

A Report on the 7th Annual Regional Meeting 2008

Climate Justice for the Realisation of MDGs

Southern Perspectives & Voices



"The earth provides for every man's need, but not for every man's greed"

– Mahatma Gandhi





CLIMATE JUSTICE FOR THE REALISATION OF MDGS: SOUTHERN PERSPECTIVES AND VOICES

A Report on the Seventh Annual Regional Meeting OneWorld South Asia

8 - 9 February 2008



Table of Contents

Director's Message	5
Executive Summary of Report	6
1. Introduction: OWSA for Climate Justice	
1.1 A Review of OWSA Activities	9
1.2 New Imperatives: Bringing together MDGs and Climate Change	11
1.3 OWSA's Seventh Annual Regional Meeting on 'Climate Justice for Realisation of the MDGs: Southern Perspectives and Voices	13
2. Climate Change, Climate Justice and the South	
2.1 Climate Change: The Phenomenon, Causes and Impacts	15
2.2 Responding to Climate Change Challenges: Emerging Framework and Current Status	20
2.3 Climate Justice and the South	23
2.4 Climate Change, Development and South Asia	28
3. Climate Justice for the Realisation of MDGs: Southern Perspectives and Voices	
3.1 Southern Voices and Perspectives	31
3.2 Impact on South Asia's Food Security, Income Opportunities and Livelihood Resources	37
3.3 Mitigation and Adaptation Strategies in South Asia's Geo-climatic and Cultural Context	39
3.4 Climate Change Challenges in South Asian Development Initiatives: Establishing Inter-Sectoral Relationships	40
3.5 Inclusion of South Asian Grassroots Voices in the Climate Change Dialogue	42
3.6 Role of ICTs and Emerging Media in Addressing Climate Change Challenges	43
3.7 Collaborations and Partnerships for Development and Equitable Climate Change Mitigation Policy and Initiatives	45



4. Conclusions and Way Forward	46
5. Position Document	49
Annexures	
Climate Change Fact File	52
Agenda	56
List of Participants	60
Participants' Feedback	65



Director's Message

It is an honour to present before you the report of our Seventh Annual Regional Meeting, held at New Delhi, India on the theme “Climate Justice for the Realisation of MDGs: Southern Perspectives and Voices.”

Climate change as a global concern is intrinsic to achieving the Millennium Development Goals. South Asia, identified as a potential hotspot, is highly vulnerable to the impact of climate change, and this in turn puts into jeopardy every little chance that we have of realising MDGs in the region.

Recent trends and evidences demonstrate that the marginalised and poor communities are the least able to adapt or cope with the impact of climate change. In addition to the gloomy climatologic change projections in near and medium term future, climate change would wreak havoc in the agriculture system of South Asia region – with resultant decrease in crop yield up to 30 percent. This alone, combined with the influence of rapid population growth can significantly add to increasing hunger and starvation in the region.

High levels of poverty and slow progress towards the achievement of development targets, coupled with its susceptibility to climate change, places the South Asian region in an extremely delicate situation. This state is rendered far more complex in the light of the controversial and debatable relationship between climate change and prevailing development paths being pursued at present.

The countries of South Asia therefore need to take a closer look at the implications of the climate change vis-à-vis their development priorities; and build a balanced perspective on inclusive growth, development and climate justice. The potential of Information and Communication Technologies is especially relevant in this regard. New technologies and a collective pool of knowledge can help build adaptation and mitigation efforts that holistically address both development and climate change challenges.

The Seventh Annual Regional Meeting of OneWorld South Asia was aimed to enable a platform for South Asian dialogue on these crucial issues. We are happy to note that your active engagement and the presence of experts from diverse sectors have made this endeavour a remarkable success.

I sincerely believe that we have succeeded in taking further this debate by establishing the significance of both objectives i.e. climate change mitigation and adaptation issues and the urgency of fulfilling development requirements of the South (particularly South Asia). In doing so, we have also succeeded in drawing attention to the need for enhanced Southern participation and activism within this global dialogue, and exploring new avenues for engagement.

Drawing upon the deliberations and commitments of our partners and leveraging synergies that have emerged from this Seventh Annual Regional Meeting, OneWorld South Asia hopes to take forward the agenda of formulating knowledge assisted inclusive strategies for mitigating and adapting to climate change challenges, and enabling grassroots voices from South Asia in the climate change dialogue.

I take this opportunity to express my sincere gratitude to all the participants of the Seventh Annual Regional Meeting, and also to those who for some reason could not make it but remained supportive in our endeavour throughout.

Naimur Rahman



Executive Summary

Rationale

The Annual Regional Meeting (ARM) is an annual activity of OneWorld South Asia (OWSA). It aims to provide a platform for knowledge sharing and collaborative engagement on ICT-assisted progress towards MDGs and beyond, in the South Asian region.

The choice of the theme for the Seventh ARM on “Climate Justice for Realisation of the MDGs: Southern Voices and Perspectives” held in New Delhi, India on 8-9 February 2008, was based on the recognition of implications that the global debate on climate change hold for realisation of MDGs in the region. The purpose of ARM 2008 was to establish the relevance of both claims – climate justice and development – for the South (South Asia in particular), identify the contentions between the two in the light of ongoing climate change negotiations, underline the need for continuing and enhanced Southern participation and activism, and explore new avenues for engagement.

Proceedings

More than 150 participants from South Asia and outside the subcontinent attended the meeting. The presence of development practitioners, government and private sector representatives, journalists, grassroots activists, academics and research scholars - experts on health, education, livelihood, water and environment - facilitated enriching discussions on dealing with the multi-dimensional challenges posed by climate change. About one third of the participants were from outside India, another third represented community based organisations and activists focusing on campaigns for rights of women, dalits, adivasis, the landless and other marginalised groups.

The two-day event was structured around an inaugural session and a plenary session followed by six parallel thematic sessions, where the focus was on aggregating experience and knowledge around climate change impact and its linkages to development.

The thematic sessions, listed below, aimed to integrate locale-specific, geo-cultural contexts and establish inter-sectoral relationships, while also seeking effective, inclusive, sustainable solutions.

1. Impact on South Asia’s Food Security, Income Opportunities and Livelihood Resources
2. Mitigation and Adaptation Strategies in South Asia’s Geo-climatic and Cultural Context
3. Climate Change Challenges in South Asian Development Initiatives: Establishing Inter-Sectoral Relationships
4. Inclusion of South Asian Grassroots Voices in the Climate Change Dialogue
5. Role of ICTs and Emerging Media in Addressing Climate Change Challenges
6. Collaborations and Partnerships for Development and Equitable Climate Change Mitigation Policy and Initiatives.

Each session comprised of presentations by a distinguished panel of speakers who shared expertise and experience. This was followed by discussion on the vital links between climate justice and MDGs.

There was a common and undisputed view at the Seventh ARM of OneWorld South Asia that climate change has global implications and is therefore a global challenge. The deliberations brought into sharp relief the dichotomy between global demands for mitigation and the more urgent, local imperative for survival and adaptation in response to unprecedented disasters. It was also widely recognised that the impact of climate change is very severely felt on poorer countries and marginalised sections in the countryside. Even without climatic change, environmental impact of development processes fuelled by the quest for economic growth is a considerable threat to food security and livelihoods, and effects of climate change will exacerbate the adverse implications further.

While emphasising the greater role and responsibilities of rich and developed nations to work for and spare



substantial resources towards the mitigation measures, including technology development and its transfer into public domain, there was the recognition that developing countries cannot afford to be complacent.

In addition to working towards the eventual realignment of their development models with climate stabilisation demands, it is important for the South Asian countries to safeguard the lives and rights of grassroots and indigenous communities, and to establish symbiotic relationships and systems that enable mitigation and adaptation at local and regional levels. Decentralised environmental planning, including grassroots perspectives and priorities are critical in effectively responding to climate change challenges.

The sessions highlighted an urgent need to identify regional and local indicators to assess specific climate change impacts, highlight local initiatives for mitigation and adaptation, and promote research and development towards more sustainable solutions.

The relevance of Information and Communication Technology, with its range of tools supporting traditional to new media, was cited in the context of sharing of knowledge and experiences, accelerating research, building capacities to understand, communicate about and respond to climate change implications, networking and advocacy for policy change, and multi-stakeholder collaborations towards solutions and actions that span sectors and domains in the development-climate justice space.

Along with broad-based and participatory legal, institutional and monitoring mechanisms pertaining to development and climate change, there exists the parallel need to innovate practical solutions as well. The relevance of technological platforms to facilitate collaborations and partnerships was highlighted, as well as the need for a South Asian platform on climate justice and sustainable development.

Conclusions

The concluding session saw a presentation of the document “OneWorld South Asia’s Position on Climate Justice”, embodying the synthesis of our own work and perspectives on the climate challenge with the deliberations and recommendations of the thematic sessions.

Three key areas were singled out for immediate attention in the context of possible collaboration and action:

- *Develop and document knowledge on adaptation*, effectively utilising the potential of ICTs to accelerate and catalyse the process.
- *Influence policy*, institutions and implementation mechanisms through intensified advocacy to influence governments both in the North and South.
- *Work in partnerships*, to sensitise CSOs and grassroots organisations toward an understanding of global and local interactions between climate change and development through awareness building programmes, and engage different sectors in mitigation measures and adaptive mechanisms at the grassroots.

Way Forward

OneWorld South Asia aims to leverage its key ICT niche, to engage and amplify people’s voices from South Asia in the world debate on climate change – for this it intends to use its online platforms and channels for analysis and assimilation of climatology knowledge and for leading discussion, collaboration and multi-stakeholder consensus on climate change and the realisation of MDGs.

OWSA aims to enable two-way sharing of relevant content across South Asian countries leading to a community-based, community-owned and community-managed knowledge repository on climate change. OWSA would also direct efforts to create community-friendly media tools, and also to build capacities of grassroots communities to make best use of these tools. The idea is to disseminate relevant knowledge resources in simple language, using multi-channel new and emerging media as well as traditional media. OWSA looks forward to drawing upon the experiences and commitment of its partners and leveraging synergies that emerged from ARM 2008 - towards a holistic vision on climate justice and sustainable development.



1 Introduction: OWSA for Climate Justice

1.1 A Review of OWSA Activities

1.2 New Imperatives: Bringing together MDGs and Climate Change

1.3 OWSA's Seventh Annual Regional Meeting on "Climate Justice for the Realisation of MDGs: Southern Perspectives and Voices"



1.1 A Review of OWSA Activities

About OneWorld South Asia

OneWorld South Asia (OWSA) is the South Asian Centre of OneWorld International Foundation that uses the democratic potential of Information and Communication Technologies (ICTs) to promote sustainable development and human rights in South Asia.

With a strong civil society network, OWSA works towards *developing knowledge connectivity* for the realisation of the Millennium Development Goals (MDGs) through traditional and emerging media; *facilitating ICT assisted communication opportunities* to strengthen the voices of the poor; and *building ICT toolsets and capacities* to respond to the needs of grassroots communities.

OWSA works to achieve these goals through three major programme interventions: 'voicing the voiceless' through grassroots communications; channelising information and knowledge for developmental efforts through new media technologies; and enhancing partners' capacity to communicate and advocate for inclusive and pro-poor ICT policies.

As OWSA steps into its eighth year, the work and achievements of the organisation can be reviewed in the context of progress on the MDGs in the South Asian region.

OWSA views the MDGs as a holistic, inter-related framework for sustainable development and aims to mainstream ICTs within this paradigm to accelerate progress towards these goals. Enabling grassroots voices in the policy dialogue on MDGs is an integral part of this endeavour.

Over the years OWSA has worked towards creating a platform for promoting ICT for development, as well as engaging with partners and increasing interface with other organisations and agencies in this area by establishing communities of practice and knowledge-based advocacy on the MDGs.

In the year gone by, OWSA has been working in close collaboration with its partners in South Asia towards formulating ICT solutions, providing technical skills and building capacities of civil society organisations, community based groups and collectives, and also creating platforms for knowledge sharing and advocacy on a variety of issues in the region. The focus has primarily been to consolidate and upscale past achievements, innovate on newer ideas, and demonstrate the efficacy of ICT applications within development discourse.

Some of the significant accomplishments of OWSA in the past year are described below.

The LifeLines-India Initiative

This is a digital inclusion programme in agro-business sector in partnership with British Telecom, CISCO, TARAhaat and ISAP. It is a phone-based service that allows farmers to record and receive answers to their farm related queries in their local language. LifeLines-India today caters to more than 400 queries a day, using an innovative mix of telephony and web applications, and has transformed the lives of 40,000 farmers in north and central India. The success of LifeLines in agriculture has led to its extension to the field of Education, with resources and expertise support from USAID, British Telecom, Cisco, and in partnership with QUEST Alliance and Vikramshila Education Resource Society.

Ek-Duniya Web Services

The local language web-hosting and communication platform now supports more than 100 dynamic websites of civil society partners. This innovative framework was adopted by the new Commonwealth Connect programme to demonstrate the efficacy of technology application in communication, knowledge sharing and collaboration, following successful implementation of the pilot project on the use of ICTs for change in Bangladesh, Sri Lanka and India in the aftermath of the Tsunami.



GCAP Global Web Platform

Ek Duniya Web Services also paved the way for OWSA to manage the global web platform of Global Call to Action against Poverty (GCAP), inherited in a nascent stage and now built to a robust global platform sustainable on its own.

