

Research Article**Global Warming and Environmental protection in South Asia Policy Framework: A Study****Dr. R. Uthaya Suriyan**

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Abstract: The terms 'global warming' and 'climate change' are often used co-tremendously, but the two phenomena are different. Global warming is the rise in global temperatures due to an increase of heat trapping carbon emissions in the atmosphere. Climate change, on the other hand, is a more general term that refers to changes in many climatic factors around the world. These changes are happening at different rates and in different ways. The world mostly agrees that some-thing needs to be done about global warming and climate change. The first stumbling block, however, has been trying to get an agreement on a unanimous framework. In 1988, the Intergovernmental Panel on Climate Change (IPCC) was created by the United Nation Environment Programme (UNEP) and the World Meteorological Organization to assess the scientific knowledge on global warming. The IPCC concluded in 1990 that there was broad international consensus that climate change was human induced. That report led the way to an international convention for climate change namely the United Nations Framework Convention on Climate Change (UNFCCC), signed by over 150 countries at the Rio Earth Summit in the year 1992. Intergovernmental Panel on Climate Change reported that greenhouse gas (GHG) concentrations in the global atmosphere were rising as a result of human GHG emissions, principally from fossil fuel burning this is clearly a 'global problem'. (A. Shah, 2004, IPCC, 2001, J. A. Church et.al. 2010)

Keywords: Climate, Convention, Emission, Economic growth, Global Warming, Values

Introduction:

The world mostly agrees that some-thing needs to be done about global warming and climate change. The first stumbling block, however, has been trying to get an agreement on a unanimous framework. In 1988, the Intergovernmental Panel on Climate Change (IPCC) was created by the United Nation Environment Programme (UNEP) and the World Meteorological Organization to assess the scientific knowledge on global warming. There is yet another dimension to the global problem. While the global dependency on fossil energy for economic growth remains nearly 100 per cent at this time, the IPCC also noted that cuts in GHG emissions in the order of 60 per cent to 80 per cent were required immediately if rising atmospheric GHG concentrations were to be stabilized just at the present raised values Environmental degradation remains a challenge in countries of South Asia. With the proposed increase in industrial activity, exponential growth in number of vehicles and population, the contribution of each South Asian country to the regional air pollution will increase over time. India is the biggest energy user, followed by Iran and Pakistan. With increasing urbanization and industrialization, air pollution is an increasing concern in South Asia. With rising urbanisation and economic

growth, air pollution is becoming an urgent concern in South Asian countries Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. South Asia with a combined population of roughly 1.6 billion people is a low income region and is home to half of the world's poor. Traditionally the South Asian economies are centred on agriculture, however recently manufacturing and services have become major contributing sectors as well. The strong recovery in India the growth in the economics of Bangladesh and Sri Lanka are the primary recourses for this economic rebound. India, as an emerging economy of the world is the dominant political power in the region. The state of education and health in the region leave much to the required. The aim of this study is to look into and discuss the socio-economic condition of South Asia, the existing circumstances of air pollution in the countries of the region, its resulting health impacts on the population and the responses, if any of national governments to combat air pollution. Among others the paper makes recommendations, including a legally binding agreement for South Asia for strengthening the framework for air pollution reduction at local, regional and national levels, in South Asian region.

Impact of Global Warming:

As the earth's surface absorbs the sun's rays, the heat bounces back, and a part of it ultimately escapes into space. On its way through the atmosphere the heat is absorbed by carbon dioxide and methane molecules; this process raises the temperature on the earth's surface. The more carbon dioxide there is in the atmosphere, the more heat is entrapped. This phenomenon is called the "green- house effect". The 'greenhouse effect' is the process in which the emission of infrared radiation by the atmosphere warms a planet's surface. World's carbon dioxide emissions are expected to increase by 1.9 per cent annually between 2001 and 2025. Much of the increase in these emissions is expected to occur in the developing world where emerging economies, such as China and India, fuel economic development with fossil energy. The developing countries' emissions are expected to grow above the world average at 2.7 per cent annually between 2001 and 2025 and surpass emissions of industrialized countries near 2018 (C. K. Folland, T. R. Karl, 2001).

