Climate Change: The Biggest Challenge in 21st Century

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Abstract Climate change is the biggest challenge for the mankind in the present century. The world is speeding towards a climate catastrophe. Our foot is stuck on the accelerator and we are heading towards an abyss. It has far reaching effects, consequences and implication for entire globe in general and developing countries in particular. If sincere efforts are not made on war footing, then the life would become hell on this planet. These days, seasons are changing, temperature is rising of both earth and seawater and there is no end to it. The globe is entering in era wherein the environment would get intertwined in a spiral of decline and degradation affecting the availability and access to water, food, and energy in a big way. According to a study, world over people would consume 10 per cent more water per year than nature could replenish. Increase in global warming has been melting glaciers and receding snowlines. Accordingly, seventy rivers have stopped flowing into the sea and as a result, aquifers are depleting. Our foot is stuck on the accelerator and we are heading towards an abyss. It has far reaching effects, consequences and implication for entire globe in general and developing countries in particular. If sincere efforts are not made on war footing, then the life would become hell on this planet. These days, seasons are changing, temperature is rising of both earth and seawater and there is no end to it. Hence, it is high time that globe as a whole must come forward to formulate a collective strategy for meeting or facing the biggest challenge of 21st century. Both developed and developing nations are sailing in the same boat. Both must take lesson from Japanese disaster. Hence, it is high time that globe as a whole must come forward to formulate a collective strategy for meeting or facing the biggest challenge of 21st century.

Key words: global warming, temperature, phytoplankton, rivers, century,

Introduction

The climate change has been creating a hell on the landscape of the earth. The most unfortunate thing has been that major global players are not taking the issue more seriously and developing economies are also helpless because of the attitude and approach of the developed economies. The following are the three cases to have a lesson from them and become more serious in tackling the most dangerous and killing thing which is on the rise on this earth.

Disastrous Effects

Case 1: Normally, after an animal dies, energy reserves-in the form of 'glycogen'-are broken down into lactic acid.TOI However, heat stressed pork acidifies more quickly. When, this happens, muscle proteins fall apart, and so does the meat's structure, rendering it soggy and bland.

Veterinary scientists have pointed out that the world warms; slabs of meat will lose their juiciness, and become soggier, blander, leaner, darker and more prone to spoilage. According to a recent report 'this is all because the quality of meat depends upon whether or not animals experience heat stress during transport to abattoir. Cattle begin to suffer heat stress at 20 degrees Celsius, pigs at 31 degrees Celsius's The most noteworthy thing every one would be sure that cattle and pigs are experiencing those harmful temperatures more often with climate change. Gregory

An UK's veterinary scientist has spent over a decade studying how meat quality varies with the temperature at which farm animals are kept. According to him "unless farmers take protective steps, global warming will make pork soggier and paler and causing the carcass pH to fall from 7.0 to 5.5. What you are left with is meat that resembles soggy white blotting paper. Heat-stressed pork tends to be sold at a lower price than premium meat, as because meat, as because it is not what people expect on their plates.FRI But in

warmer future, soggy pork chops could become standard. As for beef, it would taste blander and look darker, almost mahogany, or umber, and in the worst case black.

Heat-stressed cows run out of glycogen before they die, and as a result produce very little lactic acid after death. As with pork, the pH of beef drops, but because there is less lactic acid in beef than pork, it stalls at 6.3. At this higher pH, proteins retain water, which prevents oxygen from penetrating the meat. This causes the meat's pigment to default to its darker, oxygen-free state having far reaching impact on the human beings who are the consumer of such meat.

Case II: Climate change making cassava toxic. Cassava, the staple of 750 million impoverished people in Africa, Asia and Latin America, is turning more toxic with much smaller yields and this is due to global warming and carbon levels.Gleadow A Australian researcher tested cassava and sorghum under a series of climate change scenario to study the effect on plant nutritional quality and yield.TOI

Cassava and sorghum i.e. both the species belong to a group of plants that produce chemicals called gynogenic glycosides which break down to release lethal cyanide gas if the leaves are crushed or chewed. The Australian researcher grew cassava and sorghum at three different levels of CO2, just below today's current atmospheric levels at 360 parts per million (ppm), at 550 ppm and double at 710 ppm. Current levels in the air are approximately 390 ppm. What the researcher found was the amount of cyanide relative to the amount of protein increased.