Ek Duniya Ek Awaaz

OWSA's multi-dimensional community oriented radio programme *Ek Duniya Ek Awaaz* builds the capacity of Community Based Organisations in the use of audio tools as means for social and economic empowerment, given the understanding that radio remains the most powerful mass medium in South Asia for outreach and rapid diffusion of messages. *Ek Duniya Ek Awaaz* achieved a milestone in August 2007 with the broadcast of its 100th episode.

Support to Community-oriented Radio Programmes

OWSA has supported similar initiatives in Nepal and Sri Lanka – in collaboration with our partners FIT Nepal and Dambedeniya Development Foundation. In Nepal, the programme *Ek Sansaar Ek Awaaz* is now poised to mature into full-fledged ICT-based Community Radio Station – with support from Radio Active, UK and BBC. There are plans to extend similar effort in Bangladesh in partnership with BNNRC.

Community Radio Training Workshops

Training workshops on radio programming and production have helped develop a cadre of grassroots community radio broadcasters. This initiative ranges from OWSA's work at Chanderi, Madhya Pradesh in partnership with UNESCO, to its work with the Community Radio Forum at Dharamsala, Himachal Pradesh. There are further plans to build a niche radio initiative with partners like Mountain Forum, BNNRC and FIT Nepal.

Audio Content Exchange Bank

Traditional with new media has been effectively integrated in web training and radio production

workshops. The new web-based Audio Content Exchange Bank is now on-line at <http://radio.ekduniya.net>. OWSA also offers support to colleagues in OneWorld Africa to operate their web-based radio initiative.

OneWorld South Asia Portal

The OneWorld South Asia portal is considered a flagship source of development information, analyses and resources. The portal closed the previous year with 30,000 unique visitors in a month. Knowledge connectivity facilitated by the OWSA portal has been effectively leveraged to take online advocacy towards realising the MDGs, and we have been working closely with the United Nations Millennium Campaign towards this goal.

South Asia MDG Watch

The fortnightly newsletter South Asia MDG Watch, published with support from United Nations Millennium Campaign, is a new effort to inform audiences on the progress of the Millennium Development Goals in the South Asia region. A current reach of over 5,000 key recipients include national governments, civil society, journalists, activists, academics, bi-lateral and multilateral agencies and the private sector.

Online Platforms, Products and Adaptation of New Technologies

Online platforms and products have been revamped to highlight issues that are of concern closer to our homes, on issues of human rights, on the impact of climate change on development in the region. In this context, OWSA has launched the *South Asian Feminist Portal* in partnership with SANGAT, a platform that will bring together campaigns, theory, praxis and debate from the region. Work is also underway on a *South Asian Development Knowledge Repository* that will make possible the acquisition and dissemination of development content through multiple channels and processes. OWSA has also been working with international technology leaders to explore adaptation of new technologies for the benefit of rural communities in South Asia. A strategic MoU with the High Level Commission on IT has been signed to assist the Government of Nepal with our ICT skills.



1.2 New Imperatives: Bringing Together MDGs and Climate Change Concerns

The MDGs serve as the overarching framework and references for OWSA activities. Pursuit of the development goals remains a priority in South Asia, given that most countries of the region lag far behind in the race to achieve the MDGs. For instance, India has travelled less than half the distance to its 2015 target for reducing poverty, Sri Lanka with the lowest poverty rate in South Asia has witnessed an upward trend in poverty levels, and the already high levels of poverty in Bangladesh continue to rise.

Climate change as a concern is also intrinsic to the MDGs, as a key dimension of Goal 7 pertaining to environmental sustainability. It is linked with issues of forest and land degradation, air and water pollution, freshwater shortage, and also with the aspects of health, food security, and so forth.

Climate change also has very real implications for South Asia, which has been identified as a potential hotspot for global warming. According to the latest reports by the Inter-Governmental Panel on Climate Change by the year 2100 millions of people in the region will find their lands and homes inundated. The Ganga, Brahmaputra and Indus would become seasonal rivers; the Himalayan glaciers will continue to retreat, and will disappear by the year 2035. Water tables will continue to decline, and with rising levels of salinity, would lead to water shortages. Water-borne diseases such as cholera and other diseases such as dengue and malaria will continue to rise. Crop productivity will fall and incidence of starvation would be on the rise. Increasing instances of heat-related mortality are also predicted with the rising temperatures.

The impact of climate change is compounded by the incidence of poverty and other vulnerabilities, which serve as both the drivers and the outcomes. In this regard, climate change holds magnified and complex development implications pertaining to access to resources (especially given that the economies of the developing world are more dependent on climate sensitive natural resources), human rights, and the

relationship between the developed and the developing countries.

Some of the other prominent dimensions of the issue of climate justice include conflict between the prevailing development paths and the need for climate change mitigation approaches; the perceived divide between the interests and obligations of the developed and the developing worlds that mar negotiations under the framework conventions on climate change and elsewhere; and the immediate need to secure financial resources that support adaptation of the less developed countries and marginalised groups and communities to climate change impacts.

Thus the impact and implications of climate change are inescapable and inextricably linked with development and even survival concerns. It becomes essential to respond to the broader challenges, especially with reference to those that are specific to the physical and developmental realities of South Asia, and to the developing world or the collective South.

OWSA recognises that the global debate on climate change adds a new dimension to the challenge of realising the MDGs. South Asia (as the rest of the developing world) is faced with the dilemma of balancing the demands for mitigation and meeting development goals in the region. It may also be said that the pre-eminent global discourse does not necessarily highlight this southern dilemma, or the southern voiced principle of common but differentiated responsibility on global climate justice.

The position adopted by OWSA underlines the importance for the countries and communities of the South to take a closer look at the implications of the climate change dialogue and the need for climate justice beyond the environmental paradigm, and to identify the impact on development and growth. There is a need for enhanced participation and activism by the South to realign climate change negotiations and to strike new bargains conducive to meeting the long-term goals of environmental stability and sustainability,



contributing to poverty alleviation and achieving the Millennium Development Goals.

As a development network, OWSA identifies information, analyses, advocacy, continued engagement and dialogue, the setting of effective standards and implementation procedures, capacity building, and so forth as constant, if not growing requirements in this space. The centrality of the issue of 'access to knowledge' to address the inter-related issues of climate change mitigation and adaptation vis-à-vis efforts towards poverty eradication and realisation of the MDGs is also brought into sharp focus. With belief in the power of technology and knowledge connectivity, OWSA aims to leverage its key ICT4D niche to include and amplify people's voices from the South, beginning with South Asia, and mainstream these perspectives in the emerging global framework for addressing climate change challenges.

OWSA looks forward to drawing upon the experiences and commitment of its partners and leveraging

synergies to take forward the agenda of sustainable development in South Asia, as well as climate change mitigation and adaptation, supported or not as they could be, through the use of ICTs.

The first step in this endeavour has been in the choice of the theme of OWSA's Seventh Annual Regional Meeting (ARM) in February 2008. The ARM is an annual activity that provides a space for various agencies and individuals, partners and non-partners, engaged in advocacy of developmental issues to congregate, share knowledge, and leverage its benefits through new partnerships to meet common goals.

The ARM also provides a platform to collectively explore and highlight new opportunities by ICTs to voice the voiceless and empower them to participate in processes for sustainable and equitable development in the region.



1.3 OWSA's Seventh Annual Regional Meeting on "Climate Justice for the Realisation of MDGs: Southern Perspectives and Voices"

The choice of the theme of the Seventh Annual Regional Meeting has been an attempt to further the debate on climate justice and the pursuit of MDGs in South Asia, and seek alternatives to the current trade-off. The purpose underlying the organised deliberations was to establish the relevance of both claims – climate justice and development – for the South (South Asia in particular), identify the contentions between the two in the light of ongoing climate change negotiations, underline the need for continuing and enhanced Southern participation and activism, and explore new avenues for engagement.

The intended outcomes of the conference have been identified in the formulation of a position document on 'Climate Justice and the Realisation of the Millennium Development Goals in South Asia', securing online and offline platforms for continued engagement in this debate, identifying new avenues for partnerships, collaborative advocacy and action for climate justice and achieving development goals, and also recognising the utility of and mainstreaming the use of ICTs and emerging media in this context.

The conference was designed to engage development practitioners, policymakers, experts, government and private sector representatives, media and academics on the issue. The structure of the two-day conference was intended to facilitate maximum participation in and ownership of the dialogue, by way of plenaries – a space for high-level dialogues on specific issues, participatory thematic sessions, and a platform for showcasing various initiatives by OWSA and its partners.

Partners brought to the proceedings the value of their expertise, experience, and opportunities for concerted action, contributing their views through papers, presentations, published and audio-visual materials. They also took ownership of the dialogue and the

proceedings by serving in the roles of chairs, moderators, discussants, presenters and rapporteurs for the various sessions.

The ensuing debate has focused on the examination of the linkages between inclusive economic growth, poverty eradication and climate change. A number of concerns were also taken up for detailed examination given their relevance for South Asia. These included delineating the impact of climate change on South Asia's food security, income opportunities and livelihood resources; locating mitigation and adaptation strategies in South Asia's geo-climatic and cultural context; identifying climate change challenges in South Asian development initiatives, especially in terms of exploring inter-sectoral relationships; promoting the inclusion of South Asian grassroots voices in the climate change dialogue; substantiating and exploring further the role of ICTs and emerging media in addressing climate change challenges; and establishing the relevance of collaborations and partnerships for development and equitable climate change mitigation policy and initiatives.

The proceedings of the Seventh Annual Regional Meeting have provided for the clarification and strengthening of an OWSA position on Climate Justice, articulated in this report. The key findings and outcomes of the conference have been incorporated under relevant thematic heads in the following sections. A note of conference proceedings and outcomes is also appended to the report.



2 | Climate Change, Climate Justice and the South

2.1 Climate Change: The
Phenomenon, Causes and Impacts

2.2 Responding to Climate Change
Challenges: Emerging Framework
and Current Status

2.3 Climate Justice and the South
Climate Change, Development and
South Asia



2.1 Climate Change: The Phenomenon, Causes and Impacts

Scientific conclusions and assertions, and statistical and other information contained in this section are derived primarily from the Fourth Assessment Report of the Inter-Governmental Panel on Climate Change, and the United Nations Development Programme's *Human Development Report 2007-08*.

The Phenomenon

Climate is understood to be the average state of the weather – the average temperature, rainfall patterns, days of sunlight, and so forth. Climate change refers to the phenomenon of changes in the Earth's climate over time. In recent usage climate change refers to changes in the modern climate, with concerns over these changes commonly talked of in terms of global warming.

Observations and studies reveal that there has been an increase in the average temperature of the earth's surface and oceans over the past century and a half, which has accelerated over the past few decades. The global average air temperature has risen by between 0.3 to 0.6°C since the late nineteenth century. There has been an increase in the average temperature of the global ocean to depths of at least 3,000 metres. Eleven of the twelve years in the period 1995-2006 feature among the 12 warmest years in the instrumental record of global surface temperature since 1850. Widespread changes in extreme temperatures have also been recorded over the last 50 years, with the decreasing frequency of cold days, cold nights and frost, while hot days, hot nights and heat waves become more frequent.

There are other related developments that have been observed such as the rise in atmospheric water vapour, rise in the global average sea level, and decline in mountain glaciers and snow cover in both hemispheres. The extent of arctic sea ice has been shrinking, average arctic temperatures have increased at almost twice the global average rate in the past 100

years, and there are losses from ice sheets of Greenland and Antarctica.

There have also been marked changes in precipitation trends. Notably, there has been increased precipitation in eastern parts of North and South America, northern Europe and northern and central Asia; and drying in the Sahel, the Mediterranean, southern Africa and parts of Southern Asia. There has also been increased frequency of heavy precipitation events over most land areas. More intense and longer droughts have prevailed over wider areas (particularly in the tropics and the sub-tropics), and intense tropical cyclone activity has also been on the rise (especially in the North Atlantic) since the 1970s.

Identified Causes

Global warming then is the increase in the average temperature of the Earth's near-surface air and oceans in recent decades. This increase in the average temperature of the earth's surface and oceans has been attributed to the concentration of greenhouse gases (that trap heat) and the greenhouse effect.

