



A Private Sector Response

Climate Change issues in **SOUTH ASIA** Prospects for Carbon Trade



SAARC Chamber of Commerce and Industry





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SAARC CCI Policy Paper Series
Climate Change and Carbon Trade in South Asia

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A publication of the SAARC Chamber of Commerce and Industry (SAARC CCI).

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SAARC Chamber of Commerce and Industry (SAARC CCI) is an apex business organization of South Asian Association for Regional Cooperation (SAARC).

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First Edition: May 2012

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FOREWORDS

Can we afford to see Maldives to disappear from the global map? Can we afford to manage reconstruction of Mumbai, Karachi, Colombo, Chittagong and other coastal cities in South Asia in wake of perceived sea rise due to increase in global warming.

No, absolutely not!

We are alarmed of and this can happen if the global temperature increases by 2 degree Celsius only.

Because of climate change, which is attributed to continuous emissions of CO₂ and Green House Gases, the world in general and the South Asian region, in particular, is likely to face acute shortage of food, deforestation, dislocation of masses due to melting glaciers, threat to human and animal health.

We are also sensitised by the researchers and climate change experts, particularly, from Western world that if we utilise fossil fuels, particularly coal, it would lead towards more emission of carbon dioxide gas, polluting the global environment and bringing more disasters to which South Asian region is more vulnerable.

Are we, the South Asian Nations, responsible for the ever increasing global warming, polluting the overall global climate?

No, absolutely not!

Despite the fact that South Asian Nations contribute only 6% of the total GHG emissions, the region is likely to be affected the most by climate change. The incidents of melting glaciers, change in weather and rainfall have been frequently witnessed by South Asian Nations, particularly in Pakistan, which received devastating floods in 2010 and a sad event of melting glaciers recently witnessed at Siachen, claiming irrecoverable loss of hundreds of lives of soldiers and civilians. Such events need more responsible responses towards natural calamities and disasters in wake of climate change.

The leaders of South Asia have realized the probable effects of Climate Change; and its practical demonstration can be witnessed in the form of creation of "SAARC Food Bank" and "SAARC Disaster Management Centre". Private Sector of the region, indeed appreciates these initiatives. Although, issues of climate change and disaster management are a responsibility of public sector, the role of private sector both at adaptation and mitigation policy level is crucial. As a Corporate Social Responsibility, the Private Sector is geared up to stand united with the public sector to mitigate the impact of climate change.

To create awareness amongst the Private Sector of the region, SAARC Chamber of Commerce & Industry(SAARC CCI) organizes string of conferences on Climate change in Bhutan and Pakistan, which are aimed at sharing their vision and involving them in efforts towards managing crisis in wake of disasters and natural holocausts. This report is a first meaningful response of the Private Sector towards climate change issues, which emphasise on the need for shared vision and coordinated efforts to address the issue in unison for the sake of humanity. The report recommends pooling



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up of resources and establishing SAARC Climate Change Fund.

I extend my heart gratitude to Sustainable Development Policy Institute (SDPI) Pakistan, the speakers of the conferences, support of Federation of Indian Chambers of Commerce & Industry (FICCI) and all other National Chambers in South Asia, the office bearers of SAARC CCI and, particularly, the authors of the report and the dedicated team at SAARC CCI Secretariat in Islamabad for this wonderful value-added piece of work.

I am certain the policymakers, researchers, government officials and general readers will benefit from the findings of the paper and invite comments and suggestions for further improvement in its next edition.

Vikramjit Singh Sahney
President, SAARC CCI



ACKNOWLEDGEMENT

The report on “Climate Change and Energy Cooperation in South Asia” would not have been possible without essential and gracious support of our partner organizations and many renowned individuals. Firstly, we are grateful to the Friedrich Naumann Foundation (FNF): Fur Die Freiheit, Regional Directorate New Delhi India, for their committed and continued support.

We are in appreciation of the management of the Bhutan Chamber of Commerce & Industry (BCCI) and the Royal Government of Bhutan for their support and extend our profound gratitude to Hon’ble Prime Minister of the Kingdom of Bhutan H.E. Lyonchen Jigmi Y Thinley for inaugurating the “Conference of Climate and Energy” and H.E Lyonpo Khandu Wangchuck, Hon’ble Minister for Economic Affairs, Kingdom of Bhutan, Hon’ble Minister for Power and Energy, Government of Sri Lanka, Dr. Pema Jamtsho, Hon’ble Minister for Agriculture, Dr. Mohammad Azam Khan Swati, Former Minister for Science & Technology, Government of Pakistan. We are also thankful to all our National Member Bodies (FBCCI, FICCI, MNCCI, FNCCI, FPCCI, FCCISL), SAARC Energy Centre (Pakistan) and SDPI for their knowledge support.

We are also thankful to Mr. Kanwar M. Javed Iqbal, Snr. Research Associate, SDPI & Joint author of this report, whose contribution and continuous support enabled us to present this publication. We are also indebted to our distinguished speakers, representing various think-tanks like Mr. Tariq Aziz, Leader, Living Himalayas Network Initiative (LHNI), WWF (Nepal); Mr. Eklabya Sharma, Director Programme Operations, ICIMOD, (India); Prof. Dr. Syed Hussain Ashraf, Senior Professor, Dept. of Commerce, Aligarh Muslim University India, Dr Moinul Islam Sharif, Senior Fellow, Bangladesh Centre for Advanced Studies, Bangladesh, Ms. Rina Saeed Khan, Freelance Journalist (environment and development issues) and consultant communications, UNDP and WWF-Pakistan, Ms. Yvani Deraniyagala, Manager Research & Training, Munasinghe Institute for Development Sri Lanka, delegates and participants of the deliberations held during conferences in Bhutan and Pakistan. We are also thankful to Mr. Zubair Ahmed Malik, former EC Member SAARC CCI for his assistance in improving the contents of the report and Mr. Sardar Ahmad Nazish, Principal Information Officer of PCSIR for editing the report.

Last but not the least; we also appreciate our colleagues Mr. Zulfiqar Ali Butt, Ms. Nafeesa Hashmi and Mr. Bader Munir at SAARC CCI Secretariat in Islamabad for their valued feedback and input, enabling us to accomplish this task.