Case III: Today, it is being said that we are shrinking because of global warming.HT This is true you may not be able to tell, but fact is that we are shrinking. Not just human beings, but all living beings ranging from the invisible phytoplankton to giraffes. All of us are growing shorter because of warming brought on by climate change. Not you and me actually, but us as a human race, as living beings. The shrinking is happening over generation, not in lifetime.Due to global warming the temperatures rising, organisms get smaller; from the scale of whole communities down to the individual.NAS The areas with warmer climates tend to be dominated by smaller-sized species is known.Daufresen

According to Mr. Martin, we used long-term survey to study essentially aquatic communities of phytoplankton and fish (of all kinds' large rivers, streams, and salt water). The scientists found that these communities did indeed get smaller in size as temperatures rose in their environments over time. For communities of fish in large French rivers, the team leader observed "a decrease on an average of something like more than 60 per cent of the mean size at the community scale over two decades".Martin

Another Danger

Science could not tell or suggest politicians or legislators what to do; it can only give information. Therefore, it is up to the politicians or legislators to take logical or sensible decisions. Recently, a professor teaching at a university in Denmark, Katherine has pointed out a very serious issue relating to global warming and climate change that "surface ocean temperature are rising 50 per cent faster than realized at the last International Panel on Climate Change (IPCC) report".TOI According to the IPCC, it is happening too quickly for evolution to firefight it. Some species might learn to cope but most will not. The oceans would soon reach a tipping point when they would no longer be able to support life. You would not take a flight that has only a 10 per cent chance of reaching its destination. Yet the human beings remain inactive even when the IPCC report tells that there is only a 10 per cent chance that climate change was not due to human activity, but that there is a 90 per cent chance that it is. The ocean covers two-thirds of the planet's surface and contains 71 per cent of all water. Yet human beings have only one-tenth of nature reserves in oceans of what is available on the earth namely the Great Barrier Reef and some of the coasts of Kenya, Malaysia and South America. It is undisputed fact that ocean species are less important than those on the earth. Human beings should not forget all life began in the oceans. To build resilience in bio-systems the people have to realize or consider increasing nature reserves in oceans. It is really the smaller organism in the oceans that are more significant; these produce calcium carbonate and help absorb carbon dioxide. The oceans are full of really

tiny organisms. The plants in the ocean are older in terms of evolution; so these are more significant. But just 4 per cent of oceanic plants like plankton and algae are visible.

The ocean has a warm surface layer and a cold layer beneath that human beings need to sink carbon to the bottom of the bottom layer or into the seabed. There is biological mechanism when CO2 sinks with plants. With iron fertilization, you stimulate plant growth, but would it go all the way down. Not sure, because fish eat up the plants before these could sink to the bottom. A lot of material gets degraded on the surface instead of sinking to the bottom; so these end up releasing more CO2. We are in mess, all right. We need to do whatever we can, should be play God and Engineer bio-systems? May be yes, to restore them to their original state is essential. What are our chances of survival? This all would depend on how soon politicians or legislators and others take action. Representatives of 20 nations and the European Union called Friday on the air and maritime industries to ac on global warming and address carbon emissions from the the unregulated sector by year-end. Transport ministers and envoys from the nations, including the Group of Eight major economies, held two days of talks in Tokyo as part of efforts to meet a goal of drafting a new climate change treaty by December. In a joint statement, the nations said that while transport was "an important foundation of our society" it was responsible for "considerable emissions of carbon dioxide," affecting the climate and public health. "Urgent actions are required to address these issues while ensuring sustainable development," the statement said. They called on the International Maritime Organization to "deliver a package of appropriate mechanisms for reducing emissions, preferably by the end of 2009." The countries also said they would support the International Civil Aviation Organization (ICAO) to come up with technology, standards and market-based measures by the end of the year to reduce greenhouse gas emissions. The aviation industry group had agreed in 2007 to come up with ways to reduce the environmental impact of airplanes. But ICAO chief Roberto Kobeh Gonzalez, speaking afterwards to reporters, said he did not expect moves to slap a carbon tax on airlines to force them to curb emissions. The transport industry has been badly hit by the global economic crisis, with fewer people taking to the air, shipping merchandise or buying new cars. Antonio Tajani, the European commissioner for transport, said the Tokyo declaration was "a very important signal of our common strategy for sustainable development." "We have to build a type of economic growth that does not put at risk health or the environment," Tajani told AFP. Transport accounts for some 23 percent of carbon emissions blamed for global warming, more than any other sector other than electricity generation and indoor heating, according to the International Energy Agency. Nations have been imposing stricter standards on automobile emissions. But the Kyoto Protocol makes no demands of the airline and shipping industries due to their international nature. A conference in December in Copenhagen is set to approve a new climate treaty for the period after 2012, when Kyoto's obligations on emission cuts expire. The Tokyo conference included ministers or officials from the Group of Eight and the 10-member Association of Southeast Asian Nations, along with Australia, India and South Korea. China was invited but did not come, while ASEAN member Malaysia took part as an observer as a senior official could not attend. Japan's transport minister, Kazuyoshi Kaneko, said it was "regrettable" that China did not take part but said its absence "did not prevent a fruitful discussion." Asked why China did not attend, Kaneko said Beijing "had wanted for there to be more consideration for developing countries." China, which by some estimates has surpassed the United States as the world's top polluter, last week unveiled a major bailout for its troubled aviation industry.YAN