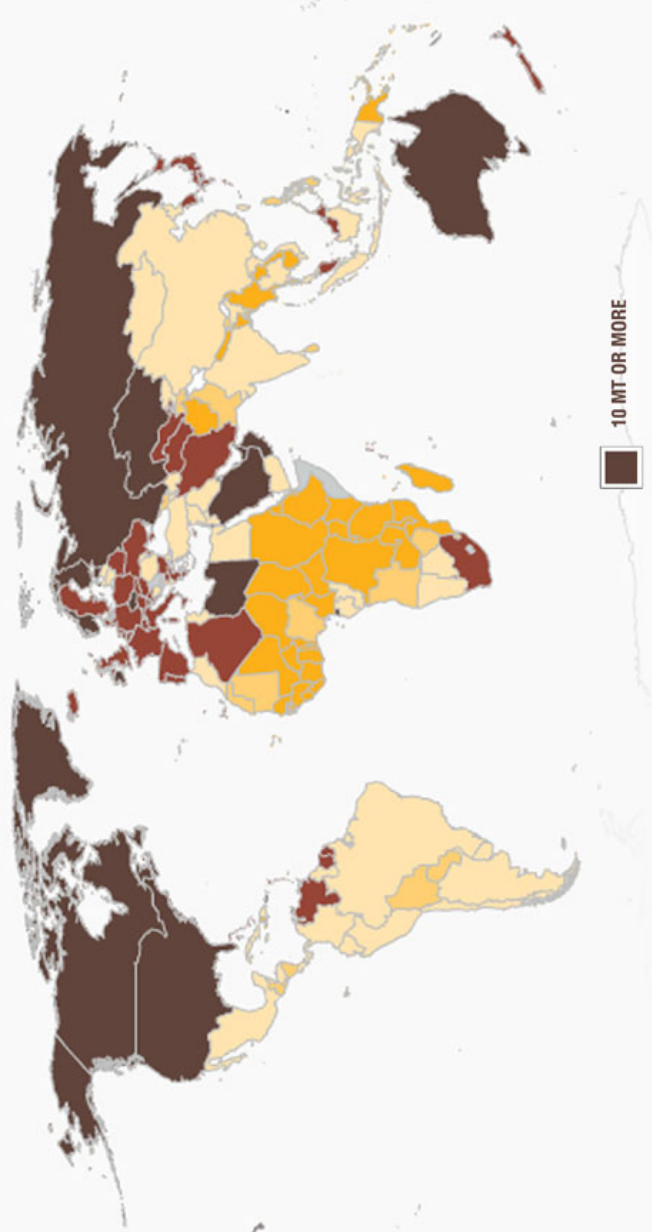
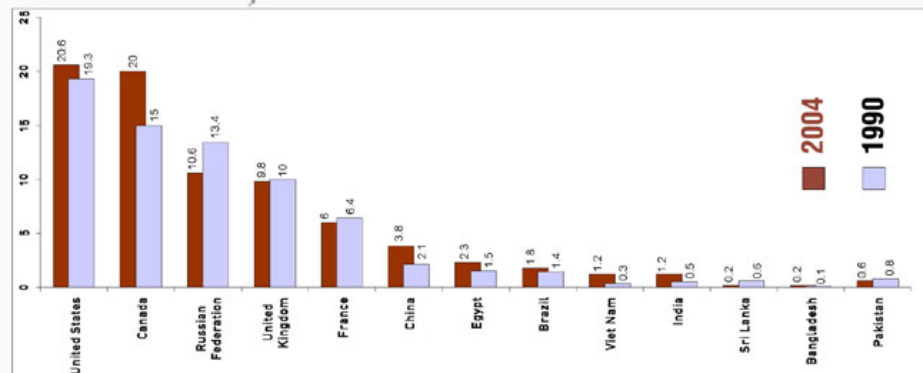
The factors contributing to current global climate change or global warming have included natural causes such as continental drift, volcanoes, ocean currents, the earth's tilt, comets and meteorites, variations in solar radiations, and greenhouse gas concentrations caused by natural and human activity. These greenhouse gas concentrations have been identified as the primary cause of global warming since 1950.

Greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide, ozone and also nitrous oxide, hydro fluorocarbons, per fluorocarbons and chlorofluorocarbons, etc. Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750, with carbon dioxide identified as



RICH COUNTRIES DEEP CARBON FOOTPRINTS

CARBON DIOXIDE EMISSIONS (CO₂), METRIC TONS OF CO₂ PER CAPITA (CDIAC)



CO₂ Emissions

(t CO₂ per capita)

(Source: <http://www.mdgmonitor.org> and <http://hdr.undp.org>)



the most prominent greenhouse gas derived from human activity. For instance, the global atmospheric concentration of carbon dioxide has increased from 280 parts per million in pre-industrial times to 379 parts per million in 2005 (which ratio is representative of the number of carbon dioxide molecules to the total number of molecules of dry air).

The concentrations of these gases are caused primarily by the use of fossil fuels (such as oil, coal and natural gas) that underpins industrialisation and its processes and supplies most modern energy needs, by changes in land use patterns, land clearing, agricultural practices and fertiliser application, the use of aerosols and ozone depleting materials, and cement manufacture. Thus scientific agreement provides that “most of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations” or in other words, the by-product of human activity.

The current level of current greenhouse gas concentrations have led scientific bodies such as the Inter-Governmental Panel for Climate Change to indicate that the average global surface temperature will rise a further 1.1 to 6.4°C (or 2.0 to 11.5°F) during the twenty-first century with implications such as a further rise in sea levels. More importantly, given the current trends and patterns of human activity, it is projected that the emission of greenhouse gases will continue to increase (between 25 and 90 per cent from 1990 levels), carbon dioxide emissions in particular would also rise (by 62 percent), and energy use would be higher by nearly 50 per cent from current usage by 2030.

Current and Projected Impacts of Climate Change

The impact of climate change is widespread. It includes the enlargement and increase in the number of water bodies such as glacial lakes, changes in the ecosystems (such as in the case of the Arctic and Antarctic), and increasing ground instability in certain regions and frequency of rock avalanches and landslides in mountain areas. There is an impact upon the seasonal variations in rivers and in biological events such as the greening of vegetation, and

migration and reproductive patterns of birds and other creatures. Climate change impact also includes the warming of lakes and rivers – which in turn affects water quality, the increasing acidity of oceans, and changes in the range, volume, and migration patterns of marine life.

In addition to the systemic impacts, climate change has a bearing on natural and human environments. It has an effect on agriculture due to the variations in seasons affecting cropping patterns and lengths of the growing season in some regions. There is disturbance in forest regimes due to the increasing frequency and unpredictability of fires and pestilence. There is a direct impact on human health with the rising threat of heat-related mortality and proliferation of infectious disease vectors. There is also a direct threat to human settlement and development in regions of ice and snow, in mountainous regions that are under the threat of floods cause by increasing glacier melt, and coastal wetlands and mangroves that are increasingly prone to flooding due to the rising sea level.

Scientific agreement also provides for projections pertaining to the future impacts of climate change. Changes in the availability of water across regions, the decline in water supplies sourced from glaciers and snow leading to the reduced availability of water for nearly one-sixth of the world population, likely increase in both the extent and frequency of droughts and floods, likely increase in the frequency of heavy precipitation, and the progressive acidification of oceans are predicted. Around 20-30 per cent of plant and animal species face the risk extinction if global average temperatures rise beyond 1.5-2.5°C.

These projections have further implications in terms of changes in cropping patterns and increases and declines in crop productivity across regions, thus increasing the risk of hunger. Variations in the distribution and production of marine life would affect aquaculture and fisheries. The risk of coastal flooding would be on the rise, increasing the vulnerability of settlements and industries of these regions. The economic and social costs of extreme weather events would magnify.

In terms of the health risks, rising malnutrition, increased number of deaths and disease and also injury due to extreme weather events, the increased burden of



diarrhoeal disease and also cardio-respiratory and a range of infectious diseases are predicted.

It may be stated that circumstances render some groups and societies more vulnerable to climate change than others. For instance, the vulnerabilities of coastal societies with economies dependent on climate-sensitive resources, inhabitants of rapidly urbanising areas and of areas prone to extreme weather, and poor communities with dependence on local resources and limited capacities to respond and adapt to climate change challenges are increasingly enhanced.

The Climate Change Problem: Some Assessments and Concerns

Global warming is already underway with the rise in temperatures since the advent of the industrial era, and is a reality. This rise is also characterised by a quickening rate of increase. Overwhelming scientific evidence has served to link the rise in temperatures with increases in concentrations of greenhouse gases in the earth's atmosphere.

The current approach to growth and development is predicated on investment in carbon-intensive energy infrastructure, with the dominant use of fossil fuels – coal in particular. As has been discussed, current trends and present policies provide for the rise of energy-related carbon dioxide emissions. Projections for the rapid build-up of greenhouse gases concentrations hold the impact of changing climate forecasts for future generations, in terms of an unsustainable ecological debt.

Continuation along current trajectories of human activities that have contributed to global warming will push global temperature rise beyond an estimated threshold of 2°C. The stabilisation of greenhouse gas concentrations at 450 ppm will allow for a 50 per cent chance of limiting temperature increase to 2°C above pre-industrial levels, while stabilisation at 550 ppm would raise the possibility of breaching this threshold by 80 per cent. The possible scenarios for the twenty-first century, however, on the basis of current trends, include stabilisation points for greenhouse gas emissions in excess of 750 ppm leading to possible temperature changes in excess of 5°C. While many of

the world's poorest people and most fragile ecological systems are already being forced to adapt to dangerous climate change, the rise beyond 2°C above pre-industrial levels will sharply increase the risks of irreversible ecological catastrophes and human development setbacks.

The human development impacts following from these trends will include large-scale reversals in terms of corroding livelihoods and mass displacements, and lead to the probability (rather than merely the possibility) of catastrophic ecological impact, culmination crises with the accelerating collapse of ice sheets in the Antarctic and Greenland, acidification of oceans, retreat of rainforest systems, and melting of Arctic permafrost.

Climate shocks, though these cannot be directly attributed to climate change, erode long terms opportunities for human development, undermining productivity and eroding human capabilities. There is mounting public concern over exposure to extreme climate risks across the developed world. Yet climate disasters so far have been heavily concentrated in poor countries. For instance, 262 million people have been affected by climate disasters annually from 2000 to 2004 and 98 per cent of this number is in the developing world.

Climate change in this context magnifies and escalates the risks and vulnerabilities facing the poor. Climate change impacts further stress the already over-stretched coping mechanisms of poor communities and countries, trapping masses in downward spiral of deprivation.

High levels of poverty and low levels of human development limit the capacity of poor households with limited access to formal insurance, low incomes and meagre assets to manage climate risks. Even the strategies for coping with climate risks can reinforce deprivation – examples such as producers in drought prone areas switching to low returns but drought resistant crops and selling of productive assets to finance consumption, merely substantiate this point.

The current and projected impacts of climate change have also been translated directly into human development concerns pertaining to agricultural production and food security, water stress and water



insecurity, rising sea levels and exposure to climate disasters, ecosystems and biodiversity, and human health. These concerns are compounded in the context of wider social, economic and ecological processes affecting human development, in terms of health and education opportunities lost, diminished productive potential, loss of vital ecosystems, and so forth, varying across and within countries.

Climate change will affect rainfall, temperatures and water availability for agriculture in vulnerable areas. Changes run-off patterns and glacial melt will add to ecological stress, compromising water flow for irrigation and human settlements. A global temperature increase of 3-4°C could result in 330 million people being temporarily or permanently displaced through flooding. One billion people currently living in urban slums, on fragile hillsides and flood-prone river banks face acute vulnerabilities.

A number of the developed countries are already preparing public health systems to deal with future climates shocks such as the 2003 European heat

wave. However, the greatest health impacts will be felt in the developing countries because of the high levels of poverty and limited response capacities of the public health systems.

The climate change problematique is then distinguished by three features. First, the combined force of inertia and cumulative outcomes of climate – that is, greenhouse gases once emitted, stay in the atmosphere for a long time – thus time lag is an important consequence of climate change inertia, and implies the need for dedicated, long-term and sustained response. The urgency of problem is the second feature of climate change, whereby inaction is not an option. The third feature is the global scale of climate change challenge – all greenhouse gas emissions and the attendant consequences are a threat for everyone – also implying collective action is an imperative.



2.2 Responding to Climate Change Challenges: Emerging Framework and Current Status

The Need for Mitigating and Adapting to Climate Change

Past emissions of greenhouse gases involve unavoidable warming with impacts of climate change estimated to increase with increases in global average temperatures. Many impacts of climate change can be avoided, reduced or delayed by mitigation, in terms of reducing greenhouse gas emissions. However the most stringent mitigation measures cannot avoid the further impacts of climate change in the next few decades, making adaptation essential. At the same time unmitigated climate change would in the long-term exceed the capacity of natural, managed and human systems.

Many early impacts of climate change can also be addressed through adaptive responses based on technology, behaviour change, changes in the management of resources and processes, and also changes in policy. Effective adaptation measures are dependent on specific geographical and climate risk factors as well as institutional, political and financial constraints. There are also environmental, economic, informational, social, attitudinal and behavioural barriers to implementing adaptation.

The Evolution of an International Framework to Address Climate Change

Climate change was recognised as a serious problem by an international gathering in 1979, when the First World Climate Conference called upon world governments “to foresee and prevent potential man-made changes in climate that might be adverse to the well-being of humanity.” A number of international conferences taking up both scientific and policy issues

were convened in its wake – under the auspices of the United Nations (UN) and its specialised agencies, at the regional level by the European Union, the Commonwealth, and the South Pacific Forum, and also by the initiative of individual governments. Some of these meetings also highlighted specific concerns, such as those pertaining to developing countries and small island states.

An Inter-governmental Panel on Climate Change was established in 1988 by the World Meteorological Organisation (WMO) and the United Nations Environment Programme (UNEP). It is a scientific body, created as an objective source of information about the causes of climate change, its potential environmental and socio-economic consequences, and the available mitigation and adaptation responses.

Some climate change concerns were indirectly taken up in the 1987 amended Montreal Protocol on Substances That Deplete the Ozone Layer (dealing with the phasing out of chlorofluorocarbons by the year 2000), and the 1979 Geneva Convention on Long-Range Transboundary Air Pollution.

The United Nations Framework Convention on Climate Change (UNFCCC) was the first legally binding instrument to address the issue of climate change. It was opened to for signature at the 1992 UN Conference on Environment and Development, and signed by 155 member states at the time.