Muhammad Iqbal Tabish
Secretary General

ACRONYMS

ACF	Asia Carbon Forum
ASEAN	Association of Southeast Asian Nations
FBCCI	Federation of Bangladesh Chambers of Commerce & Industry
CCBA	Climate, Community and Biodiversity Alliance
CCI	Chamber of Commerce and Industry
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CO ₂	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
FICCI	Federation of Indian Chambers of Commerce & Industry
FNCCI	Federation of Nepalese Chamber of Commerce & Industry
FPCCI	Federation of Pakistan Chambers of Commerce & Industry
FCCISL	Federation of Chambers of Commerce & Industry, Sri Lanka
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GHG	Green House Gas
Gt	Giga tone
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
JICA	Japan International Cooperation Agency
MNCCI	Maldives National Chamber of Commerce & Industry
NAMA	Nationally Appropriate Mitigation Action
NGO	Non-governmental Organization
PDD	Project Design Document
Ppm	Parts per million
PPP	Public Private Partnership
RE	Renewable Energy
REDD+	Reducing Emissions from Deforestation and Forest Degardation Plus
SAARC	South Asian Association for Regional Cooperation
SAPTA	South Asia Preferential Trade Act
SCCI	SAARC Chamber of Commerce and Industry
SAARC CCI	SAARC Chamber of Commerce and Industry
SCF	SAARC Carbon Forum
SMS	SAARC Member State
UNFCCC	United Nations Framework Convention on Climate Change
US\$	United States Dollar
USA	United States of America
VCS	Verified Carbon Standard
WTO	World Trade Organization
WWF	Worldwide Fund for Nature

EXECUTIVE SUMMARY

The effects of climate change are now visible on economic growth & production patterns of many regions, especially, of agriculture based countries. The SAARC countries ushered their agriculture based economy towards an industrialized option with fairly low contribution towards the world's carbon dioxide emissions. At the same time, SAARC countries are facing multiple threats relating to climate change especially for adaptation, aggravating the already aggravated situation in the region. Sub-standard industrial operations generate excessive carbon, toxic to health, polluting the environment and ultimately causing global warming. Industries manage their emissions through Cap and Trade provision, which is now available only in developed countries while in the developing world, it would be applicable after 4-5 years. Despite the pertinent need for responding to climate change, current policy framework to address climate change, especially adaptation in SAARC region fails to comprehensively address the issue. There is a suggested series of policy responses to climate change including adaptation policies and incentive based mitigation responses such as NAMA, Clean Development Mechanism (CDM) and REDD+ under the actions agreed through UNFCCC's global negotiations.

In order to harness maximum carbon trade potential and address its needs for the region, SAARC Chamber of Commerce and Industry (SAARC CCI) intended to develop this paper with the aim to provide a comprehensive document with recommendations for a way forward to climate change adaptation in general and carbon trading mechanism, in particular, for the benefits of natives of SAARC countries. The production of this policy paper, primarily, involved the evaluation of primary and secondary sources of information, and analysis of secondary data from various sources. Overall scope of paper covered the analysis of existing energy potential and its trade mechanism in SAARC countries by taking into account the technical review of challenges due to climate change, existing capacities, governance issues, institutional set up, role of stakeholders, carbon trade potential through application of clean technologies and carbon stocking in forests, and impact of current policies.

The paper concludes that estimated atmospheric concentration of CO₂ is increasing at a rate of 1.9 ppm each year. Between the years 2000 and 2005, an average of 26 Gt of CO₂ was released into the atmosphere each year vis-à-vis a record release of 30.6 Gt in the year 2010. The South Asian countries have very low contribution towards CO₂ emissions but the scale of suffering is quite high. South Asia is facing the collective action dilemma in responding climate change adaptation as well as mitigation. There is a perception not to assume an unfair burden by contributing more than its "fair share" of carbon emission reductions. The poor progress towards incentive based climate change mitigation i.e. CDM mechanism, from all South Asian countries except India, is because of the basic failure of institutional setup, poor understating at political level, low level of mass-awareness, and unavailability of technical human resources. This led not only towards low level of regional participation in global actions but also remained unable to maximize their fiscal benefits and strengthen the economy through financial flow from Annex-I to Annex-II. The emissions trading permits industrial countries to transfer part of their Kyoto emissions reduction obligations to other nations, in exchange for payments. The South Asia has a tremendous potential for carbon credit projects in the areas of grid connected large hydro, wind energy, bagasse co-generation (sugar mills), grid connected micro hydro, off-grid micro hydro, solar home system and water pumps, waste in urban sprawls, sanitary landfills, commercial and industrial wastewater, on-farm biogas, industrial ethanol production, and forestry.

In global CDM market, 4028 projects have been registered with CDM Executive Board across the globe and 913,349,379



CERs have been issued, as of 30th April 2012. China is the global leader with 1930 registered projects representing 47.88% share in overall global CDM project figures with 59.41% share towards global CERs. The second player is India with 813 registered projects representing 20.17% and 96.3% share in global and SAARC member states' CDM projects figures respectively with 15.14% share towards global CERs. South Asia had the opportunity to materialize 842 projects so far for which India has become the leading player with a total of 78.5 million CERs for its registered projects.

The CDM has been extended during the Durban COP and new CDM projects are now allowed until the year 2017. The overall CDM development dynamics in South Asia are not satisfactory as all the member states have not enjoyed the maximum benefits except India. Like many other regions in the world, South Asia has also technical, financial, sustainability and institutional barriers in order to harness its real carbon trade potential. The limitations for the provision of technical in-house expertise to deal with baselines and other technical matters remained critical and difficult problem in the region. Although a number of institutional capacity building programme were run in some parts of the region but very much limited in real scope and it has yet to develop a systematic awareness raising and capacity building programme in the region. Similarly, keeping in view the current status of REDD+ compliance procedures, it is the right time to embark upon certain capacity building and awareness raising programmes for REDD+ development in South Asia. The SAARC Chamber of Commerce and Industry (SCCI) could be instrumental to gear up CDM and REDD+ in the region.

There is a lack of awareness on CDM among potential project developers and stakeholders such as industries, NGOs, local authorities, and governmental organizations. The academic institutions and consulting firms should be taken on board for their technical skills enhancement in order to provide technical resources especially in all member states except India for CDM project development and to address the projects' sustainability issues in a best way. The DNAs should play its important role in this regard whereas the role of SCCI could be instrumental in raising the graph of progress in South Asia not only for CDM but also for REDD+ development.

The given framework under UNFCCC has good portent in setting trends for developing and implementing institutional frameworks for mitigation agenda at national and regional levels. Although, adaptation response is the major issue and challenge in South Asian perspective but, there is no such comprehensive institutional mechanism that could be brought forward to address the need and trends of mitigation framework; and applied in responding the adaption agenda especially in South Asia.



1. INTRODUCTION

Climate change is a complex phenomenon happening due to anthropogenic as well as natural warming factors and being observed across the globe. The effects of climate change are now visible and affecting the economy of many regions, especially, of agriculture based countries. SAARC countries foster their agriculture based economy towards an industrialized economy with low contribution towards carbon dioxide emissions of the world. Moreover, SAARC countries are facing multiple threats relating to climate change especially for adaptation; aggravating the already aggravated situation in the region. Agriculture is already confronted with the problems of low productivity, water shortage, mismanagement and related issues of climate change that are adding to further the worse situation. It is predicted that there would be 2.5 to 10 percent decrease in the yield of crops in 2020s and 5 to 30 percent decrease in 2050s from the levels of 1990s in Asia (IPCC, 2007).