The main impacts of global climate changes are manifest in gradual rise in global surface temperature, melting of ice-bbergs and attendant rise in sea-levels, continuous build-up of greenhouse gases leading to 'green-house effect', depletion of Ozone concentration or layers, catastrophic natural disaster and calamities, loss of vegetation, plant, animal lives, biodiversities, marine flora and fauna etc. The widespread retreat of glaciers and icecaps in the 21st century will also lead to higher surface temperatures on land and increasing water stress. According to scientists will continue to study the critical and important issues of the effects of adverse air quality and climate change on crop production as also the larger question of global food security. Industrialized countries are largely responsible for the build-up of GHGs in the atmosphere thus far, and must bear the brunt of the mitigation effort. But dev loping countries can play an important role in reducing emissions growth within the context of their continued economic development. Nearly 80 per cent of the world's population lives in developing countries, which already account for over 40 per cent of current world emissions and given present trends, this share will rise to 56 per cent by 2025. According to a UN climate report, the Himalayan glaciers that are the sources of Asia's biggest rivers Ganga, Hindu, Brahmaputra, Yangtze, Mekong, Salween and Yellow could disappear by 2035 as temperatures rise. Approximately, 2.4 billion people live in the drain age basin of the Himalayan Rivers. India, China, Pakistan, Bangladesh, Nepal and Myanmar could experience floods followed by droughts in coming decades. In India alone, the Ganges provides water for drinking and farming for more than 500 million people. It has to be acknowledged, however, that increased seasonal runoff of Himalayan glaciers led to increased agricultural production in northern India throughout the 20th century. The role of the oceans in global warming is a complex one. The oceans serve as a sink for carbon dioxide, taking

up much that would otherwise remain in the atmosphere, but increased levels of CO₂ have led to ocean acidification. Further- more, as the temperature of the oceans increases, they become less capable to absorb excess CO₂. Global warming is projected to have a number of effects on the oceans. Ongoing effects include rising sea levels due to thermal expansion and melting of glaciers and ice sheets, and warming of the ocean surface, leading to increased temperature stratification. The temperature of the Antarctic Southern Ocean rose by 0.17°C (0.31°F) between the 1950s and the 1980s, nearly twice the rate for the world's oceans as a whole (J. Hansen et.al. 2005)

Status on Agriculture and Food Security:

Climate change is expected to have a mixed effect on agriculture, with some regions benefiting from moderate temperature increases and others being negatively affected. Low-latitude areas are at most risk of suffering de- creased crop yields. Mid- and high-latitude areas could see increased yields for temperature increases of up to 1°C - 3°C. According to the IPCC report above 3°C of warming, global agricultural production might decline, but this statement is made with low to medium confidence. Most of the agricultural studies assessed in the Report do not include changes in extreme weather events, changes in the spread of pests and diseases, or potential developments that may aid adaptation to climate change. Increasing global temperature means that ecosystems will change; some species are being forced out of their habitats because of changing conditions, while others are flourishing. Secondary effects of global warming, such as lessened snow cover, rising sea levels, and weather changes, may influence not only human activities but also the ecosystem. The continued retreat of glaciers will have a number of different effects. In areas that are heavily dependent on water runoff from glaciers that melt during the warmer summer months, a continuation of the current retreat will eventually deplete the glacial ice and substantially reduce or eliminate runoff. This situation is particularly acute for irrigation in South America, where numerous artificial lakes are filled almost exclusively by glacial melt. Central and South Asian countries have also been historically dependent on the seasonal glacier melt water for irrigation and drinking supplies (A. Shah 2008, I. Douglas, 2009)

Global Warming and Environmental Economic Impacts in South Asia:

The impact of global warming is visible in communities throughout the world as demonstrated most recently and dramatically in North America and Europe, where unexpected heat waves and storms caused by the shifting climate decimated crops and inflicted serious financial losses on farmers. Inhabitants of low lying islands, such as Tuvalu, the Maldives and the Solomon Islands, are finding their drinking water adulterated by rising seas that also threaten to obliterate parts of their national territories. The region's economies could lose as much as 6.7 per cent of combined gross domestic product yearly by 2100, more than twice the global average loss, according to the ADB's report on the economics of climate change in Southeast Asia. The global economic downturn could delay funding for climate change mitigation measures by regional governments (J. Mehovic and J. Blum 2004)

Social Human Security and Environment Development:

South Asia is the world's most impoverished region, with the highest rate of illiteracy and over 500 million people living below the absolute poverty line. Najam argued that it is erroneous to think of security primarily as a matter of states and their military alliances and to define security as the safety of borders and institutions from outside threats. Rather, the true sources of insecurity in South Asia are non-military threats arising within the nations such as poverty, social vulnerability, and ecological resiliency. He explained that in Bangladesh, "poverty is, and will remain the most important source of vulnerability and insecurity." According to 'Najam' poverty plays a more central role than has been acknowledged in linking environmental degradation and conflict. In the case of Nepal, "environmental stresses interact with societal

vulnerability, disrupted development, and perverse markets to create an atmosphere of insecurity.” Thus, he stated that chronic and structural poverty may be a required condition for the connection between the environment and security to be made. He also suggested that good governance is critical to ensuring resource availability and sustainable development. First, for developing countries, especially in South Asia, it is best to conceptualize environment and security within the context of sustainable development. Second, the challenges of environment and security in South Asia are primarily a problem of institutions and governance. Finally, there is a small possibility for forging more cooperative relations in the region based on the nexus of environment and protection (A. Najam, 2003, S. Burgess, 2002)