The UNFCCC identifies responses to climate change in terms of mitigation of climate change by reducing greenhouse gas emissions and enhancing sinks, and adaptation to the impacts of climate change. It also sets out the broad objectives of multilateral action. These objectives include stabilising greenhouse gas concentrations in the atmosphere “at a level that would prevent dangerous anthropogenic interference with the climate system.” The indicators for the prevention of dangers included climate stabilisation within a time



frame that allows ecosystems to adapt naturally, the avoidance of disruption to food systems, and the maintenance of conditions for sustainable economic development.

The Framework Convention also provides that the Parties to the convention should cooperate to promote a supportive and open international economic system that would lead to sustainable economic growth and development in all Parties – particularly developing country Parties – thus enabling them to better address the problems of climate change. It adopts the principle of “common but differentiated responsibilities” of the developed and the developing countries, taking into account “specific national and regional development priorities, objectives and circumstances.”

The UNFCCC binds all Parties, among other commitments, to:

- promote and cooperate in the development, application and diffusion (including transfer) of technologies, practices and processes that control, reduce, or prevent anthropogenic emissions of greenhouse gases.
- promote sustainable management, and promote and cooperate in the conservation and enhancement of sinks and reservoirs of greenhouse gases.
- cooperate in preparing for adaptation to the impacts of climate change.
- promote and cooperate in scientific, technical, technological, socio-economic and other research; in systematic observation and development of data archives; and in the full, open and prompt exchange of such information related to the climate system, climate change and to the economic and social consequences of response strategies.
- promote and cooperate in education, training and public awareness related to climate change and encourage the widest participation in this process.

The signatories to the convention are divided into three groups – the industrialised and developed countries (Annex 1 countries) that were to agree to reduce their emissions below 1990 levels, the developing countries, a subgroup of the industrialised and developed countries that would provide financial resources for the development world (Annex 2 countries).

Thus developed country Parties are to provide new and additional financial resources, assist developing country Parties that are particularly vulnerable to the adverse effects of climate change, and take all practicable steps to promote, facilitate and finance the transfer of or access to environmentally sound technologies and know-how to support the meeting of eventual emission reduction targets. A mechanism for the provision of financial resources on a grant or concession basis, including for the transfer of technology has been defined in terms of the Global Environment Facility of the United Nations Development Programme, the United Nations Environment Programme and the International Bank for Reconstruction and Development.

The UNFCCC has provided the platform to negotiate and establish legally binding obligations for the developed countries to reduce their greenhouse gas emissions. Following intensive negotiations, the Kyoto Protocol was adopted by the Conference of Parties to the UNFCCC at Kyoto, Japan in December 1997.

The Kyoto Protocol was a first step in a multilateral response to climate change that set targets for cutting greenhouse gas emissions against 1990 levels by 2010-2012. Most industrialised nations and some Central European economies in transition agreed to reductions in greenhouse gas emissions of an average of 6-8 per cent below 1990 levels during the period 2008-2012 (defined as the first emission budget period). The United States that was required to reduce its emissions by an average of 7 per cent below its 1990 levels explicitly rejected the protocol in 2001.

The Parties to the Framework Convention adopted a 2-year Plan of Action to work towards and devise mechanisms to implement the Kyoto Protocol. Resolution of further issues pertaining to international agreements and commitments to addressing climate change has proved difficult since. Negotiations regarding the consequences of non-compliance,



the means by which developing countries could obtain financial assistance for adaptation and future mitigation efforts, and allowing for the trade of carbon 'credits' ran into much controversy with little room for compromise.

The non-participation of the United States in 2001 negotiations allowed for some consensus on allowing industrialised countries to fund emissions reduction activities in developing countries (Clean Development Mechanism) as an alternative to domestic emission reductions (with no quantitative limit), and also credit for broad activities that absorb carbon from the atmosphere or store it (sinks) – including forest management and re-vegetation. There was agreement on a broad outline of consequences for failing to meet emission targets, including the suspension of the rights to sell credits for surplus emissions reductions and a required compliance action plan. The negotiations also resulted in agreement to set up three new funds to provide assistance for needs associated with climate change, a least-developed-country fund to support National Adaptation Programmes of Action, and a Kyoto Protocol Adaptation Fund. The operational details were worked out in the following year in terms of rules for international emissions trading, a compliance regime, and accounting procedures for the flexibility mechanisms.

The Montreal Action Plan agreed upon by the 2005 Conference of Parties to the UNFCCC underlined the international agreement to “extend the life of the Kyoto Protocol beyond its 2012 expiry date and negotiate deeper cuts in greenhouse gas emissions.” The recent meeting in Bali in 2007 in this regard has resulted in timelines for the negotiation of the post-2012 Kyoto framework, with discussions to be held in 2008 to get to an agreed outcome in 2009.

Current Status

The current commitments under the Kyoto protocol expire in 2012. An assessment of progress on these commitments reveals that energy related carbon dioxide emissions have increased sharply since 1990 – the reference year for the Kyoto Protocol. Not all developed countries have ratified the protocol targets to reduce their average emissions and most that did ratify these targets are off-track in meeting their commitments. There are also apparent gaps in the area of explicit policy commitment to climate change mitigation.

For instance Canada, the United Kingdom and the European Union are among those falling short of their emissions reduction targets. Australia and the United States are not bound by the Kyoto targets – Australia is opting for a wide ranging voluntary initiative with mixed results and the US is adopting a ‘carbon-intensity’ reduction goal measuring efficiency in place of a federal target for reducing emissions, though these efficiency gains have failed to prevent aggregate emission increases.

The assessment of current efforts aimed at mitigating climate change shows that current commitments would not lead to a stabilisation of atmospheric greenhouse gas concentrations, and adaptation is inevitable.



2.3 Climate Justice and the South

The Case for Climate Justice

The current framework to address climate change is based upon the overwhelming scientific consensus that climate change is both real and man-made, and supported by all governments. Mitigation efforts are imperative for avoiding dangerous climate change in the future, and it has also been established that there is no alternative to adaptation, at least for the first half of the twenty-first century.

The approach to mitigating the effects of climate change and stabilising climatic conditions has focused upon curbing the emissions and moving towards more environmentally sustainable practices. This has been translated into laws and regulations pertaining to climate change, greenhouse gas emission limits, a regulatory framework for carbon trading, tax incentives, the polluter pays principle, etc., and has underpinned the search for clean and renewable energy sources and alternative paths to sustainable development.

Industrial growth that is strongly linked with pollution emanating from the use of fossil fuels, serves as the traditional path to development, and remains an essential for the progress of the developing world. It is understood that the emission of carbon dioxide and other greenhouse gases contributing to global warming will continue to rise in the developing countries through the next few decades. This understanding found space in the UNFCCC, whereby parties to the framework convention agreed to “common but differentiated responsibilities” for different groups of countries.

It also needs to be acknowledged that countries vary widely in contributions to emissions. With 15 per cent of the world population, rich countries account for almost half of the carbon dioxide emissions. While high growth in China and India is leading to a gradual convergence in aggregate emissions, there remains a great divergence in terms of per capita carbon footprint. To substantiate, the carbon footprint of the United States of America is 5 times that of China and 15 times that of India, while Ethiopia's carbon footprint

of 0.1 tonnes of carbon dioxide does not compare with 20 tonnes in Canada.

Carbon budgeting casts new light on share of developing countries in global greenhouse gas emissions; though this share is rising attention cannot be diverted from responsibilities of rich countries. Given that climate stabilisation at the global level would demand reductions in greenhouse gas emissions by half, relative to 1990 levels by 2050, with further sustained reductions to the end of the century, plausible estimates provide that rich nations are required to cut their emissions by at least 80 per cent, with 30 per cent cut in emissions by 2020. Developing country emissions are estimated to peak by 2020, with required cuts by 20 per cent to be effected by 2050.

Climate change has also emerged as the defining human development issue of the time, which will serve to undermine international efforts to combat poverty. The failure to adequately respond to climate change challenges will consign the poorest, constituting 40 percent of the world population (approx. 2.6 billion), to a future of diminished opportunity.

There is an inverse relationship between responsibility of climate change and vulnerability to its impacts. The brunt of climate change is first to be borne by the poor, eventually to spread to all. Thus climate change demands urgent action now, with the need to especially protect those with no voice and with least or no contribution to the problem – the poor and the future generations. Climate change then raises issues of social justice, equity and human rights across countries and generations.

Climate change mitigation at this stage is about transforming the production and use of energy and living within the bounds of ecological sustainability. The world lacks neither financial resources nor technical capabilities to respond; the issue rather is one of political imagination, leadership and will. The need for developed countries to take the lead given the burden of historic responsibility for climate change problem is highlighted, given that these countries have the



financial resources and technical capabilities to initiate cuts in emissions in addition.

A point that needs to be made is that such climate stabilisation targets that have been negotiated are stringent but affordable. The average annual costs between now and 2030 would amount to 1.6 per cent of the global Gross Domestic Product (GDP) – which incidentally is representative of less than two-thirds of global military spending. The costs of inaction are higher, estimated between 5 and 20 per cent of world GDP by and acknowledged review.

Shortfalls in the Implementation of Existing Framework

The present state of international cooperation and multilateralism on climate change is far from adequate. Political momentum has gathered some pace with governments setting bold targets for cutting greenhouse gas emissions, the registering climate change registered on G8 agenda, and efforts to strengthen dialogue between the developed and the developing countries. Political action, however, continues to fall far short towards the resolution of the climate change problem.

The gap between scientific evidence and political response remains large. Earlier discussions have underlined that some developed countries are yet to establish ambitious targets for cutting greenhouse gas emissions; some developed countries have established targets without putting in place the energy policy reforms needed to achieve them. There also appears to be a long way to go to achieve a clear, credible and long-term multilateral framework to bridge the divide between carbon and political cycles.

Parties to the Framework Convention have agreed to common but differentiated responsibilities for different groups of countries. However, the agreement is undermined by factors including slow or no progress among developed countries in reducing greenhouse gas emissions and in fulfilling financial and technological commitments to the developing world, towards mitigating the impacts of and adapting to climate change. There is a growing complexity of pressures upon developing countries, pertaining to

development choices, and access to and use of financial resources and technologies.

Negotiations under the framework conventions and elsewhere have been marred by the perceived divide between the interests and obligations of the developed and the developing countries and in reality are now being driven by systemic inequalities in global resources allocation and use. Developed countries are accused of using climate change negotiations to further economic globalisation at the expense of communities and the environment. Powerful vested interests including oil, coal, gas industries and automotive and utility industries (energy producers, consumers/polluters) also influence climate change dialogue. As a result, it is felt that the principles of equity and shared responsibility have been impacted, and focus has been skewed towards minimising the burden of implementation on polluter industries and countries instead of giving priority to vulnerabilities of communities and countries at greatest risk and disadvantage.

Multilateral environmental agreements pertaining to climate change (as the Kyoto Protocol under the UNFCCC) are still to be acceded to or ratified by many countries. Existing provisions have been diluted by way of greater flexibility in trading of emission credits, and broadening the coverage of such credits, allowing alternative investments, and so forth. The primary focus of the regime to mitigate climate change then has become management of global carbon trading and meeting short term targets, whereby distracting due attention from longer term goals of climate stabilisation.

With specific reference for the need to support adaptation in the developing world, international response has been far short of what is required. Current efforts are marked by chronic under financing and also lack of coherence and coordination. Though several dedicated multilateral financing mechanisms have been created including the Least Developed Countries Fund and the Special Climate Change Fund but delivery through these mechanisms has been limited and total financing till date has been US\$ 26 million (equivalent to a week's spending under the UK flood defence programme) while the pledged funding amounts to US\$ 279 million for disbursement over several years.



Aid programmes are also under threat with the concentration of a third of current development assistance concentrated in areas facing climate change risks, and the diversion of aid into disaster relief. The need for additional investment is estimated US\$ 4.5 billion by the UNDP in its current to insulate aid budgets, and for adaptation financing requirements to be viewed as “new and additional commitments” to supplement rather than divert existing aid commitments.

Thus there is space for binding international agreement for long term reduction in emissions as well as stringent medium term targets; a need for quantitative commitments also from the developing countries but these commitments are to reflect their circumstances and capabilities; this agreement is also premised on the incorporation of provisions for finance and technology transfer from rich nations that bear historic responsibility for climate change.

Mitigation and Adaptation Imperatives

Climate change mitigation requires an unparalleled collective exercise in international cooperation. The translation of mitigation targets into policies is being effected through approaches such as putting a price on global carbon emissions through taxation on emissions, or cap and trade with a global cap on emissions, and tradable allowances and the right to emit a certain amount (such as European Union’s Emissions Trading Scheme or ETS, though the ETS faces problems of effectiveness and efficiency). The rapid development and deployment of low-carbon technologies is now understood to be vital to climate change mitigation.

Changed incentive structures and associations appear as a vital condition for effective mitigation strategies. The market approach to managing carbon serves as a necessary – though not sufficient – condition for transition to a low carbon economy. Governments have a critical role in setting regulatory standards and in supporting low carbon research, development and deployment. A role for international trade in expanding markets for alternative fuels can also be identified. Issues such as deforestation mark another important

area for international cooperation with scope for exploring the potential of carbon markets.

The relevance of these approaches and assertions is substantiated with examples such as the expansion of renewable energy due to creation of incentives through regulation – for instance, the ‘feed-in tariff’ in Germany has boosted the share of renewable energy suppliers in the national grid and US tax incentives have encouraged the development of a vibrant wind power industry.