Sub-standard industrial operations generate excessive carbon, toxic to health, polluting the environment and ultimately causing global warming. Industries manage their emissions through Cap and Trade provision which is now available only in developed countries while in the developing world, it would be applicable after 4-5 years. Forest degradation leads to reduction in the capacity of forests to store carbon. However, in order to address global deforestation and degradation, initiatives like REDD+ are critical as a mitigation response to climate change. It is presented as an offset scheme of carbon markets and thus, will produce carbon credits. The carbon credits generated by CDM or REDD+ projects can be used by industrialized governments and corporations to meet their targets and/or to be traded within the carbon markets. It is predicted that financial flows for greenhouse gas emission reductions from REDD+ could reach up to US\$ 30 billion a year. This significant North-South flow of funds could reward a meaningful reduction of carbon emissions and could also support new, pro-poor development, help conserve biodiversity and secure vital ecosystem services.

Despite pertinent need for responding to climate change, current policy framework to address climate change, especially adaptation, in SAARC region fails to comprehensively address the issue. There is a suggested series of policy response to climate change including adaptation policies and incentive based mitigation responses such as Nationally Appropriate Mitigation Action (NAMA), Clean Development Mechanism (CDM) and REDD+ under the actions agreed through UNFCCC's global negotiations. The developed countries emitting GHG, produce carbon; and the SAARC developing countries being non-emitters, have potential to stock excessive carbon in the form of carbon credits through clean technological options and sustainable management of forests. Under CDM and REDD+ mechanism, the emitters want to trade their carbon to be consumed/stocked by clean technologies or forests in the developing countries at per ton cost to be calculated according to the Certified Emission Reduction (CER). This process builds a nexus between climate change and carbon credits thus allowing carbon trade with the flow of foreign exchange from developed to developing countries.

At this very critical point of time, it is imperative to provide a strategic framework of actions to implement climate change policies at the level of SAARC in order to take maximum benefits of carbon trade from incentive based mitigation responses like CDM and REDD+. The overall scope of this paper has covered the analysis of existing climate change scenario, adaptation measures and carbon trade mechanism for mitigation response in SAARC countries by taking into account the technical review of challenges due to climate change, existing capacities, governance issues, institutional setups, role of stakeholders, carbon trade potential through application of clean technologies and carbon stocking in forests, and impact of current policies.

2. AIM AND OBJECTIVES

The overarching aim of this paper was to provide a comprehensive document with recommendations for a way forward to climate change adaptation, in general, and carbon trading mechanism, in particular, for benefits of natives of the SAARC countries through the following key objectives:

- To analyse existing climate change scenario in SAARC member states.
- To examine carbon trade potential through application of clean technologies and carbon stocking in forests.
- To suggest adaptation measures and carbon trade mechanism for mitigation response.

3. METHODOLOGY

The production of this policy paper, primarily, involved the evaluation of primary and secondary sources of information, and analysis of secondary data from various sources. It covered the analysis of existing climate change scenario, carbon trade potential for mitigation response and its trade mechanism in SAARC countries by taking into account the technical review of challenges due to climate change and related factors through application of clean technologies, and impact of current policies.

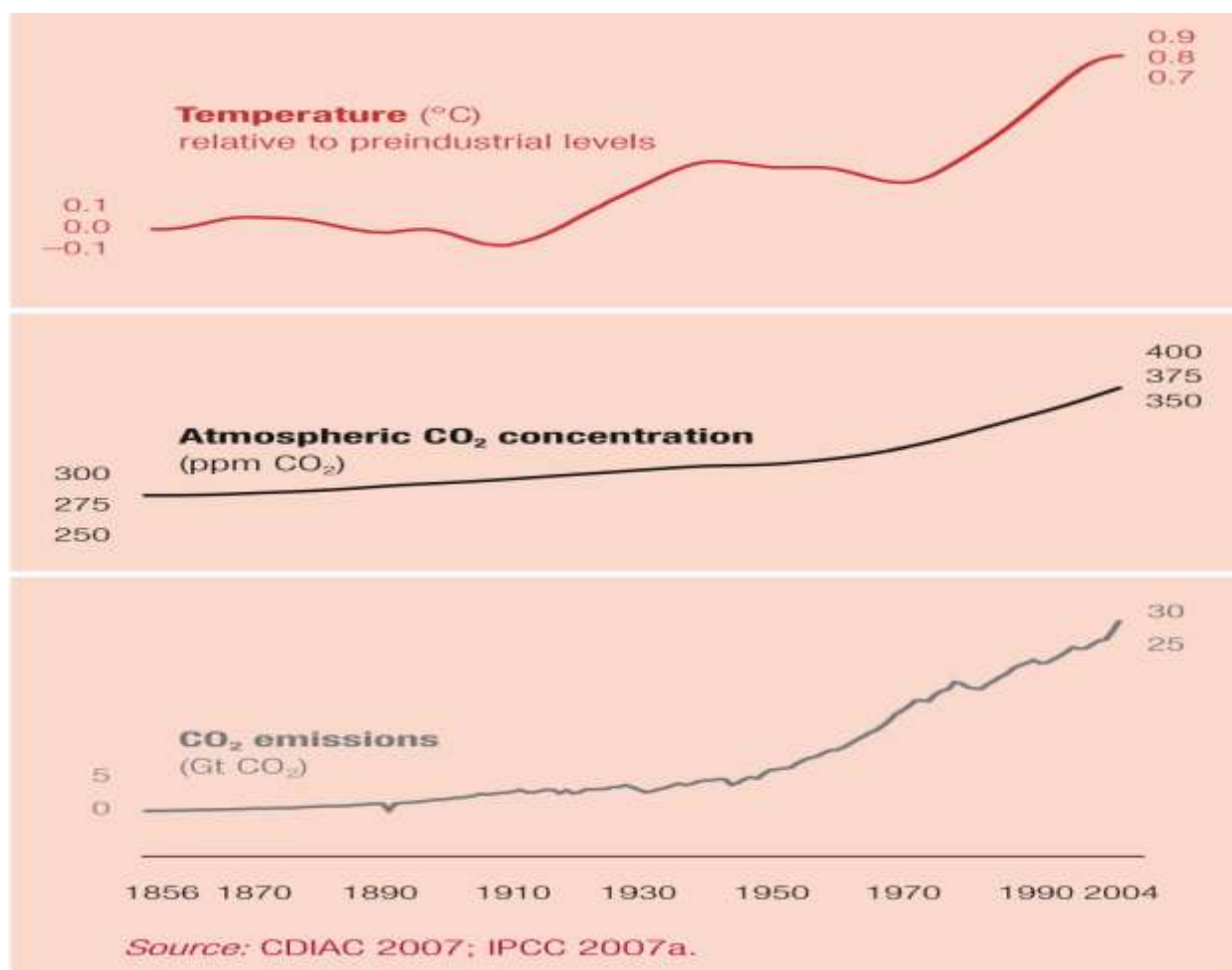
Initially, the literature was reviewed through a desk study based on which the analysis and evaluated for carbon trade potential and suggesting best measures for SAARC member states. The feedback of various experts related to climate change and carbon trade in SAARC countries was taken through consultative workshops during the 'Bhutan Conference 2012' held on 21st to 23rd April 2012 at Paro, Bhutan and the second Regional Conference held on 30th April 2012 at Islamabad, Pakistan. The existing trends for challenges and other concerns in SAARC countries were analyzed and evaluated through scrutinizing the secondary material including latest available subject documents, agreements and national priority agendas. Finally, the actions have been suggested for promotion of carbon trade options in South Asia.