Major Risks to Business

Climate change or global warming may create three vital types of risks to businesses which are as under: Pachauri

1) Physical risks;
2) Operational risks; and
3) Regulatory risks.

Physical risks is perceived to have direct bearing or impact on those things that are vulnerable to extreme weather events namely- droughts, floods and rising Sea level. On the other side of it, operational risks deals with the availability of natural resources like fuel, water and land which are becoming more vulnerable to the bearing impacts of climate change. Hence, the paucity of such resources may lead to high energy costs affecting the degree of economic growth and development of an economy in a big way particularly in respect of developing or least developing economies. Regulatory risks consist of future regulations and policies which the regulators and Government bodies' world over may enforce to face the rising challenges of climate change or global warming. Both developing economies especially emerging economies like India (India's National Action Plan on Climate Change) have put down the needed basis for formulation a climate change regulations which would affect GHG emission intensive industries/units in their respective economies. Similarly, developed nations have also imposing carbon tax and permit systems on those economies that are exporting emission intensive goods to developed nations. International bodies namely- World Steel Association (WSA), Cement Sustainable Initiative (CSI) and Carbon Disclosure Project (CDP) have started putting considerable pressure on units to disclose their respective degree of risks and GHG managing plan, policies, programs and procedures.

Other Side of Climate Change

The concern of climate change or global warming is under dispersal on a rapid rate in the fastest growing area of global business. This is not only a major problem, but has come up as an opportunity to businesses all over the world. Better reputation among customers, investors, operation efficiency and employee motivation are some of the benefits and opportunities coming up from climate change management plans. These benefits and opportunities may lead to rise in shareholders and the most vital component i.e. market value of businesses. Most significantly, there are a lot of opportunities in newly emerging businesses namely clean technology and trading of certified emission reduction (CER) and verified emission reduction (VER).[FE]
Some of the newly emerging business opportunities coming out from the climate change are as follows:
1) Employing CDM to generate CERs/VERs;
2) Carbon trading;
3) Green buildings;
4) Clean technologies;
5) Improvement in energy efficiency; and
6) Construction and building retrofit.

Green Business Survey

The major features of Green Business Survey that are being considered as a silver lining are as under:
a) Most firms world over are becoming more aware in respect of climate change;
b) Climate change or global warming would have a direct impact on global business;
c) Climate change risk perception and opportunities vary significantly;
d) Taking measures to mitigate climate change is good for reputation and shareholder value;
e) Firms world wide are undertaking strategic and inevitable changes in their respective businesses to tackle the rising climate risks;
f) Clean-tech is the best and fore most opportunity;
g) Executive managements exert the highest pressure in risk management;
h) Clear cut policies; programs; procedures, practices have to be laid down by the Governments of every country; and
i) Governments world over must extend necessary incentives to meet the rising challenges of climate change or global warming.[FE]

Silver Lining

The most noteworthy silver lining is that the countries, states, cities and companies that have taken step is that smart policy choices not only cutting pollution but also lead to economic savings and growth and the creation of a new energy future. The results of steps undertaken by leaders of major players' nations demonstrate the potential for significant net economic savings from new steps to bring desired improvement in energy efficiency and conservation.