Given the shortfalls despite rapid growth of renewable energy, enhanced energy efficiency can however reduce both emissions and energy costs, – with reference to electrical appliances and personal transportation (automobile sector accounts for 30 per cent of emissions in developed countries and this share is rising). Low levels of energy efficiency currently pose a threat to mitigation efforts.

There is also no alternative to adaptation. Many of the rich countries are already investing in development of climate defence infrastructures and national strategies are being drawn to prepare for more extreme and less certain future weather patterns, as in the United Kingdom, the Netherlands and Switzerland.

At the same time developing countries face far more severe adaptation challenges, whether it is governments operating under severe financing constraints or the poor themselves. The inequalities in capacity to adapt to climate change are increasingly apparent with planning for climate change adaptation in developing countries faced with challenges compounded by systemic threats and implications. Responding to climate change requires the integration of adaptation into all aspects of policy development and planning for poverty reduction.

Planning and implementation capacity is limited by a range of factors. Many of the poor countries lack the information capacity and resources to assess climate risks. They lack the resources required for infrastructural adaptation, even in the light of the assessment that investment in pre-disaster risk management can prevent losses up to seven times the investment. Social protection programmes can also help the poor cope with the incremental risks generated by climate change while expanding



opportunities for employment, nutrition and education, though social protection figures only marginally in current adaptation strategies.

There is also a relevance of community based approaches to adaptation. For example, research among impoverished island populations in Bangladesh reveals that adaptation against flooding can strengthen livelihoods even in extreme conditions. The development of community based infrastructure for water harvesting can also reduce vulnerability and empower people to cope with climate risks, supported with examples of local government and community partnerships in the Indian states of Andhra Pradesh and Gujarat.

Stronger international commitment is demanded on adaptation priorities, with climate change adaptation long treated as a peripheral concern. The case for international action for adaptation is rooted in past commitments, shared values, the global commitment to poverty reduction and the liability of rich nations for climate change problems. The Governments of the North are obliged under the UNFCCC to support adaptation capacity development. Support for the MDGs serves as another powerful rationale for action, with adaptation the key to achieving targets and sustained progress. International adaptation support has also to go beyond financing to integration of adaptation planning into wide poverty reduction strategies as priority and another possible focal point for international cooperation.

Negotiating the Course Ahead

Discussions and suggestions for charting the course ahead abound in the lead up to negotiations for the post-2012 Kyoto framework, demanding a new range of commitments and defining obligations. These include the renewal of efforts to develop a strong multilateral framework for offsetting climate change, put in place policies for sustainable carbon budgeting as the agenda for mitigation, strengthen the framework for international cooperation, and locate climate change adaptation at the centre of post-2012 Kyoto framework and international partnerships for poverty reduction.

Commitment to a global carbon budget and sustainable pathways need to be translated into practical national

strategies and national carbon budgets. Setting credible targets linked with global mitigation goals is the starting point, with the understanding that these targets have to be backed by clear policies. Further solutions such as attributing a price on carbon through taxation and other methods are on offer.

It is also understood that the credibility of multilateral agreement also hinges on participation of major emitters in the developing world, though basic principles of equity and the human development imperative of expanding access to energy demand that developing countries have the flexibility to make the transition to a low-carbon growth path at a rate consistent with their capabilities – that is their commitment reflect their circumstances and capacities.

The criticality of the role of international cooperation needs to be highlighted, along with the relevance of the development of regulatory systems and public-private partnerships for low-carbon transitions. Thus a post-2012 Kyoto framework would incorporate mechanisms for finance and technology transfer (towards rapid disbursement of low-carbon technologies). The United Nations Development Programme has proposed the development of a Climate Change Mitigation Facility in the post-2012 Kyoto framework to mobilise resources (to the tune of US\$ 20-25 billion annually) to finance low carbon energy investments in developing countries. As a specific concern, the need for cooperation to support conservation and sustainable management of rainforests to strengthen mitigation efforts has been raised.

There is an important role for public policy in facilitating adaptation to climate change. This includes reducing vulnerability of people and infrastructure, providing information on risks for private and public investments and decision-making, and protecting public goods such as habitats, species and culturally important resources. Media reporting of climate related disasters has an important role in informing opinion.

A special role can be played by international funding agencies and climate change funds to contribute not only to mitigation of climate change, but also to reducing rural poverty and improving sustainable management of local ecosystems. New investments could decarbonise economic growth. Climate change then engages a multitude of decision-makers, both spatially and temporally. The United Nations



Framework Convention on Climate Change, its subsidiary bodies and Member Parties have largely focused on mitigation. More recently, an increasing interest at the grassroots level has yielded local mitigation activities. Adaptation decisions embrace both public and private sector, as some decisions involve large construction projects in the hands of public-sector decision-makers while other decisions are localised, involving many private-sector agents. Effective implementation of climate change adaptation

and mitigation is often dependent on the support from local non-governmental organisations, private sector and public government authorities.

Cooperation among the developed and the developing countries underpins the international frameworks and agreed upon strategies for meeting the MDGs as well as the targets for climate change mitigation and adaptation.



2.4 Climate Change, Development and South Asia

Climate Change Impact in South Asia

There are specific projections pertaining to the impact of climate change in the South Asian region given its geographic and climatic realities.

South Asia is under the threat of increased flooding, rock avalanches, and impact on water resources due to Himalayan glacier melt. The flow in glacier-fed rivers would increase sharply and then decline in this scenario. The large river basins of the region are faced with the prospects of the decreasing freshwater availability. The coastal areas in the South Asia face the greatest risk of flooding, especially in the heavily populated mega-delta regions.

Processes associated with rapid urbanisation, industrialisation and economic development would further compound the pressures on natural resources and the environment, impinging upon the sustainable development of the region. Crop yields are projected to decrease up to 30 per cent by the mid-twenty-first century, which combined with the influence of rapid population growth and urbanisation will add to the prevalence of hunger in the region.

Climate change would also lead to the rise in endemic morbidity and diarrhoeal disease that is primarily associated with floods and drought, and the increase in coastal water temperatures would exacerbate the abundance and toxicity of cholera in the region. The risk of exposure to climate shocks would increase manifold.

Climate Change and Development in South Asia

In the case of South Asia, vulnerability to climate change, high levels of poverty and slow progress towards the achievement of development ends places the region in an extremely delicate situation. The situation is rendered far more complex in the light of

the contentious relationship between climate change and prevailing development paths on the one hand, and the trends in climate change negotiations on the other. It is well established that changes in the natural environment can affect human sustenance and livelihoods. This in turn can lead to instability and conflict, often followed by displacement of people and changes in occupancy and migration patterns.

South Asia is home to three of the ten most populous countries of the world – India, Pakistan and Bangladesh. These countries are also projected to be the drivers of population growth in the region. Climate change would magnify the pressures on land in region in the present century, along with the increasing demand for food production and economic development emanating from the growing populations.

Rising rural-urban migration in India, the exacerbation of present environmental conditions in Pakistan and Bangladesh giving rise to land degradation, shortfalls in food production, rural poverty and urban unrest, the likely increases in the costs of damages from floods, typhoons and other climate-related hazards are just some of the specific projections of climate change impact on South Asia in this regard.

Social forces create inequitable exposure to risk and damages, and along with factors such as caste, class, gender, habitation, and so forth add further complexity to the impact of climate change, especially upon the poorest and marginalised sections and communities. This impact adds to constraints to the access of resources as well as restricting the adaptive capacity of the region. There is also the very real danger given the socio-economic and cultural realities of the countries of South Asia that serious domestic conflicts, pervasive poverty, hunger, epidemics, terrorism and other pressing and urgent concerns may draw attention away from the dangers of climate change and the need to implement adaptation.

It has been projected that effective adaptation and adaptive capacity of developing countries such as that of South Asia will continue to be limited by several ecological, social, economic, technical and political



constraints. These constraints are understood to include temporal and spatial uncertainties associated with forecasts of regional climate, low level of awareness among decision-makers of local and regional impacts, limited national capacities in climate monitoring and forecasting, and lack of coordination in the formulation of responses.

The international dialogue has also resulted in the suggestion of some measures to support adaptive practices in the region. Efforts towards improving access to high quality information about the impacts of climate change and undertaking adaptation and vulnerability assessment by setting in place early warning systems and information systems to enhance disaster preparedness can support adaptation

strategies and implementation. The importance of exploring ways of reducing the vulnerability of livelihoods and infrastructure to climate change can be highlighted.

There is a need to promote good governance, including responsible policy and decision-making as an essential to the planning of and execution of sustained response to climate change challenges. It is increasingly apparent that empowering communities and local stakeholders so that they participate actively in vulnerability assessment and implementation of adaptation is essential for coherent and concerted action. Finally, the climate change concern needs to be mainstreamed into development planning at all scales, levels and sectors.



3

Climate Justice for the Realisation of MDGs : Southern Perspectives and Voices

3.1 Southern Voices and Perspectives

3.2 Impact on South Asia's Food Security, Income Opportunities and Livelihood Resources

3.3 Mitigation and Adaptation Strategies in South Asia's Geo-climatic and Cultural Context

3.4 Climate Change Challenges in South Asian Development Initiatives: Establishing Inter-Sectoral Relationships

3.5 Inclusion of South Asian Grassroots Voices in the Climate Change Dialogue

3.6 Role of ICTs and Emerging Media in Addressing Climate Change Challenges

3.7 Collaborations and Partnerships for Development and Equitable Climate Change Mitigation Policy and Initiatives



3.1 Southern Voices and Perspectives

There is emerging consensus characterising climate change as the defining human issue of the twenty-first century. Climate change challenges incorporate the issue of awareness and education regarding climate change, its impacts, and the range of possible responses. The current and potential effects of climate change in terms of further challenges and risk patterns demand changes in the ordering of processes and relationships across the globe, though it may also be said that these changes may not be as difficult to execute as perceived.

Climate Justice for the Realisation of MDGs

The issues of human security and justice are central to future dialogue on climate change. The threat is apparent and imminent, and it is the poor and future generations that will be the biggest victims, bearing the most severe and immediate human costs. Climate change risks for developing countries are similarly magnified, as climate change serves as a multiplier of current development challenges. Stress factors such as current climate hazards, poverty and unequal access to resources, food insecurity, trends in economic globalisation, conflict, and incidence of diseases such as HIV/AIDS, increase vulnerability and reduce adaptive capacity to climate change by reducing resilience and competing for resources.

The projected impacts of climate change can vary due to the development pathway adopted. Sustainable development can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience. At the same time, climate change can also slow the pace of progress towards sustainable development through increased exposure to adverse impact and through erosion of capacity to adapt.

Climate change also undermines efforts towards meeting the MDGs. The MDGs provide clear references and targets for addressing poverty and human deprivation. In the South Asian context, as in much of

the developing world, regular assessments against these targets reveal unequal progress and further impact on already inequitable income distribution. Social exclusion (especially with reference to development and other benefits) also remains one of the daunting challenges. In addition to the implications for development choices and resource allocation priorities, climate change responses (in their present formulations) may not be consistent with efforts against poverty.

A critical point that can be made here is that the South Asian region is faced with such a complex web of immediate issues as the specifics of development, conflict, etc. that a concern as complex and controversial and politically distant (in the current assessment) as climate change associated with climate justice concerns, then gets submerged.

Some South Asian Concerns

Recent assessments provide that India, Pakistan, Sri Lanka, Bangladesh, Nepal and Bhutan are unlikely to meet most of the targets on the eight identified goals. Average annual growth in the countries of South Asia has exceeded 5-6 per cent, with that of India and Pakistan exceeding 7 per cent. Poverty rates in India, Pakistan and Nepal are on the decline. However India with its poverty rate of 34 per cent has travelled less than half the distance to its 2015 target and nearly half of its children under the age of five remain underweight. Sri Lanka with the lowest poverty rate in South Asia has witnessed an upward trend in poverty levels while in Bangladesh the already high levels of poverty continue to rise. The countries of the region are also faced with other concerns such as social and economic exclusion, hunger, illiteracy, unemployment, and so forth.

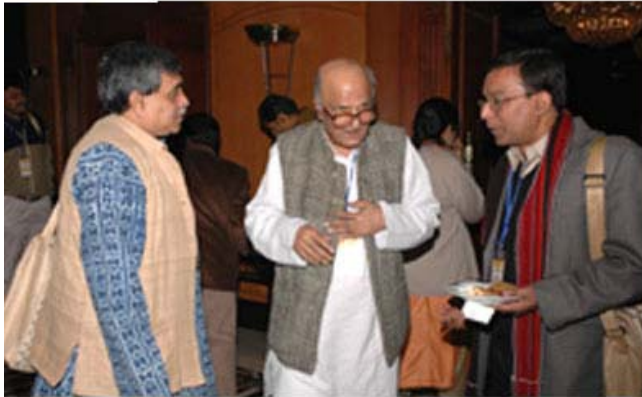
At the same time there has been slow but steady



Range Challenges in South Asian Development Initiatives: Engaging Inter-Sectoral Relationships

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Continental, Nehru Place, New Delhi







progress in the region on a number of development indicators. Yet this progress is being threatened in the light of climate change challenges that imply stark human development reversals.

South Asia is faced with catastrophes as cyclones, floods, torrential rains, drought and extreme weather patterns, which along with decline in crop productivity due to a changing climate change would lead to severe economic shocks and an impact on livelihoods, hunger, lives, health, and magnified disaster risks for lives and properties in the region. Exacerbation of environmental and social problems also triggers migration with further severe socio-economic implications for migrant and other populations.