4. CLIMATE CHANGE AND RESPONSE IN SOUTH ASIA

4.1 Past, Present and Future Trends

During the years 1970-2012, global total annual anthropogenic GHG emissions have grown by 70%. In the absence of a serious effort to curb emissions by the year 2100, carbon dioxide concentrations will be about twice the pre-industrial level (over 500 ppmv). The global industrialized life during the past 100 years has affected the earth's temperature with an increase of 0.80°C. The estimated atmospheric concentration of CO₂ is increasing at a rate of 1.9 ppm each year. Between the years 2000 and 2005, an average of 26 Gt of CO₂ was released into the atmosphere each year vis-à-vis a record release of 30.6 Gt in the year 2010 only. Exhibit 1 shows historical changes and shifts in atmospheric concentration of CO₂.

Exhibit 1 : Historical Trends of Carbon Dioxide Emission



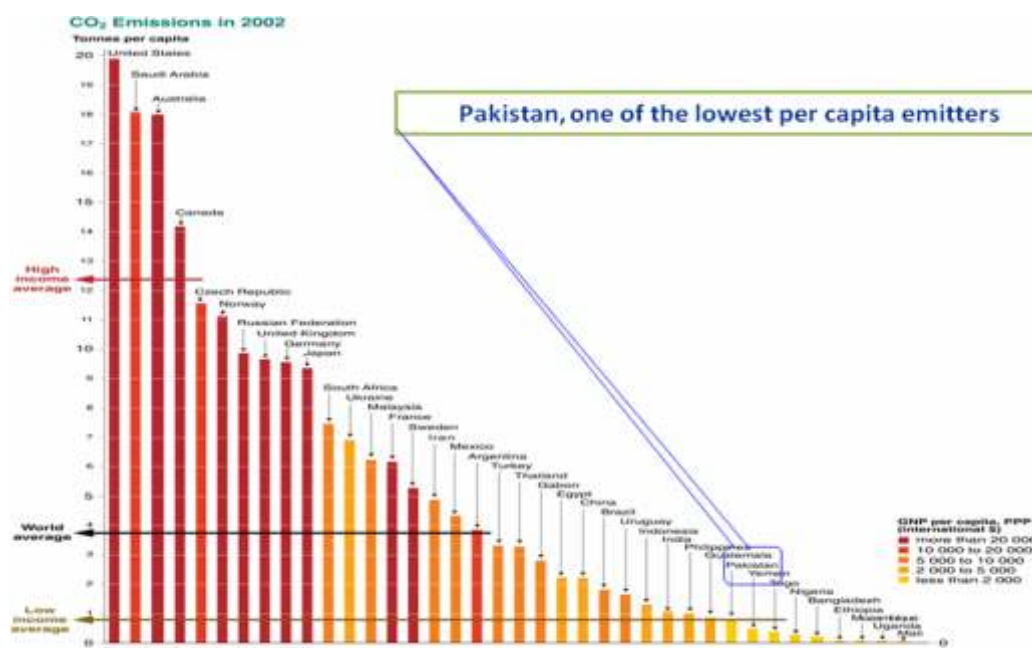
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The climatic variations may result intense and more frequent storms, frequent or prolonged cycles of flooding and drought, melting of polar caps and glaciers, inundation of low lying coastal areas, reduced agricultural output, extinction or migration of many species, increased water scarcity and increased health risks.

South Asia is amongst the most vulnerable regions due to its geo-morphological, socio-economic and other environmental features. By the year 2030, South Asia may observe higher annual mean temperature increase between 1.7°C - 2°C in coastal areas with more rainfall up to 5-10 days in all regions, risk of floods and predicted continuation in sea level rise at a rate of 1.3 mm/year. The agriculture production sector would face negative impact due to changed CO2 concentration and precipitation patterns.

The impacts of climate change are uncertain but pretty clear in case of South Asia in the form of extreme rainfall events (cloud bursts, unseasonal and variable extreme rains, flooding) and changed trend in mean temperatures negatively impacting the crops and intensification of tropical cyclones/sea surges because of rising temperatures. Pakistan is one of the most affected countries and its recent floods in the years 2010 and 2011 followed by prolonged seasonal change depicts climatic variation in the region and led the problem of climate refugee in the region. The German Watch released "The Global Climate Index Measures (who suffers most from extreme weather events)" whereby Pakistan was listed as the number 1 most affected country in the world in the year 2010 ("Climate Catastrophe" in Pakistan) and ranked at number 8 in the 10 countries most affected during the period of 1991-2010. The South Asian countries have very low contribution towards CO2 emissions but the scale of suffering is quite high. For the year 2002, exhibit 2 reflects a very low level CO2 contribution from India, Pakistan and Bangladesh vis-a-vis highest level of emissions from United States of America (USA), Saudi Arabia, Australia and Canada. The other South Asian countries have very little or negligible emission. The South Asia is present on the lower most emission side and developed nations are on higher most emission side on the graph.

Exhibit 2 : Contribution of South Asia towards Global CO2 Emissions



South Asia is home to over one fifth of the world population where high rates of population growth and natural resource degradation with continuing high rates of poverty and food insecurity challenges, has made it one of the most vulnerable regions to the impacts of climate change. While climate change is generally acknowledged as a threat to the region, Asia as a whole in general and South Asian States in particular have not responded forcefully or in unity to this challenge. Many governments do not see this threat as urgent or consider it an area of high priority and look at advanced industrial countries to take on greater responsibility for meeting this global challenge. The coping capacity of rural poor, especially in marginal areas, is even poorer and there is a need to mainstream the good practices for adaptation to climate change into sustainable development planning in the region. Therefore, only an improved understanding of the climate change impacts and vulnerability, adaptation practices and mitigation measures can help the process to coping with climate change.