New investments in clean and renewable energy could result into more employment, income, and local investment than conventional approaches. And steps to protect and conserve natural resources and create advanced technologies and industrial practices can provide significant co-benefits and opportunities for every nation's environment, energy future, and economy. Many nations' leaders view climate policies and programs as an increasingly desirable technique for engineering state of economic development.

Recent Development

Representatives of 20 nations and the European Union called Friday on the air and maritime industries to act on climate change or global warming and address carbon emissions from the unregulated sector by year-end. Transport ministers and envoys from the nations, including the Group of Eight major economies, held two days of talks in Tokyo as part of efforts to meet a goal of drafting a new climate change treaty by December. In a joint statement, the nations said that while transport was "an important foundation of our society" it was responsible for "considerable emissions of carbon dioxide," affecting the climate and public health. "Urgent actions are required to address these issues while ensuring sustainable development," the statement said. They called on the International Maritime Organization to "deliver a package of appropriate mechanisms for reducing emissions, preferably by the end of 2009." The countries also said they would support the International Civil Aviation Organization (ICAO) to come up with technology, standards and market-based measures by the end of the year to reduce greenhouse gas emissions. The aviation industry group had agreed in 2007 to come up with ways to reduce the environmental impact of airplanes. But ICAO chief Roberto Kobe Gonzalez, speaking afterwards to reporters, said he did not expect moves to slap a carbon tax on airlines to force them to curb emissions. The transport industry has been badly hit by the global economic crisis, with fewer people taking to the air, shipping merchandise or buying new cars.

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A Sense of Fear

The most serious crisis of all crises is the climate change or global warming. The globes can "reserves poverty but not global warming or climate change". Once it's off the charts, it's off the charts. It is going to make the lives of poor people unbearable in large swathes of the world. This process is happening faster than scientists had predicted. The world community has not even begun to measure the impacts and consequences of climate change or global warming in reality.[12] What ever measures are being taken they are more based on myth not reality.

Chaleenge For India

India is a low latitude tropical nation, and hence, greatly exposed to the effects and consequences of temperature rise. Weather variability, a major problem on growth and welfare of the country, would rise with global warming. Increase in temperature in the Tibetan Plateau, the Hindu Kush and Himalayas would affect the volume and timing of river flows in North India and may well become a security issue that rolls relations in South Asia far more than anything so far. Estimated prescription changes would also lead to increase the variability of water availability in peninsular India. Increase in sea level would directly affect all the costal areas as well as settlements. The Ganges and Brahmaputra delta has been enlisted as an exceptionally exposed area by the Intergovernmental Panel of Climate Change (IPCC).An early sign of the potential impact can already be observed in the Sunder bans and in Bangladesh and India faces a very serious possibility of climate migration.[Deasi]

1. Keeping in mind the above mentioned trends and situation; it is in India's national interest to come forward and to seek an immediate global commitment to limit the risk of temperature increase as much as possible. There is a saying that Indian negotiators agreed to the 2oC goal at the MEF meeting reluctantly and would have preferred silence. This is inexplicable. India should have been in the lead and must be demanding the said goal as a minimum.[TOI]
2. Today, India has to require two inferential measures to move out from the issue of temperature to the issue of emission caps. Firstly, to examine the existing level of ambient green-house gases (GHGs) which is consistent with the world temperature issue. Secondly, to explore and spell out the world emission issue which would contain ambient GHGs to the needed level. On the existing basis of Science, it will come up that at 2oC issue implies a limit of 450pmm on GHG concentration in the atmosphere and this would lead to have at least a halving of global emissions by the ends of 2050.[Deasi] This conclusion may be the basis for the fear expressed that the acceptance of the temperature issue implies a commitment to take on obligations in terms of emission caps. But individual nation caps need a further political step regarding how the burden of effort would be distributed. On that, India has not given away anything and feeling more comfortable. India's demand for climate change remains on the table and is becoming more strengthened by the acceptance of 2oC issue. This more true that without an agreed global goal, the space available for sharing can not be defined and talk of climate justice make a little sense. Ban, who this week visited the Arctic to witness first hand the changes brought by global warming, warned that many of the "more distant scenarios" predicted by scientists were "happening now." Scientists have been accused for years of scaremongering. But the real scaremongers are those who say we cannot afford climate action -- that it will hold back economic growth." They are wrong. Climate change could spell widespread disaster.[APF]Visibly sobered by his Arctic visit; Ban warned that rising sea levels, partly generated by melting ice, would threaten major cities and potentially up to 130 million people. The melting was also triggering a rush for natural resources in the Arctic, "altering the geopolitical landscape," not just the environment. He urged action on the key areas of the Copenhagen negotiations that are raven by disagreements between rich, emerging and poor nations. They include