There are concerns regarding some prescriptions for climate change mitigation such as the use of bio-fuels. Diversion of food resources and production patterns (with reference to crops such as maize, soy and corn) to serve energy rather than nutrition needs has an impact on the availability and costs of food, especially for the poor. Inefficiencies in production and distribution also constitute a vicious cycle.

The impact of climate change in South Asia is compounded by its population problem as well. The Malthusian argument can be employed to attribute much of the problem to the discrepancies in the rising human demands on natural resources that may eventually exceed supply. A world population of 6.6 billion is expected to stabilise at 2050 at 9.2 billion whereby population combined with climate change impact implies environmental disasters.

One key effect of disasters is the further marginalisation of people, with maximum impact on those on the fringes of civilisation with already limited development choices and access to resources. Poverty is linked with the quality of life, equity and equality including gender equality, maternal mortality, etc. that remain intrinsic to the environmental issue.

A New Climate Regime

It can be reiterated that a limited number of countries are responsible for the major proportion of greenhouse gas emissions. Twenty-five countries account for 85 per cent of global emissions, of which the emissions of 14 countries constitute 90 per cent. The Kyoto Protocol

has made a barely visible dent in managing these emissions. Mitigation efforts under the Protocol commitments have proved far from adequate with adaptation efforts lagging further behind, given the paucity of political will and solidarity. Climate change mitigation and adaptation requirements are compounded by other needs of poverty alleviation and development, which is to be addressed as a new and composite challenge.

There is a need for a new climate regime given that continued greenhouse gas emissions spell disaster. There is still a long way to go to put mitigation and adaptation strategies in place and implement existing agreements. Climate change rests on the long-term convergence of per capita emissions, highlighting the continued requirement for the curbing of emission in developed countries and a slowing down of emission levels in developing countries (though in a manner that does not affect overall development).

Taking recent discussions forward, negotiations to establish a new framework following the expiration of Kyoto Protocol commitments needs to define world energy systems. There is a need to reorient the supply chains of the globalised economy using climate change perspectives. The issue of how different regions, countries and communities can assess their climate change mitigation needs and formulate responses and delivery mechanisms is also critical. Cross-cutting concerns such as that of health, pollution can also be taken up.

Energy solutions (in terms of energy for the poor) are also fundamental for adapting to climate change and for future development. The requirement for and availability of alternative energy sources and technologies raises important concerns, given that nearly 1.6 billion of the populations in the developing world still have no access to electricity.

Political will and solidarity is necessary for successful mitigation; there is a need to come together to frame a workable solution and collectively make appropriate choices. This will and collective can be effectively supported by partnerships across various sectors (governments, civil society and the private sector), people and societies. Mitigation starts at the national or regional level while adaptation begins at the community level.



South Asian Perspectives

For developing countries, there is the requirement to manage and address both environmental concerns and climate change challenges while emphasising the human face of development. There is a need to make future projections and map adaptation strategies based on assessments of the impact of climate change on specific locations/regions. It is equally important to identify and adhere to the absorptive capacity of the ecosystem.

The ranges of interventions that are required are huge, including advocacy as well as physical and financial measures. There may be need for infrastructure, changes in zoning laws, better management of water resources, research and development measures, etc. These however can merely serve as short-term relief measures. The global community has to mitigate the effects of greenhouse gas emissions to contain the worst impacts of climate change.

It can be said that it is not resources that are a constraint; rather the question that arises is one of effective utilisation. In this regard the developing world for most part would hold the developed countries to their historical responsibilities and seek technological and financial support.

The issue of interdependence has been sufficiently highlighted in the MDGs and climate change discourses with reference to the support by the developed countries for progress in the developing world and ensuring fairness and equity in their relations especially in the finance, aid, trade and technology spheres. The developing world too cannot shirk its responsibilities, though it demands space for its development aspirations and poverty alleviations goals. Climate change responses are also to be integrated with mainstream development cycles and poverty alleviation strategies.

There has been some degree of irreversible damage, but there remains room for ingenuity and innovative action and solutions to be implemented in a concerted manner. There is scope for participation and leadership by the countries of the South, and South Asia in particular. There are new avenues for engagement in all (scientific, mitigative, adaptive and monitoring) aspects of the climate change problem given that there

is the need for an integrated approach to the issue, especially in terms of transcending sovereignty issues. Sharing of resources and best practices both underpins and supports cooperation efforts.

There is a need for identifying contentions in ongoing negotiations and exploring possibilities to achieve consensus. Global compacts on addressing climate change in terms of the United Nations and other conferences, agreements and instruments, and the very process of globalisation can be re-examined against concerns of equity and inclusion.

Increased dialogue and social understanding are a starting point to arriving at a degree of agreement across groups of countries for managing responses to the climate change challenges. It is important that the world gradually moves to an alignment of developed and developing country interests and responses in the context of climate justice. Establishing communication possibilities across the world and the harnessing of all possible tools and technologies can support this endeavour. Scientific knowledge and political will are integral in this process.

Regional solutions are also to be explored, whereby the importance of the governments of South Asia to unify to address key mitigation, adaptation and climate stabilisation. The need for strong domestic emission policies incorporated into the broader national frameworks also cannot be done without.

An inter-relationship between the environment and the economy can be identified, to leverage economic instruments and incentive for environmental and climate change gains. Economic programmes can be designed to manage environmental concerns and towards the sustainable harnessing of environmental resources. However the issue of market failure can also be looked at in the light of market-based solutions for climate change and MDG concerns.

There is a need for fully informed societies and the mainstreaming of awareness of the consequences and available responses to climate change. It is important to bridge the gap between scientific knowledge and social awareness, across both the developed and the developing world. It is also essential to engage in data collection at the local level to arrive at a composite picture of the general and localised implications of climate change and the factors that could help define



appropriate general and localised responses. There is a need to mobilise indigenous knowledge at the global and local levels and secure public access to knowledge systems as integral to the pursuit of lasting change.

There is a growing role for civil society and need for people's participation. The inclusion of grassroots voices and perspectives is essential for accelerated progress towards development goals and climate change adaptation (and eventual strategies for mitigation), acknowledging cultural expressions and identities. Inclusion in both climate change and development needs to be institutionally facilitated.

Technology is a huge area that can provide solutions for promoting sustainable development. Technological capacities do exist, but there is the need for vision to develop and deploy technologies. For instance, there are various ways in which technologies are being used to generate awareness and redress poverty. ICTs in particular (deployed through community radio, interactive media, knowledge or information centres, etc.) can provide a platform to include Southern voices in the climate change dialogue.

Community-based organisations can utilise context specific ICTs to amplify grassroots voices in decision-making processes. The recent Government of India initiative on community radio policy is also commendable, given its relevance as a community

owned development tool that can be used for enhancing climate change awareness and including community perspectives and solutions in the wide-ranging debates.

Concerns such as use of bio-fuels, migration policies, etc. would need to be taken up. Securing energy efficiency and harnessing it to generate general and localised benefits (to farmer communities for instance) can be looked into.

From a much broader perspective, an extremely important dimension of the problem can also be highlighted in terms of the value system that had popularised consumerist approaches and acquisitive tendencies. Values attached to the concentration of wealth, political power and even population issues need to be reconsidered. It is essential to reconsider unbridled growth, assessing the costs and damages of development choices. Social deficit and disparities can be posed against carbon-generating development processes. Lifestyle and behavioural changes across the globe are also mandated, along with changes in global production and consumption patterns.

An enlightened democracy, decentralisation of power and self-reliance can only be of advantage in the search of solutions to the climate change problem, as in pursuit of peace and progress in the right direction.



3.2 Impact on South Asia's Food Security, Income Opportunities and Livelihood Resources

Floods are affecting patterns of life and work in the region, with reducing navigability of the waters, such as the case in Assam, and also impacting infrastructure and industrialisation processes. Sand belts are being increasingly noticed in places where there were farms. Farming communities around the tribal regions are being reduced to traditional and basic farming practices with increasing restrictions on access to resources. People in places like Cherrapunji are facing the declining availability of drinking water. Arsenic is being increasingly detected in hilly regions. Reducing forest cover is threatening the ecosystem. Changes pertaining to the climate are affecting access to safe habitats, drinking water and leaving people vulnerable to diseases and natural disasters across South Asia.

The most visible impact of climate change is upon the poorest and the most vulnerable, including indigenous peoples and backward communities. Existing food inequalities are exacerbated. Livelihoods that are directly dependent on natural resources such as agriculture and livestock are the most immediately affected by climate change impacts, as productivity and productive opportunities suffer because of change in geophysical strata and climatic factors directly linked to production. This has enormous implications for the South Asian region that has a substantial rural and agricultural population. Seventy per cent of the rural poor also depend on livestock.

Distress selling, income and resource poverty (especially common property) and loss of assets that result from the loss of livelihoods create the grounds for further inequity in access to productive resources and benefits, profiteering, and intensification of market uncertainties, especially for the poor. This also gives rise to severe coping mechanisms such as migration, and ultimately conflict and insurgency. In addition, the lack of awareness and clarity regarding the effects of climate change are not clearly known yet and the patterns of change are still erratic.

This picture is complicated by a number of factors pertaining to the region's development realities. At the outset poverty is the one cause leading to localised indiscriminate degradation of natural resources. Diseases like avian flu can be attributed to intensive production changes rather than climate change impacts. Rising livestock demands from the developed world can skew production in the region, and poor livestock management leads to animal waste, deforestation and health problems. In the light of low agricultural productivity and inadequate research on heat-resistant variety of crops, farmers continue to grow water intensive crops that will lead to further problems of food security. The absence of an appropriate land tenure system in places will force subsistence farmers into unsustainable agricultural practices, leasing out of village commons, etc. The forced sale of productive assets will further limit the potential for growth and expansion for the landless and the marginalised. Food resources are decreasing with industrialised countries importing bio-fuels such as maize at a cheaper rate from the region and private players entering contract farming and land markets in South Asia.

Existing public policies and institutions do not yet respond to these new needs and challenges. A change in policy will require the creation of new, more proactive ways of thinking, institutional changes and implementation mechanisms. New adaptation skills, etc. will also be required.

There is a need to re-examine the current development discourse at various levels with reference to climate change, and also in the localised context. Factors requiring reflection include technological deployment that contribute to climate change, financial instruments that support environmentally unsustainable expansion, the marginalisation effects of afforestation on small-scale livestock practices, the current emphasis on productivity, and income generation capacity based on



crop or livestock choices rather than appropriateness to the local environmental context. The current focus of policy and institutional structures has been primarily on mitigation. Adaptation requirements now need to be integrated into all levels of planning and implementation in the local, national, regional and global contexts.

There is need for research of the various dimensions of the effects of climate change, especially that on lives and livelihoods in the region. Generic indicators need to be interpreted in the local context to understand changes better and then develop adaptation and mitigation strategies. Specific research and development activities to support sustainable solutions and responses to these effects (such as on crop productivity patterns, developing variants that would adapt easily to the ongoing and projected climate variations) is also an urgent requirement.

It is essential to engage the people at the grassroots (the first affected) in adapting to the changes and exploring alternatives for environmentally sustainable

livelihood practices that are appropriate to their local realities. There is scope for large scale awareness creation and capacity building programmes at the grassroots. It may also be useful to look into indigenous coping strategies and traditional solutions in the process of developing contextually appropriate adaptation responses, and document and integrate them into the broader climate change framework. Local level experiences can also be shared at a large scale to influence change. Specific interventions such as those in the livestock sector can also be considered.

At the global level there is a need to develop an advocacy agenda and collect pressure groups to influence policy towards benefiting the majority. This can be successful only with the active involvement of the governments, and when effectively supported by civil societal and other groups. The need for constant dialogue and consultation between all stakeholders in the climate change dialogue and development process is highly relevant. It would also be useful to leverage information flows, partnerships and networks for focused action.



3.3 Mitigation and Adaptation Strategies in South Asia's Geo-climatic and Cultural Context

There is some way to go before the developing world and South Asia can anticipate sustained support from industrialised countries for acquiring new or alternative technologies towards adaptation.

It becomes important to seek prescriptions for climate change adaptation (and mitigation) appropriate to the context of South Asia's geographic, climatic, and cultural realities, especially given that local, specific solutions in terms of development stages and environmental contexts are different. The nature of the problem has resulted in an environment of risk and uncertainty which continues to bog policy decisions. However adaptation is also to be effected at the local levels as a matter of urgency. Appropriate localised adaptive responses need to be derived for increasing incidence of droughts and floods and other extreme weather events. Immediate efforts towards seeking solutions to gaps in knowledge, technology, resources are required.

There are also specific concerns that arise in local contexts such as loss in crop productivity leading to financial exploitation and unsustainable environmental practices, reduced coping mechanisms, diminished safety nets, and the lack of resources and rights of marginalised groups such as women, all of which restrict adaptive choices.

Steps include raising political awareness and engaging all political position at the domestic and international levels, securing finances for the development and deployment of adaptive technologies, advocating for appropriate aid and trade policies, reducing energy consumption, formulating and engaging in appropriate compliance and management frameworks for resource and energy use, etc. Some directions that can be pursued are the implementation of coast zone management policy, exploring appropriate insurance options for the affected and seeking solutions to the issue of migration.