4.2 *Challenges and Barriers in Responding Climate Change*

South Asia is facing the collective action dilemma in responding climate change adaptation as well as mitigation. There is a perception not to assume an unfair burden by contributing more than its "fair share" of carbon emission reductions. The past and present grey areas of priorities, basic understanding of subject matter, personal involvement and commitments of top political leaders are also an important driving force in shaping forward leaning policies to cope with the climate change in individual member states, in particular, and as a whole for the region in general. The way climate change policies are framed can have a decisive impact on the way public view them. Therefore a link, missing at present, should be sought out between climate change and economic growth as an integral part of national and regional visions for strategic economic perspectives.

The relationship between the central and the state or local governments often creates political obstacles to enacting or implementing effective climate change policies. These political differences in SAARC member states raised significant obstacles to serious collaboration on climate change. The low literacy ration at community level together with poor institutional design, capacities and performance are critical limitations for the adaptation agenda in the region.

When transitioning to low carbon energy sources, each economy will face its own set of challenges resulting from factors as varied as their industrial makeup, domestic natural resource base, energy profile, demographic and socioeconomic trends etc. There will be barriers to technology deployment, social change and investment. A key concern, in the region for example, is how to extend energy services to grass root level in a cost-effective way as well as with reduced climatic impact. In some countries, current regulatory structures are not in line with the long term goals and vision of climate change and energy. High cost associated with advanced technologies is one of economic barriers in minimizing the emissions. In addition, the lack of economic incentives and an effective price-signalling mechanism contributes to the difficulty in facilitating the emission reduction.

The poor progress towards incentive based climate change mitigation i.e. CDM mechanism, from all South Asian countries except India, is because of the basic failure of institutional set up, poor understating at political level, low level of mass-awareness, and unavailability of technical human resources. This led not only low level of regional participation towards global actions but also remained unable to maximize their fiscal benefits and strengthen economy through the financial flow from Annex-I to Annex-II.

4.3 *Dynamics of Adaptation and Mitigation Responses*

Developing countries are going to bear the brunt of climate change and suffer most from its negative impacts. Global conventions are not sufficiently effective to halt the increase of atmospheric greenhouse gases (GHG) concentrations; and we now accept that primary drivers of climate change are not going to stop. Mitigation efforts will, therefore, only provide a partial softening of the effects of climate change. Large percentages of developing countries populations, including South Asians, depend upon agriculture for their livelihood. Climate change is already affecting agriculture in these countries negatively and this situation is likely to worsen. Mitigation measures in the agriculture and forestry sectors are generating much interest as a potential source for additional income to otherwise weak rural areas and as a means of fueling adaptation to climate change. For people, today, adaptation will be necessary to address impacts resulting from the warming which is already unavoidable due to past emissions. A wide array of adaptation options is available, but more extensive adaptation than is currently occurring is required to reduce vulnerability to future climate change. There are barriers, limits and costs, and these are not fully understood. Future vulnerability depends not only on climate change but also on development pathway. Sustainable development can reduce vulnerability to climate change, and climate change could impede nations' abilities to achieve sustainable development pathways. Many impacts can be avoided, reduced or delayed by mitigation. Even the most stringent mitigation efforts cannot avoid further impacts of climate change in the next few decades, which makes adaptation essential, particularly, in addressing near-term impacts. Unmitigated climate change would, in long term, be likely to exceed the capacity of natural, managed and human systems to adapt.

This suggests the value of a portfolio or mix of strategies that includes mitigation, adaptation, technological development (to enhance both adaptation and mitigation) and research (on climate science, impacts, adaptation and mitigation). Such portfolios could combine policies with incentive based approaches, and actions at all levels from the individual citizen through to national governments and international organizations.

4.4 *Carbon Trade Mechanism*

The concept of Carbon Trade and its mechanism was first introduced, comprehensively, in Kyoto Protocol, in the form of emissions' trading for the purpose of global climate change mitigation response. The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change (UNFCCC) and signed by 169 countries and other government entities (as of year ended 2006), who between them accounts for 55% of greenhouse gases emissions. Major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European community for reducing greenhouse gases (GHG) emissions. These reductions amount to an average of five per cent against 1990 levels over the five-year period from 2008-2012.

The mechanisms under Kyoto Protocol specifically targets GHG emissions and serve as incentive based mitigation response to climate change; thus, allowing trading in the form of Certified Emission Reductions (CERs). Compliance Market under Kyoto based mandatory system developed mitigation incentive based mitigation mechanisms i.e. CDM (developed-developing relationship), Joint Implementation (JI, with developed-developed philosophy), REDD+ (developed-developing relationship like CDM, is under evolution for forestry sector) and Nationally Appropriate Mitigation Actions (NAMAs, under negotiation after Copenhagen and may re-shape CDM as sectoral one after 2012).

The emissions trading permits industrial countries to transfer part of their Kyoto emissions reduction obligations to other nations, in exchange for payments. Generally, it is used for Carbon Neutral Programmes in industrialized world.

The generation of carbon credits results in efficiency and conservation, carbon free and reduced carbon energy sources, and carbon capture and sequestration through Cap and Trade and market based controls including voluntary carbon dioxide Cap and Trade approaches. The South Asian states are enlisted in Annex-II with the edge of earning foreign exchange for their emission reduction projects.

5. CARBON TRADE IN SOUTH ASIA

5.1 *Carbon Trade Potential and its Benefits*

Emission trading is emerging as a key instrument to reduce GHG emissions and allows parties to buy and sell permits for emissions and earn credits for reductions. The South Asia has a tremendous potential for carbon credit projects in the areas of Grid Connected large Hydro, Wind energy, Bagasse Co-generation (Sugar Mills), Grid Connected Micro Hydro, Off-Grid Micro Hydro, Solar home system & water pumps, Waste in urban sprawls, Sanitary landfills, Commercial & Industrial wastewater, On-farm Biogas, Industrial Ethanol Production, and Forestry. One potential challenge for carbon emissions trading is that it may not solve localized pollution problems. If pollution is concentrated in a particular location and emanates from a particular industry, that pollution might continue to harm the local environment, even if, on balance, national or international emissions are reduced. Therefore, the design and operation of scheme becomes complex when pollution depends upon location. Carbon emissions trading cannot easily be applied to all sectors, such as transport. Although the aviation sector is easier because of the large volumes of emissions from each airline, it is much more difficult with individual cars, which is a significant and growing problem.