In global level climate change if left unaddressed, is likely to pose “as a great or a greater foreign policy and national security challenge than any problem” the United States currently faces, according to a major new report released here Monday by two influential Washington think tanks. Under a worst-case scenario, that nonetheless remains “plausible” given the latest scientific estimates, climate change’s impacts on global stability “would destabilize virtually every aspect of modern life,” according to the conclusions of a task force assembled by the Centre for Strategic and International Studies and the Centre for a New American Security (CNAS). The second IPCC report coincided with the release of yet another study by a panel of retired senior U.S. military officers that warned, among other things, that sea-level rise and a dearth of fresh water particularly in the Middle-East, Africa, and South and Southeast Asia would “foster the conditions for internal conflicts, extremism and movement toward increased authoritarianism and radical ideologies.” The expected decline in food production and fresh drinking water, combined with greater possibilities for intra-state and interstate conflict, will drive more Africans and South Asians to migrate further abroad, possibly resulting in a major surge in the number of immigrants to Europe, according to the report.

There is growing consensus that ecological degradation can, and does, trigger, amplify or cause conflict and unsteadiness, and a rising concern that environmentally induced conflict might increase. Today, security in situations are being called upon to protect access to environmental resources in other countries as well as in the global commons, and to provide support for humanitarian operations, many of which have significant ecological roots. In the future, force may be used in response to Tran’s boundary pollution, or to enforce international environmental law. But security specialists recognize that conflict can be a constructive force, signalling the need for institutional change or capacity building. The pressures placed on institutions by environmental degradation and resource scarcity might be just such a signal. Building sustainable peace between and within countries requires the international community to tackle the root causes of conflict. In terms of the environment, this includes managing our natural resources more effectively and halting environmental degradation. In this context, IISD’s focus is to provide practical recommendations to decision-makers on how better environmental management could reduce the risk of conflict (A. France Presse, 2009, J. Lobe, 2007).

Climate Security Index and Policy Reports:

Climate Security Index, a new report by the American Security Project, links global climate change impacts and energy insecurity to US national security, concluding that these interrelated problems constitute a “clear and present danger to the national security of the United States.” The report says global climate change is projected to produce “insufficient water supplies, shifting rainfall patterns, disruptions to agriculture, human migrations, more failing states, increased extremism, and even resource wars,” all of which pose an urgent threat that must be addressed in national security policy. The Index addresses, inter alia, what are the human security issues that must be addressed in the larger international policy context. The American Security Project is a non-profit, bipartisan public policy and research initiative to educate the American public about the changing nature of national security in the 21st century.

Their board of directors is composed of high-ranking retired military officers, public servants including current and former US Senators, and former government officials.

Climate Security Index represents a renewed effort to sound the alarm based on current, authoritative knowledge. The projected global impacts of climate change spell out a clear and present danger for the United States, says the report: "Climate change refugees will increasingly cross our own borders. In South Asia, the melting of Himalayan glaciers jeopardizes fresh water supplies for more than one billion human beings. The nonpartisan think tank American Security Project's Secure America Future program recently released a new report entitled Climate Security Index, detailing climate security threats around the globe. The report looks at the numerous impacts of climate change throughout the world, identifying key "hot spots" where impacts pose the greatest security concerns, such as Central America, Sub-Saharan Africa, and Southeast Asia. New climate conditions will drive human beings to move in ever larger numbers, seeking food, water, shelter and work. No region will be immune. Climate refugees will increasingly cross our own borders. The stress of changes in the environment will further weaken marginal states. Failing states will incubate extremism. In South Asia, the melting of Himalayan glaciers jeopardizes fresh water supplies for more than one billion human beings (R. Piltz and A. Jay, 2009, D. Pearce and G. Atkinson, 1998)

Environment Degradation and Food Security:

These are the poorest regions in the world with high levels of chronic under nourishment, and are the ones which contributed the least to the problem of environment decay and climate change. But they will be the hardest hit. The international community and the developed nations have expressed concern towards them in a recent G8 summit declaration which states, "We highlight that climate change severely affects developing countries and is becoming a major threat to their ability to achieve internationally agreed development goals including the MDGs." The impacts of climate change on agriculture and food security are manifold. This scenario predicts regional disparities in food production and availability.