measures to adapt to climate change and "fast-track funding" to help the most vulnerable and developing countries.[UNC]

Un Concern

The developed countries should continue to take the lead in undertaking quantified emission reductions commitments, and the developing countries should make contributions as their ability permits. In India, a government-backed report pointed out that the country's per capita greenhouse gas emissions were expected to nearly triple in the next two decades. With its massive population, India is one of the top polluters in the world. It is also among countries that have long rejected binding carbon emission targets on the grounds that they would hinder economic development. The largely technical World Conference on Climate Change in Geneva approved the first steps in setting up a new global framework to share climate information and develop better long-term weather forecasting.

Common Strategy

Keeping in mind the unbearable and unimaginable effects, consequences and implications, the two emerging economies namely-India and China have come forward to evolve a common stand and strategy for meeting the biggest challenge of 21st century.

India and China have agreed in principle to jointly fight any attempt by West and North economies in respect of issues relating to global warming. There is total convergence of views between India and China on climate change. India and China have agreed to coordinate their views on different aspects of climate change before every major international meeting on the subject. Both India and China want to negotiate with West and North economies for higher levels of financial assistance and technology transfer in return for promises to their best to tackle environmental problems and issues. China remains committed to principal of common but differentiated responsibilities of developed and developing economies.

Both the nations (India and China) have also agreed that both the countries will not agree to any legal binding on reducing emission norms because, the same would come in the way of their respective development policies and plans. Both the countries would also not agree to the creation of any trade barriers on the excuse of climate change.[TOI]

US vs EU

US, EU poles apart on climate negotiations. EU is not happy with American decision to keep aside the Kyoto Protocol. Europe as whole has confronted with the US in regard to view point on climate change in a potentially damaging split that comes ahead of crucial political negotiations on a new global deal to regulate and control greenhouse gas emissions.

The major difference that has come out between the US and the EU is the structure of a new worldwide treaty on global warming. According to the Europe view point the US approach could undermine the new treaty and may also weaken the global ability to cut carbon emissions. The treaty would be discussed and negotiated in coming December i.e. December 2009 at a UN meeting in Copenhagen.[HT]

The emerging confrontation between the EU and the US putting more pressure on the success of the Copenhagen meeting in coming December (2009) and may affect the necessary progress in regard to global warming efforts.

The main dispute between the EU and the US is in respect of the way national carbon reduction targets would be considered and counted. Europe has been pushing to retain structures and systems set up under Kyoto Protocol signed in Japan, the existing global treaty on climate change and warming. The negotiators from the US have communicated to the Europe negotiators that their country (USA) intends to sweep away

almost all the structures and systems created under Kyoto Protocol and the same would be replaced with a new structure and system of its own design.

The above mentioned issue is of critical, strategic and most sensitive and hence, negotiators from Europe are much reluctant to accept it and show any open criticism on it. They have a sense of fear in their minds that the US move may make efforts in fractious to agree a robust new treaty in Copenhagen.

The US has distanced itself from Kyoto Protocol under the administration of President Bush as the same made no demands on China, and the treaty remained political poison in Washington. European officials were knowing that the US would be reluctant to embrace Kyoto Protocol, but they were hoping that they will be able to use it as a foundation for a new agreement which the need of the hour.

The most serious and sensitive issue is that if Kyoto Protocol is replaced by new structure and system, it would take many more years to deliberate, negotiate and finalized a new framework. Negotiators from other regions and countries believe that Europe is unlikely to stand up to the US.