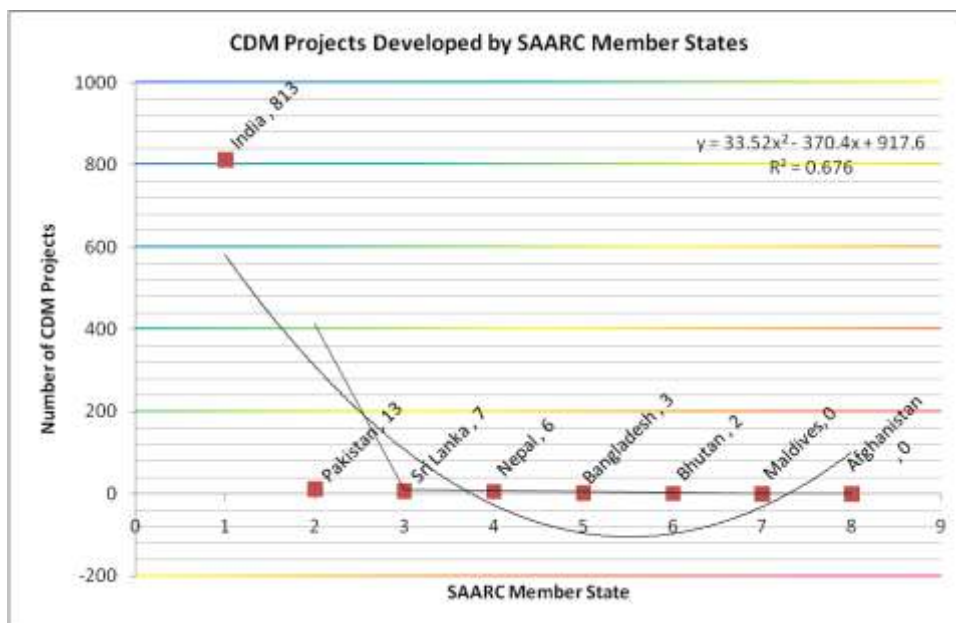
Carbon trading has many benefits for environment as well as private sector; and governments like improved efficiency, promoting the transfer of clean technology and reduced greenhouse gas emissions. As awareness about emissions trading and its benefits is still low, particularly, in South Asia, capacity and awareness building is needed to pursue these opportunities of carbon trading and Clean Development Mechanism (CDM) projects in the region.

5.2 *Current Status of Carbon Trade*

In global CDM market, 4028 projects have been registered with CDM Executive Board across the globe and 913,349,379 CERs have been issued, as of 30th April 2012. China is the global leader with 1930 registered projects representing 47.88% share in overall global CDM project figures with 59.41% share towards global CERs. The second player is India with 813 registered projects representing 20.17% and 96.3% share in global and SAARC member states' CDM projects figures respectively with 15.14% share towards global CERs. South Asia had the opportunity to materialize 842 projects so far for which India has become the leading player with a total of 78.5 million CERs for its registered projects. Chinese projects have received nearly half of all CERs issued to them. India made over Rs. 15,000,000,000 in 2005 just by selling carbon credits to developed country clients. India has generated 30 million carbon credits and 140 million are in pipeline. The REDD+ compliance market mechanism is under evolution process with UNFCCC and, at present, REDD+ projects are being developed worldwide under voluntary carbon market's VCS or CCBA standards. The REDD+ development in India, Pakistan, Nepal and Bhutan is quite good as compare to CDM developments in these countries.

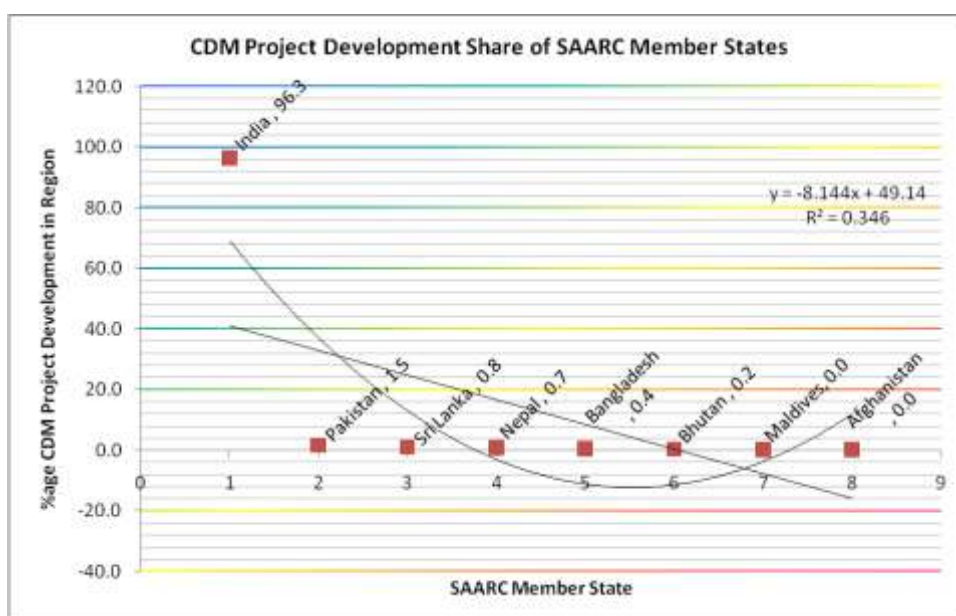
The CDM has been extended during the Durban COP and new CDM projects are now allowed until the year 2017. The overall CDM development dynamics in South Asia are not satisfactory as all the member states have not enjoyed the maximum benefits except for India. Exhibits 3, 4, 5 & 6 highlight CDM related developments in South Asia.