The Food and Agriculture Organization (FAO) of the UN predicts that the overall global food production is likely to keep pace with population growth and the food demand in the future. Thus, apart from taking mitigating action to halt the climate change, the International Community faces the challenge of removing the regional disparities in the availability of food across the globe (A. Garg et.al, 2003)

Global Initiatives for Energy Security & Sustainable Development:

Currently, most Governments are individually seeking and taking measures to ensure a steady supply of energy resources to sustain their economic growth. In the era of globalization, a collective cooperation framework could supplement national efforts and bring mutual benefits. A cooperation framework could include a coordinated planning and development approach for trade and exchange, which could lead to the integration of energy infrastructure aimed at facilitating the supply of energy to final consumption destinations beyond national boundaries. It is heartening to note that platforms for cooperation have already been initiated in some sub regions, including South-East Asia, North-East Asia, South-Asia and West and Central Asia.

The Organization for Economic Co-operation and Development (OECD) International Energy Agency (IEA), and recent reports on World Energy Outlook 2004 project that over the next 30 years global primary energy demand will grow by 1.7 per cent per annum from 9.20 billion tonnes to 15.30 billion tonnes of Oil Equivalent, and that this demand will be met primarily by conventional fossil energy such as oil, natural gas and coal, in the near term. Energy from the renewable resources is also expected to grow in the mid century term, but will remain in the small percentages of the total energy mix in near term. Based on a number of statistics it is also projected that many communities across the globe living at or below the poverty line will

remain without the access to modern energy systems such as electricity, which an essential requirement for social and economic development.

Climate Change and Sustainable Development Issues:

Sustainable development has become part of all climate change policy discussions at the global level, particularly due to adoption of Agenda 21 and the various Conventions resulting from the UNCED. The generally accepted and used definition as given by the 'Brunt land Commission' is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

Sustainable development has become an integrating concept embracing economic, social and environmental issues. Sustainable development does not preclude the use of exhaustible natural resources but requires that any use be appropriately offset. Three critical components in promoting sustainable development are economic growth, social equity and environmental sustainability. Switching to more sustainable development paths can make a major contribution to climate change mitigation, but implementation may require overcoming multiple barriers. There is a growing understanding of the possibilities to choose and implement mitigation options in several sectors to create synergies and avoid conflicts with other aspects of sustainable development. Making development more sustainable by changing development paths can make a major contribution to climate change mitigation, but implementation may require resources to overcome multiple barriers. There is a growing understanding of the possibilities to choose and implement mitigation policies in several sectors to realize synergies and avoid conflicts with other dimensions of sustainable development. Climate change is already a major driver of impoverishment and conflict around the world, but that fact has not yet been given the urgent attention it demands (W. Chandler et.al and C. Feinstein, 2002)

Sustainable Energy Development:

The Asia-Pacific region, among the world's most populous and diverse, includes many of the world's communities that are most at risk from catastrophic events brought about by climate change and other fossil-fuel consumption related impacts. The region needs a coherent and effective framework for sustainable development which inevitably has to mandate the rapid deployment of renewable energy and energy efficiency policies and practices. Along with growth, Asia's energy consumption has been rising steadily, and the need to reduce poverty and meet the Millennium Development Goals means that it will continue to rise. With most of its energy coming from fossil fuels a primary source of green-house gas emissions or GHGs Asia now accounts for nearly one-quarter of the world's GHG emissions.

The International Energy Agency (IEA) has estimated that the region will require between \$4 trillion and \$5 trillion from now to 2030 for new energy infrastructure. Most of these investments will be directed toward electricity, primarily coal-fired power plants. On this basis, it is reported that the global energy-related carbon dioxide emissions will surpass Forty billion tonnes in 2030, with Asia contributing about 40 Per cent of total emissions.

Conclusion:

For a rapid economic growth, both the developed as well as the developing economy of the world are using energy-intensive technologies, making wide use of fossil-fuels as feedstock. Over the years, this has caused a huge build-up of Green House Gases (GHGs) causing unfavourable impact on the ecological quality, human and animal lives. Several other anthropogenic activities are also the potent sources of pollution. In the process, the emissions level is also rising phenomenally along with the phenomena of Global warming; and this is also becoming quite alarming, affecting the environmental quality as also its security concerns globally. This paper has brought out obviously the major impacts of global warming and important climate change on the environmental excellence and overall security aspects including commercial, strategic and defence connected security aspects for the South-Asian

region. The paper has also spelt out in some length the future strategy linked to the question of energy security as well as the environmental security through the pathways of sustainable energy growth for achieving a balanced economic development for the South Asian region. In sum, while there is an imperative for the South Asian Countries to accelerate their process of economic growth for the region's economic prosperity in a globally competitive manner, there is also a need to focus on energy and environmental security aspects of the region for a balanced and sustainable development.

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