-biodegradable and toxic waste.

The climate change and terrorism are the two major threats faced globally and causes large destruction to economy of our country. Conventional and tool box approaches are inadequate to deal with these issues. Both requires global actions based on the cooperation and coordination of all the stakeholders. The climate change crisis is surmountable which if reaches the threshold not only threatens the present generations but also the future of entire humanity. The causes and effects of the climate change are not only confined to the national boundaries but is cross cultural and cross national. As said by Gandhi ji “there is enough to everybody’s need and not everybody’s greed. There is need to change lifestyle and consumption pattern at each stage to preserve earth and its climate.

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