A range of adaptive and mitigative options that are appropriate to local realities can be sought from within

the South Asian region and regional experiences. The success of these options can be analysed to provide lessons which can then be communicated. Access to knowledge and knowledge transfer (including the sharing of best practices) then become critical elements in formulation, dissemination and inclusion (in the wider climate change debates) of context-specific solutions. Knowledge and its appropriate use can mean the difference between poverty and wealth and conservation of environment. Technologies to facilitate information sharing and bringing together knowledge and mechanisms can prove pivotal in this regard. Financial (including microfinance) and institutional development mechanisms are the other imperatives to support local solutions.

South Asian experiences and innovations also highlight the primary need to generate awareness about climate change and its implications and engagement with decentralised mechanisms to derive appropriate and effective solutions. The relevance of the creation of common assets and productive resource use, and also the diversification of livelihoods as a few basic adaptive strategies to offset some degree of climate change impacts can also be cited. Communities need to be mobilised for effective adaptation (with the related need for capacity building), and there exists a continued emphasis on prevention in terms of changes in behaviour and lifestyle to the extent possible.

Engaging in wider networks and dialogues for responding to climate change challenges remains an imperative. It is important to leverage advocacy platforms and to seek the alignment of financing mechanisms and political will on global, regional, national and sub-national scales. This broad platform can be used to facilitate cooperative piloting of measures that can provide references for local solutions across the world, negotiate environmental and scientific pricing mechanisms and targets to control greenhouse gas emissions and relevant regulatory mechanisms, and to pursue possibilities for cooperation and support.



3.4 Climate Change Challenges in South Asian Development Initiatives: Establishing Inter-Sectoral Relationships

The primacy of development concerns across the South Asian region, combined with the urgency of the need to respond to climate change challenges make the identification and establishment of the inter-sectoral relationships a useful and in fact necessary exercise towards fostering appropriate responses to climate change in the region.

It becomes important to mainstream climate change concerns and identify the climate challenges with reference to gender, education, health, and other key areas, as well as locate these concerns and challenges in the overarching governance framework at various levels. Work on any area facing particular climate change risks opens up the possibility of inter-linking all sectors in the light of overall benefits to that particular area.

Some features of the present and potential role of various sectors with reference to climate change concerns and specific sectors can be derived from the South Asian experience. Science and technology for instance is instrumental in providing both evidence and research solutions to support knowledge regarding climate change and its effects, as well as being pivotal to demystifying, shaping and facilitating general and specific responses to its challenges. It provides the platform to develop innovations (such as solar power) for alternative and more efficient energy use, various mechanisms and pro-poor applications to raise living standards and provide some security against climate threats, and secure connectivity and communication to underpin efforts for securing adaptation to climate change and for climate justice. In this regard it is integral to the exercise of information exchange and knowledge management.

Community-based and grassroots organisations can be especially relevant with reference to serving the awareness and capacity building needs of the vulnerable countries, communities and people. These organisations and people's associations can be

effective stewards for information dissemination regarding the hazards related to climate change and some notion of appropriate responses. Information and experience from the grassroots and communities can then also be channelled to influence policy making decisions at state as well as national level. Practical experience from the grassroots can also help understand good practices and can produce evidence to influence policy. Lessons learnt from grassroots experiences and research can help build an effective multilevel climate adaptation framework.

The media can play a vital role by showcasing the grassroots initiatives and encouraging the masses to share their view point. It can highlight eco-friendly practices employed by people in their day-to-day lives and provide a platform for sharing information and experiences. It is also vital to advocate the need for convergence of various sectors for mitigating risks of future degradation of environment due to climate change. Also, advocacy is essential for generating political will and mobilising the administration. Media can also safeguard the experiences of various initiatives for future use.

Academic institutions support research on climate hazards and possible adaptation and mitigation techniques for climate change. They also facilitate intensified focus on awareness among and capacity building of the youth in the region, to sensitise and equip them to deal with climate change as well to spread further awareness. The climate change concern can be incorporated in academic curricula to ensure maximum reach of information.

The private sector can especially support and in some spaces provide leadership in mitigation and pro-poor initiatives. For instance unique desalination and water management techniques as de-linking fresh water and saline water by cementing the bottom of wells and recharging fresh water streams to help substantially



improve the availability and quality of drinking water in certain areas have been pioneered in the private sector and can offer lessons as well. This nature of context-specific (yet scalable) response can improve productivity and also economic conditions in the area.

The policy or public sector is critical in facilitating and administering to inter-sectoral convergence for addressing climate change related threats, including preparedness for disaster and mitigation, and providing a supportive environment for all non-governmental initiatives. Steady government with minimal disruptions or policy changes (as well as effective coordination and

cooperation mechanisms) can lead to sustained combined efforts towards addressing climate change, with passionate and active political leaders to take the agenda forward. Political stability in a country or a region can also play a positive role in ensuring sustained focus on immediate and long-time concerns of human development and climate change.

There is also need to consistently engage the private sector, policy makers and civil society organisations and other groups for advocacy, alignment and implementation of climate change responses. Civil society in particular can play an active advocacy role.



3.5 Inclusion of South Asian Grassroots Voices in the Climate Change Dialogue

It remains undisputed that the impact of retarded development, climate change, inequitable or biased strategies for climate change mitigation, and slow or non-implementation of adaptive strategies is maximum and immediate upon the poor, marginalised and vulnerable communities and countries.

The responsibility for this current situation has primarily been attributed to the developed world. However elites and other sections of the global South are also complicit in the makings of climate injustice.

Appropriate lessons can be drawn from the climate oversight of the developed countries that is also being followed by substantial sections of developing country populations, to avoid the same mistakes as well as derive alternatives.

An economic paradigm based on immediate profits and a predominant consumerist attitude is one of the core drivers of today's climate injustice. The related surge in production and consumption levels in a rapidly globalising world has led to exceedingly unsustainable lifestyles across the world. This predicament may also be construed as the downside of globalisation which, while it has produced wealthy and globalised communities in many places, has also prevailed upon us collectively at a cost, that is, a climate catastrophe waiting to happen.

The grassroots communities on the other hand, including forest-dependent communities and indigenous peoples across South Asia have not yet been mainstreamed into globalised economies. Due to their direct relationship with their environment and natural resources, the lives of these communities are circumscribed by the notion of sustainability offering a number of lessons in the quest for defining and securing effective responses to the climate change problem in addition to achieving clarity regarding development constraints to climate change adaptation at the grassroots. It is essential to understand the priorities at the grassroots level, how people deal with events such as disasters, and what visions they have for their future.

The need for inclusion of grassroots voices and alternative solutions is as much an imperative in the climate change dialogue as it has been in the development debates. There is a pressing need to identify and also create paces that will enable the vital processes of engagement and action to include grassroots voices, and enable decentralised and environmental planning. There is a need to revisit our traditional knowledge systems which can be substantiated with reference to the importance of ayurveda and homeopathy.

Natural resources management is an oft-repeated solution but this can be successful and can deliver efficaciously only when people have rights over their resources. It is the people at the grassroots who are now losing out to a distorted definition of development.

At the same time the poorest regions in India are the richest when it comes to their biodiversity profile. These regions abound in a rich variety of flora, fauna and mineral wealth, which natural affluence is under grave climate change and development threats.

Reorganising priorities and subsidies in the budget, making Governments more accountable are issues that are pertinent today; these issues also point to the important role of advocacy by civil society that comes into play. The relevance and efficiency of the current advocacy strands for promoting grassroots inclusion and voices have to be reviewed and reworked if need be. For this, various grassroots campaigns have always been very effectual.

Changes in policy and implementation frameworks are necessary to initiate a change in the present inequitable developmental process, towards the inclusion of grassroots communities. The current approaches across sectors and agencies for addressing the concerns of the marginalised and vulnerable communities and populations in the region need to be reviewed to bring development efforts in tune with our climate demands.



3.6 Role of ICTs and Emerging Media in Addressing Climate Change Challenges

ICTs and new media technologies, particularly those that harness online social networks, are increasingly being viewed and used as tools of change and as platforms to engage with governments, businesses, activist networks, communities and people across countries. ICTs are being used strategically to build awareness, create sensitisation, exchange and share information and experiences, communicate and aggregate scientific and academic knowledge, and facilitate training and public awareness.

With specific reference to climate mitigation and adaptation efforts, various technology-based communication options can be used for travel replacement to reduce Co2 emission. Radar, remote sensing, GIS and satellite imagery can all be used to raise awareness of the current status, effects and changes occurring as a consequence of climate change. Radio space that is being insufficiently used as of now can be leveraged to maximise the reach of information regarding climate change, its effects and some delineated responses including conservation of water and electricity, etc. Mechanisms such as telecentres can play a role in facilitating adaptation.

In the broader framework ICTs can facilitate the exchange of localised solutions that are essential in responding to climate change in addition to underpinning a knowledge base for enhancing access to relevant climate and development information. These technologies can serve as a platform for improved observation, networking, information sharing, training and public awareness, and also support an international framework for cooperation and action. ICT applications can be customised to local needs, offer variety of innovation options and provide an extremely effective networking platform across the developing world, countries, sectors, interests and individuals.

It may be acknowledged that while there a range of ICT tools that are available even in the South Asian context, capacity to use the tools needs to be built. Research and innovations on effective ICTs should

constitute an important element of all initiatives aimed at addressing climate change challenges. Most importantly, the lack of ICT infrastructure needs to be addressed through suitable lobbies among government and telecommunication sectors.

The relevance of media is underlined with reference to its ability to undertake focused programmes that can generate awareness on social, developmental and climate change inter-linkages. Emerging media can be used to maximise information dissemination. The accessibility of new media to scientists and social activists and various social networks allows it to serve as a platform for coordinated response and concerted action. Thus media performs essential advocacy functions.

It can bring information on development priorities into the foreground in a real and accessible way, and through planned effort, public concern can be refocused on overarching imperatives of climate stabilisation over immediate realities of conflict and deprivation – real to South Asia. Media also allows for drawing on the appropriate format for various target audiences.

Civil societal organisations also have a huge responsibility to bring climate change discussions and information regarding the impact of climate change on grassroots communities into mainstream media. These voices can be highlighted towards the development of content and messages that are clear, localised and accessible. Scientific and social expertise is also required to shape the content of such messages. Children and youth can also be identified as key target audiences as they are more open to accepting lifestyle changes and are the decision-makers of tomorrow.

It would be useful to acknowledge the diversity of media in terms of traditional and emerging media including print, broadcast, electronic, mainstream, institutional and alternative, and also across different languages. Each of these has a role to play in targeting



different audiences and it is important to understand media functions and constraints. An urgent priority is the need to develop capacity and expertise among journalists to report on and understand climate change issues to bring it to the fore on prime time TV and radio and print media.

ICTs and the media can sustain people-centric campaigns and bring climate change concerns closer

to the people. There is a need to look into securing and extending the global commons for both broadcast and telecommunication and ensuring this public resource be managed in the public interest, and for supporting community and people-centered media, traditional and new (such as community radio).



3.7 Collaborations and Partnerships for Development and Equitable Climate Change Mitigation Policy and Initiatives

Effective action towards development and climate change mitigation and adaptation hinges upon collaborative efforts and partnerships across issue areas, interest groups, and geographic and socio-economic boundaries. Thus it is important in the current stage to clarify and establish the stake of all people and sectors in climate change mitigation and adaptation, and in the pursuit of development.

A collaborative and partnership based approach can synergise efforts to realign different interests and help secure space for Southern perspectives with respect to policy and initiatives. Collaborations and partnerships also enable the effective leveraging of opportunities for advocacy and action. Partnerships have proved successful for creating information and knowledge networks as well.

Climate change is an issue of global concern, engaging actors across science, politics and the grassroots. The topic cuts across interest groups and issues, proving the inadequacy of restrictive responses and highlighting the need to break out of silos. Thus there is a need for strategic alliances across the private sector, civil society, government and with different actors at the local, national, regional and international levels. Extensive partnership network can help to push the climate change and climate justice agenda onto relevant regional and global platforms.

South Asia is home to a variety of collaborations and partnership models that are providing the framework and implementation mechanisms for a range of development initiatives. These collaborations and partnerships can bring together sectors of knowledge, policy, technology, aid and finance, development, and also engage with grassroots communities as appropriate.

Partnership models that have evolved from public-private partnerships to multi-stakeholder partnerships can engage in concerted effort towards identified common goals. There is now a perceived need for a

South Asian platform on climate justice and sustainable development.

The relevance of these collaborations and partnerships can be extended to addressing regional and local climate change challenges, and also towards ensuring more equitable and just global climate policies and action. These networks can also be used as a ready platform to integrate development efforts, climate change response and climate justice issues. They can be leveraged to acquire knowledge, technology and financial solutions to development and climate change concerns.

A number of such partnerships are directed towards connecting communities, community livelihoods and empowerment programmes, education, country level transformation, and also engaging with non-governmental networks. Information networks (which can also be very successfully operated and expanded using ICT platforms) in particular facilitate better policy making along with increased transparency and responsibility.

Corporations are now engaging in partnerships for sustainable development, focusing upon the aspects of inclusive development and climate change. There is also effective internal corporate action being undertaken to align business processes and productions with environmentally sustainable goals. Voluntary actions in terms of reducing internal energy consumption, managing water consumption, limiting greenhouse gas emissions by way of business processes and activities can be popularised in this space.

Given the utility of partnerships and collaborative approaches it is useful to work towards defining the kind of understanding, knowledge, approaches, nature of collaboration and models of working to underpin partnerships for climate justice. The relevance of a technological platform to facilitate collaborations and partnerships can be cited once more.