Exhibit 3 : Country Wise CDM Development in South Asia



Data source: UNFCCC Website

Exhibit 4 : Country Wise %age Share in CDM Development in South Asia



Data source: UNFCCC Website

Exhibit 5: CDM Status Based on CERs issued by Host Party

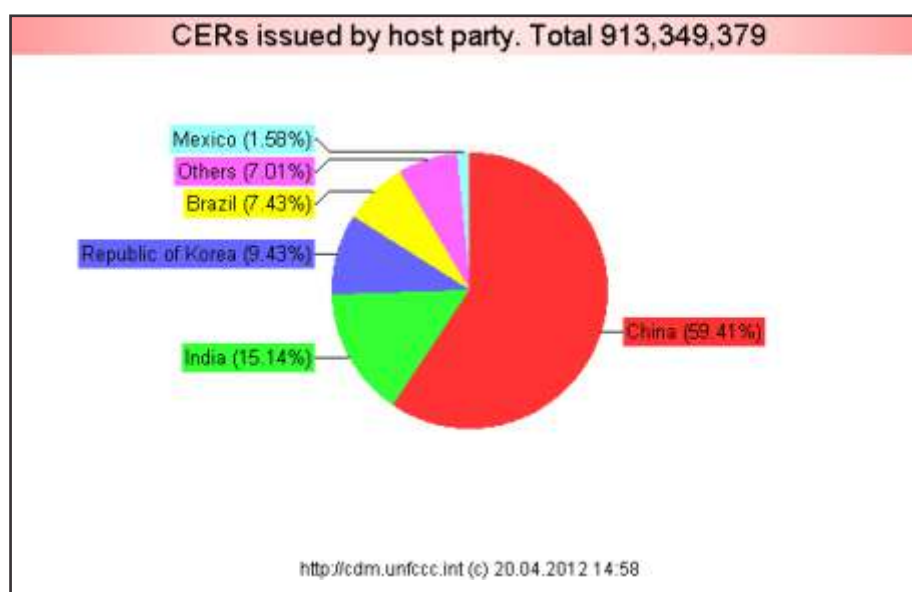
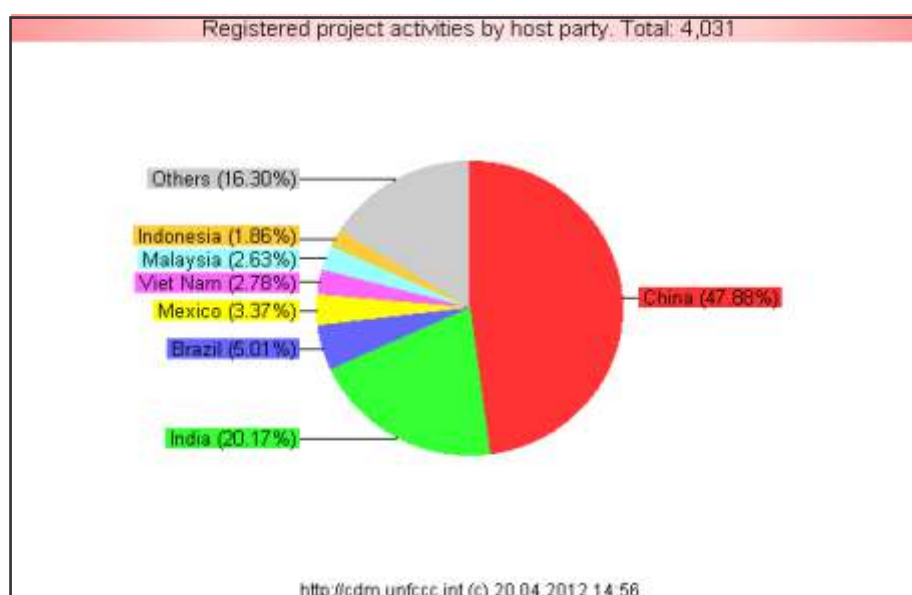


Exhibit 6 : CDM Status by number of Projects



5.3 *Institutional Framework for Mitigation Response*

The UNFCCC has provided an opportunity and comprehensive guidelines to all signatories for development of institutional framework in the form of governance at UN level, implementation at DNAs level with the help of local legislation and third party monitoring at DOEs, for an incentive based mitigation response; thus, contributing to global emission reduction to a vast extent. Although the present scope of activities, procedures and mechanisms under UNFCCC have certain limitations and actual response needed is beyond its boundaries.

The given framework under UNFCCC has good portent in setting trends for developing and implementing institutional frameworks for mitigation agenda at national and regional levels. Although, adaptation response is the major issue and challenge in South Asia perspective but no such comprehensive institutional mechanism could be brought forward to address the need; and the trends of mitigation framework could be applied in responding the adaption agenda especially in South Asia.

5.4 *Barriers in Harnessing Carbon Trade Potential*

There was a global consensus in the beginning of the year 2005 that future design of CDM should consider interests, priorities and concerns of the Asia-Pacific region more effectively; and that CDM should be strengthened in all aspects. It was revealed during a number of global consultations that slow progress in CDM implementation in the region was, primarily, due to low priority given to climate change and CDM in many Asian developing countries, and poor incentives for private sector. Lack of right incentives to private sector in South Asia served as a barrier to investment. Several countries in the region face difficulties in procuring underlying finance for CDM projects due to both country-specific and CDM-specific risks (IGES 2005a). For example, in India, where unilateral CDM projects predominate, difficulties in procuring underlying finances are especially great because of high reliance on domestic capital.

CDM and other Carbon related projects have tremendous opportunities and potential in South Asia as progress in India is evident. However, a very little information and knowledge was shared about potential CDM opportunities in all member states except India. In line with its mandatory functions, all member states' DNA had to prepare a CDM operational strategy, which then had to be approved by the relevant government in the region for which many states failed to respond timely and effectively due to political and technical problems in respective homelands.

In most of the DNA cases, the PDD development and approval process was complex and certain anomalies found in the procedures. Although, an incentive of 'no income tax or duty' on transfer or sale of CER was part of the operational strategy in many states to attract investors but the other system was unable to address the real needs for the same purpose. The system of approval in many countries remained fully immature and time consuming due to unnecessary delays and confusion in the procedures at DNA level.

One of other major problems was institutional setup in member states. The design features, capacities and activities of DNAs were not appropriate and could not be rationalized yet in all cases except India. The DNAs in all member states, except India, are still lacking the appropriate number of technical and other support in order to meet the real need in the field of CDM in South Asia. The procedure for project appraisal needs to be improved and proponent is required to be

well informed. The DNA should take responsibility to provide all related updated version material / guidance to the proponent on priority that would help in proper documentation and avoid any congestion for any change of PDD or methodology requirement. The limitations for provision of technical in-house expertise to deal with baselines and other technical matters remained critical and difficult problem in the region. Although a number of institutional capacity building programme were run in some parts of the region but very much limited in real scope and it has yet to develop a systematic awareness raising and capacity building programme in the region.

Similarly, keeping in view the current status of REDD+ compliance procedures, it is the right time to embark on certain capacity building and awareness raising programmes for REDD+ development in South Asia. The SAARC Chamber of Commerce and Industry (SCCI) could be instrumental to gear up CDM and REDD+ in the region.

5.5 *Role of Stakeholders*

There is a lack of awareness on CDM among potential project developers and stakeholders; such as industries, NGOs, local authorities, and governmental organizations. Unfortunately, the emphasis on the promotional activities by the national DNAs is still lacking. Currently, the only little information is available on country specific CDM websites.

Non-governmental organizations in the region, such as the WWF, IUCN, CDM Watch, and many local non-profit organizations could play an important role in promoting and raising awareness of the sustainability of CDM projects. This may be through monitoring listed CDM projects, participating in local and international stakeholder consultations, or taking an active role in project development.

The academic institutions and consulting firms should be taken on board for their technical skills enhancement in order to provide technical resources, especially, in all member states except India for CDM project development; and to address the projects' sustainability issues in a best way. The DNAs should play its important role in regard whereas the role of SCCI could be instrumental in raising the graph of progress in South Asia not only for CDM but also for REDD+ development.