Under the existing Kyoto Protocol, greenhouse gas reductions are subject to an international system that regulates and controls the essential calculation of emissions, the purchase of carbon credits and contribution of sectors such as forestry. The US is pushing instead for each country to set its own rules.

How do we Get from Kyoto to Copenhagen?

Environmental Ministers from 190 countries are going to be gathered in the Danish capital at the end of the year 2009. The aim is to build on the existing Kyoto Protocol by ensuring developed economies sign up to deeper emissions cuts while offering greater assistance to developing nations to help them curb greenhouse gas pollution.

What to Expect?

Expect developed countries to make deeper emissions cuts by 2020 than under the current Kyoto Protocol. Also, expect improved funding mechanisms to pay for climate

change adaptation and mitigation in poor economies, more effective transfer of affordable clean-energy technology and formal support for a scheme to pay developing nations to preserve rainforests in return for carbon credits or other incentives. Do not expect developing economies to agree to legally binding emissions cuts?

What is Kyoto Protocol?

The Kyoto Protocol is an international '**environmental treaty**' signed among the countries aimed at reducing the emission of greenhouse gases into the atmosphere. More than 180 nations have ratified the treaty. Only 37 industrialized, however, have agreed to targets to reduce emissions by 2008-12, under a principle that developed economies are mostly to blame. The targets range from an 8 per cent cut from 1990 levels for the European Union to 10 per cent rise for Iceland. The US, long the world's biggest source of emissions, but now surpassed by China, came out against the pact in 2001.[HT]

What Next?

Two more rounds of formal negotiations are scheduled before the December 7-18 in Copenhagen; September 28 to October 9 in Bangkok; and November 2-6 2009 in Barcelona. In addition, G20 leaders meet in Pittsburg to discuss how developed economies could fund steps by poor nations to deal with climate change.

G-20 Meet

The outcome of G-20 meeting would help, guide negotiations during the two-week Bangkok, wherein more than 2000 delegates would be trying hard to shorten a draft negotiating text that would lay out broader global actions to fight change from 2013. The document would replace the Kyoto Protocol.

Why do we Care?

Mankind has added enough greenhouse gases in the atmosphere to raise temperature to a dangerous level and emissions are set to keep rising, particularly from poorer economies for at least the short-term. We are already committed to what scientists believe would be serious impacts from rising temperatures such as more floods, droughts, heat waves and rising seas.

Global temperatures may be 4oC hotter by the mid-2050, if current greenhouse gas emissions trends continue. According to a UN Report 'climate changes were outpacing worst-case scenario forecast in 2007 by the UN's Intergovernmental Panel on Climate Change (IPCC)'.MO In the words of another study ' results are showing similar patterns (to the IPCC) but also show the possibility that more extreme changes can happen'.Heming

A global average increase of 4 degrees masked higher regional rise, including more than 15 degrees warmer temperature in parts of the Arctic; and up to 10 degrees higher in Western and Southern Africa. Rainfall may fall this Century by a 5th or more in parts of Africa, Central America, the Mediterranean, and coastal Australia, potentially more extreme than the IPCC finding released in 2007.TOI

Cost of Climate Change

How much money is needed the most pertinent question that is a matter of concern for developed and developing nations. According to an estimate, the total cost involved into facing the chronic issue of climate change is US $ 1.1 trillion. The classification of cost for different components of climate change is given in table I.

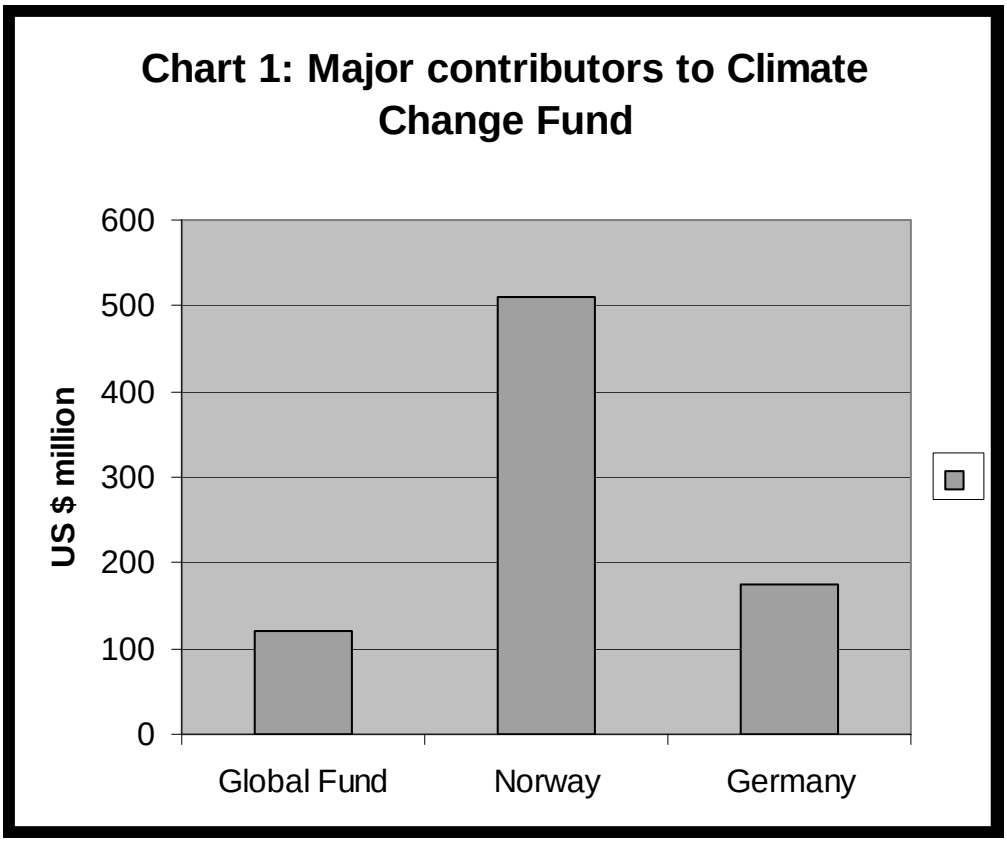
Table 1. Money needed for different components of climate change 2010 to 2050

Reduced to after fuel, efficiency savings	US $ 53 billion
By 2030 for early weather warnings, flood prevention	US $ 100-150 billion
Climate funds rich should pay developing countries by 2020	US 147 billion

Source: Reuters.

Contribution of Funds by Different Sources

Funds already available for meeting the challenge of climate change and global warming stood at US $ 6.9 billion. The largest contribution has been made out by the World Bank amounting US $ 5.1 billion. Funds already made available by different countries can be seen from Chart 1.



Source: Prepared by the author

Delegates at the start of climate negotiations at Bangkok (Thailand) were told that the world expects action as they struggle to break the deadlock in talks for tougher pact to fight global warming. Agreement on climate funds and who will pay is an important or strategic segment to get a deal to fight climate change in Copenhagen (Denmark) in coming December 2009.

Proposal on How to Raise Funds

The following are the major proposals for agreement in coming climate change negotiations: [HT]

a) US 4 15-25 (Norwegian) billion set quotas of greenhouse gas emissions permits for developed nations for 2013-2020 of which 2 per cent would be sold to them to raise funds.
b) US $ 10 billion (Mexican) international fund form all nations, based on their responsibility for causing climate change, national wealth and population.
c) US $ 55 billion (European Commission), expansion of carbon markets so rich earn rights to pollute by paying for emissions cuts in less developed countries.
d) US $ 28 billion (Least developed economies), Levy on international jet and shipping fuels.

Conclusion

Climate change is one of the biggest challenges for entire globe. But developing economies and especially emerging economies like India and China are greatly affected. Hence, the need of the hour is to tackle the challenge with “utmost sincerity”. The effects are of far reaching consequences. If human civilization is to be saved then there is no option before any country just to cooperate positively and constructively in save the

earth from further decay. Cost-bearing should be logical keeping in mind the capacity of the every nation to contribute. Global decisions should strictly adhere to. The need of the day is to have collective approach to tackle the challenge. The possible replacement of the existing Kyoto Protocol by a new treaty suggested by the US must be deliberated, negotiated and finalized with all care and cautiousness as the same may have far reaching effects, consequences and implications for every country and continent. The decision should not be in haste. The future of Climate change issue is basically depending upon the out come of negotiations that have to be taken place in Durban, South Africa in December 2011.

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