6. CONCLUSION

The South Asian countries have very low contribution towards CO₂ emissions but the scale of suffering is quite high. South Asia is facing collective action dilemma in responding the climate change adaptation as well as mitigation. The poor progress towards incentive based climate change mitigation, i.e. CDM mechanism, from all South Asian countries except India, is because of the basic failure of institutional setup, poor understating at political level, low level of mass-awareness, and unavailability of technical human resources.

The South Asia has a tremendous potential for carbon credit projects in the areas of Grid Connected large Hydro, Wind energy, Bagasse Co-generation (Sugar Mills), Grid Connected Micro Hydro, Off-Grid Micro Hydro, Solar home system & water pumps, Waste in urban sprawls, Sanitary landfills, Commercial & Industrial wastewater, On-farm Biogas, Industrial Ethanol Production, and Forestry.

In global CDM market, 4028 projects have been registered with CDM Executive Board across the globe and 913,349,379 CERs have been issued, as of 30th April 2012. The CDM has been extended during the Durban COP and new CDM projects are now allowed until year 2015. The overall CDM development dynamics in South Asia are not satisfactory as all the member states have not enjoyed the maximum benefits except for India. Like many other regions in the world, South Asia has also technical, financial, sustainability and institutional barriers in order to harness its real carbon trade potential. The given framework under UNFCCC has good portent in setting trends for developing and implementing institutional frameworks for mitigation agenda at national and regional levels.

There is a lack of awareness on CDM among potential project developers and stakeholders; such as industries, NGOs, local authorities, and governmental organizations. The academic institutions and consulting firms should be taken on board for their technical skills enhancement in order to provide technical resources, especially, in all member states except India for CDM project development and to address the projects' sustainability issues in a best way. The DNAs should play its important role in this regard whereas the role of SCCI could be instrumental in raising the graph of progress in South Asia not only for CDM but also for REDD+ development.

Although a number of institutional and stakeholders' capacity building programme were run in some parts of the region but very much limited in real scope and it has yet to develop a systematic awareness raising and capacity building programme in the region including the REDD+ agenda. Therefore, the SAARC Chamber of Commerce and Industry (SCCI) could be instrumental to gear up CDM and REDD+ in the region and bring up private investors on board for regional investments and co-benefits.

7. RECOMMENDATIONS: THE WAY FORWARD

7.1 *Provision of Resources*

- (1) All member states, except India, need immediate attention to allocate sufficient funds for the increase of in-house capacity and extending the scope of its activities in order to harness the real potential.
- (2) The financial barriers for project development could be resolved with regional investments through special intervention at SAARC level. The Carbon Trade Fund may be created at the level of SCCI.
- (3) Special financial assistance may be acquired in the form of donor grants for special programmes for awareness raising, capacity building and enhancing technical skills of available human capital in the region.
- (4) SCCI may take lead on the issues related to awareness rising, capacity building, and mobilizing the regional and global community for the benefit of the region.

7.2 *Application of PPP Concept*

There are certain limitations in government's structural framework and fiscal constraints in South Asia for CDM related developments, the PPP concept could be instrumental for harnessing the real potential of the region and bringing foreign exchange through developed-developing flow. The concept of Public-private partnership is already well working in case of CDM related projects in the region like Lahore Compost Project in Pakistan. It is the need of the hour to apply this concept with regional investments for taking maximum benefits from CDM by the year 2015 through development of maximum CDM and REDD+ projects in the region. Private sector in the region has potential and capabilities to materialize the objectives of Carbon Trade in South Asia.

7.3 *Role of SAARC CCI*

- (1) SAARC CCI may take a special initiative for mobilizing regional investments for development of maximum projects in the region.
- (2) SAARC CCI may be instrumental in demanding and creating conducive environment for regional investments.
- (3) SAARC CCI may develop and assist regional cooperation agenda for capacity and project developments.
- (4) SAARC CCI may start a comprehensive institutional and stakeholders' capacity building and awareness raising programme.

7.4 *Capacity Building and Awareness Raising*

- (1) Although a number of institutional capacity building programme were implemented but it has yet to develop a systematic awareness raising and capacity building programme.
- (2) The academic institutions and consulting firms should be taken on board for their technical skills enhancement in order to provide technical resources in the region for CDM and related carbon project development; and to address the projects' sustainability issues in a best way. The DNA should play its important role in this regard and SCCI can be instrumental for special support.
- (3) Regular news, periodic updates and bulletins should be sent / communicated to all potential partners in the region. For this purpose, a comprehensive communication database should be prepared and connected through internet for regular events.
- (4) The use of internet has yet to be given backup support in the region through regular update and hiring of appropriate number of skilled and required staff.

7.5 *Policies and Procedures for Carbon Trade*

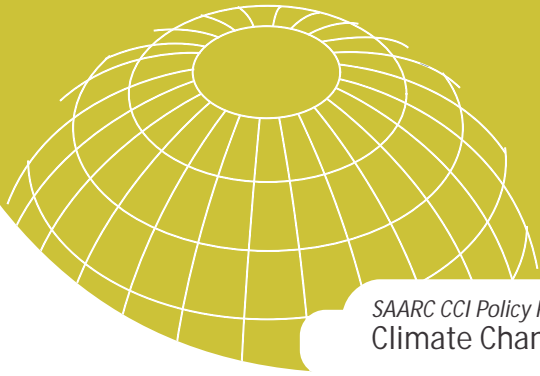
At present, the compliance and voluntary markets have the credit flows from developed to developing nations and there is no such potential to sell credits among regional member states. Therefore, no big policy shift requires for cooperation in the area of Carbon Trading in the region. Only conducive environment can play a pivotal role for private investors to invest at regional level.

The vision for an improved regional economy at SAARC level could be achieved through a regional Carbon Trade Support Policy at SAARC level and SAARC CCI could be instrumental for starting initiatives and certain programmes for development of more CDM projects in accordance with true potential of individual member states.

7.6 *Action Strategy for Promotion of Carbon Trade*

The outcome of this paper rationalizes and recommends cooperation among SAARC member states for harnessing the Carbon Trade potential.

- (1) There is a need to design and implement a regional level Institutional and Stakeholders Capacity Building Programme.
- (2) A comprehensive plan for Communication & Outreach is required for Information Dissemination at national and regional levels.
- (3) There is a growing need to establish a vibrant SAARC Carbon Forum (SCF) for all stakeholders. This will act as a hub for quick information dissemination and passive motivator for the replication of success stories.
- (4) A massive awareness raising programme needs Seminars and Consultative Workshops for awareness raising and mobilization of key stakeholders.



SAARC CCI Policy Paper Series

Climate Change and Carbon Trade in South Asia

- (5) Monthly news bulletins by SAARC CCI and relevant DNAs especially with success stories from different member states would act as a passive motivator for maximum project developments and awareness rising.
- (6) Print and electronic media should be used for promotion of CDM and REDD+ related success stories and dynamics of PPP in the region.



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