4 | Conclusions and Way Forward



Conclusions

There is a common and undisputed view that climate change has global implications and is therefore a global challenge. These directions bring into sharp relief the dichotomy between global demands for mitigation and the more urgent, local imperative for survival and adaptation in response to unprecedented disasters. It is also widely recognised that the impact of climate change is very severely felt on poorer countries and marginalised sections in the countryside. Even without climatic change, environmental impact of development processes fuelled by the quest for economic growth is a considerable threat to food security and livelihoods, and effects of climate change will exacerbate the adverse implications further.

While emphasising the greater role and responsibilities of rich and developed nations to work for and spare substantial resources towards the mitigation measures, including technology development and its transfer into public domain, there is the recognition that developing countries cannot afford to be complacent. There is an urgency to look into issues and implications of climate change in developing countries and poorer regions and to be prepared to face its varied challenges.

Developing and documenting knowledge on Adaptation

A dearth of credible knowledge and evidence of the impact of climate change make it necessary to study, assess and predict likely impact and implications on South Asia, and ways of adapting to these challenges especially by the poorest and marginalised communities. ICTs can effectively contribute this process and also help document traditional knowledge and local good practices for wider reuse. At the same

time, the capacities to assimilate such knowledge at the grassroots level need to be strengthened. Traditional and mainstream media can be effectively combined to pass on messages and build awareness.

Influencing policy

Efforts at advocacy must be intensified to influence governments both in the North and South, to effect changes in policy, institutions and implementation mechanisms to meet the threats of climate change. There is need for cohesion and cooperation across ministries to deal with inter-sectoral challenges. This calls for continued advocacy at multiple levels – regional, national and local - among concerned stakeholders.

Working in partnerships

There is a need to sensitise civil society and grassroots organisations toward a true understanding of the implications of climate change on development through targeted awareness building programmes. It is imperative that we engage national and international donor and funding organisations and the private sector in support of mitigation measures and adaptive mechanisms at the grassroots. All stakeholders – the marginalised, media, government, private, civil society, academia and research – should advance into enduring and meaningful partnerships facilitating continuing dialogue to evolve policies and solutions and take them forward.



The Way Forward

The outcomes of ARM 2008 chart out the future course and directions for OWSA and its partners in pursuit of climate justice and development. It locates these efforts and activities in the broader canvas of the need for Southern activism, the inclusion of the grassroots and the marginalised, and the leveraging of various tools, technologies and media toward identified ends.

OneWorld South Asia aims to leverage its key ICT niche, to engage and amplify people's voices from South Asia in the world debate on climate change. In highlighting 'Climate Justice for the realisation of MDGs', we have successfully highlighted the linkages between development and climate change by focusing on the inter-related issues of poverty reduction vis-à-vis mitigation and adaptation efforts. We see access to key knowledge and enabling resources and partnerships as critical factors in taking this forward.

Key strategies in this direction could involve the analysis and assimilation of vast climatology knowledge, adaptation and mitigation methods across a wide constituency of actors representing multiple sectors in South Asia. OWSA intends to use its online platforms and channels for leading discussion and knowledge exchange on climate change in order to bring a vocal Southern perspective to global debates.

OWSA seeks to transform knowledge resources on climate change into messages that are easily understood by the common people, by using multi-

channel new and emerging media tools, even while promoting the use of powerful traditional media, for disseminating information to the masses.

OWSA aims at a bottom-up approach of local content to enable two-way sharing of relevant content across South Asian countries leading to a community-based, community-owned and community-managed knowledge repository on climate change. In this context, OWSA would direct innovative efforts to customise esoteric new technologies to create community-friendly media tools, and to ensure that grassroots communities have the necessary access, skills and resources to make best use of these tools.

OWSA will collaborate with civil society and community based organisations to ensure the inclusion of Southern voices in the global climate change debates and policies, and facilitate multi-stakeholder consensus on inter-related issues of economic development and the realisation of Millennium Development Goals.

OWSA looks forward to drawing upon the experiences and commitment of its partners and leveraging synergies that emerged from ARM 2008. A consultative mechanism will be applied for appropriating traditional and emerging media tools and producing relevant ICT4D innovations of knowledge-exchange, outreach and inclusion - toward a holistic vision on climate justice and sustainable development.



Position Document



OneWorld South Asia's Position on Climate Justice

Climate change is a global challenge, the current and future impacts of which will be faced by all populations, the developed and the developing world alike. The developed world remains primarily responsible for the level of greenhouse gas emissions that have contributed to global warming. At the same time there is the reality that the developing countries and emerging economies (including the countries of South Asia) would continue to add to greenhouse gas emissions on account of their pressing development needs.

There is also the growing recognition of the fact that it is the marginalised and the poor communities, and the least developed countries that are rendered the most vulnerable, and are the least able to adapt or cope with the impact of climate change. These current and projected impacts are understood to further compound their economic, social and cultural deprivations.

There is complete agreement (supported by scientific evidence and projections) that both approaches – mitigation and adaptation – are indispensable to short, mid, and long-term climate stabilisation; and the potential of ICT assisted knowledge facilitation is especially relevant in this context. At the same time we need to underline the principle of common but differentiated responsibilities in mitigating and adapting to climate change, supported by assertions of differentiated per capita contributions to greenhouse gas emissions from the developed and the developing countries. For instance, the per capita contributions of rapidly developing countries like India and China remain fairly low in comparative terms.

South Asia then is confronted with concerns and issues such as the reconsideration of the current development model and its climate linkages, especially when combined with problems related to the population density in South Asia; and questioning the non-differentiation of responses to the global problem, both in the continuing global discourse and in practice. Information, analyses, advocacy, and continued engagement for equitable dialogue are constant requirements to address the concerns and development dilemma being faced by South Asia.

We (OWSA and our partners) come forward to advocate for a global solution to the global challenge of meeting climate change demands, underpinned by global institutional and financial mechanisms. At the same time, we also maintain that the developed world is to be accountable for taking on the bigger burden of mitigation, and of financing adaptation efforts in developing countries of global south. We also seek the inclusion of the voices from the South, of the poor, the marginalised, and the grassroots communities in the climate change dialogue, and in formulating appropriate and just strategies for mitigating and adapting to climate change challenges. Here, we do press forward the need to harness all possible tools and technologies for facilitating two-way knowledge flow – to enable grassroots inclusion in addressing the challenges posed by climate change in South Asia.



Annexures



Climate Change Fact File

Observed Changes in Modern Climate

In recent usage climate change refers to changes in the modern climate.

The observed changes in modern climate include:

- Rise in global air temperature between 0.3 to 0.6° since the late 19th century
- Ranking of eleven of the twelve years in the period 1995-2006 among the twelve warmest years in the instrumental record of the global surface temperature since 1850
- Rise in the average atmospheric water vapour content since the 1980s
- Increase in the average temperature of the global ocean to depths of at least 3,000 metres
- Rise in global average sea-level at an average rate of 1.8 (1.3-2.3)mm per year over the period 1961-2003; the rate of increase over the period 1993-2003 averaged 3.1 (2.4-3.8)mm
- Decline in mountain glaciers and snow cover on average in both hemispheres, losses from ice sheets of Greenland and Antarctica
- Shrinking of the extent of arctic sea ice by 2.7 (2.1-3.3) percent per decade with larger decreases in summer
- Increase in average arctic temperatures at almost twice the global average rate in the past 100 years
- Decrease in maximum area covered by seasonally frozen ground (permafrost) in the Northern Hemisphere by 7 percent since 1900 with larger decreases in spring
- Changes in precipitation trends, with increased precipitation in eastern parts of North and South America, northern Europe and northern and central Asia; drying in the Sahel, the Mediterranean, southern Africa and parts of Southern Asia
- Freshening of mid and high-latitude waters, increased salinity in low-latitude waters
- Strengthening of mid-latitude westerly winds in both the Northern and Southern Hemispheres since the 1960s
- Prevalence of more intense and longer droughts over wider areas since the 1970s, particularly in the tropics and the sub-tropics
- Increased frequency of heavy precipitation events over most land areas
- Widespread changes in extreme temperatures over the last 50 years – cold days, cold nights and frost have become less frequent while hot days, hot nights and heat waves have become more frequent
- Increase in intense tropical cyclone activity in the North Atlantic since the 1970s

Factors Contributing to Global Warming

- Natural causes such as continental drift, volcanoes, ocean currents, the earth's tilt, comets and meteorites, variations in solar radiations,
- Greenhouse gas concentrations by natural and human activity

Greenhouse Gas Concentrations

Greenhouse gas concentrations have been identified as the primary cause of global warming since 1950. Greenhouse gases include water vapour, carbon dioxide, methane, nitrous oxide, ozone and also nitrous oxide, hydro fluorocarbons, per fluorocarbons and chlorofluorocarbons, etc.



Sources of greenhouse gas concentrations include:

- The use of fossil fuels such as oil, coal and natural gas that have underpinned the industrial revolution and its consequent expansion, and supplies most of our modern energy needs
- Changes in land use patterns, deforestation in particular
- Land clearing, agricultural practices, fertiliser application
- Use of aerosols, ozone depleting materials, cement manufacture

Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750. Carbon dioxide has been identified as the most important anthropogenic (derived from human activity) greenhouse gas.

The global atmospheric concentration of carbon dioxide has increased from 280 parts per million in pre-industrial times to 379 parts per million in 2005.

The global atmospheric concentration of methane has increased from a pre-industrial value of 715 parts per billion to 1732 parts per billion in the 1990s, and stood at 1774 parts per billion in 2005.

The global atmospheric nitrous oxide concentration increased from a pre-industrial value of 270 parts per billion to 319 parts per billion in 2005.

(Parts per million or ppm, and parts per billion or ppb are ratios of the number of greenhouse gas molecules to the total number of molecules of dry air)

Impact of Climate Change on Natural, Hydrological and Biological Systems

- The enlargement and increased number of glacial lakes
- Increasing ground instability (in permafrost regions) and rock avalanches (in mountain regions)
- Changes in the Arctic and Antarctic ecosystems

- Increased runoff and earlier spring peak in many glacier and snow-fed rivers
- Warming of lakes and rivers in many regions affecting thermal structure and water quality
- Earlier timing of spring events such as leaf-unfolding, bird migration and egg-laying
- Trend towards the earlier 'greening' of vegetation in the spring
- Shifts in ranges and changes in algal, plankton and fish abundance in high-latitude oceans
- Increases in algal and zooplankton in high-latitude and high-altitude lakes
- Range changes and earlier migrations of fish in rivers
- Increasing acidity of oceans

Impact of Climate Change on Natural and Human Environments

(as they are emerging)

- Effects on agriculture and forestry management at Northern Hemisphere higher latitudes, such as earlier spring planting of crops, disturbance in forest regimes due to fires and pestilence
- Effects on some aspects of human health such as heat related mortality in Europe, infectious disease vectors, allergenic pollen in the Northern Hemisphere in high and mid-latitudes
- Effects on human activity such as hunting and travelling over snow and ice in the Arctic and mountain sports in the lower Alpine regions
- Enhanced risk to settlements in mountain regions from glacial lake outburst floods caused by melting glaciers
- Reduced length of the growing season, with detrimental effect on crops due to warmer and drier conditions in the Sahelian region of Africa
- Losses of coastal wetlands and mangroves and



increasing damage from coastal flooding in many areas due to sea-level rise and human development

Some Climate Change Related Projections

Projections pertaining to further *changes* in the modern climate include:

- Further rise in the average global surface temperature (between 1.1°C to 6.4°C or 2.0°F to 11.5°F) in the 21st century
- Further rise in sea-levels by 25-28 cm by the end of the 21st century, due to ocean expansion and glacier melt
- Continued increase in the emission of greenhouse gases, between 25 to 90 per cent by 2030, from 1990 levels
- Energy use by 2030 will be 50 per cent higher than it is today, and carbon dioxide emissions are likely to grow by 62 percent

Projections pertaining to the future *impacts* of climate change include:

- Projected increase in annual average river run-off and water availability by 10-40 percent at high latitudes and wet tropical areas, and decrease by 10-30 percent over already water-stressed mid-latitude dry regions and dry tropics
- Projected decline in water supplies stored in glaciers and snow cover leading to reduced water availability for nearly one-sixth of the world population
- Likely increase in extent of drought affected areas
- Likely increase in the frequency of heavy precipitation (rainfall) events, augmenting flood risks
- Increase in the frequency of droughts and floods, also affecting crop production
- Projected increases and declines in crop productivity across regions, increasing the risk of hunger
- Assessment of increased risk of extinction of 20-30

percent of plant and animal species beyond an increase of 1.5-2.5°C in the global average temperature

- Progressive acidification of oceans
- Regional changes in the distribution and production of particular fish species, with projected adversities for aquaculture and fisheries
- Increased risk of coastal erosion and flooding along the coasts, exacerbated by human-induced pressures on coastal areas

Projected impacts pertaining to human industry, settlement, society and health include:

- Increasing vulnerability of industries, settlements and societies in coastal and river flood plains, those whose economies are closely linked with climate-sensitive resources, those in areas prone to extreme weather events, and those in rapidly urbanising areas
- Especially enhanced vulnerability of poor communities – particularly those concentrated in high-risk areas – with limited adaptive capacities, more dependence on climate-sensitive resources such as local water and food supplies
- Increased economic and social costs of extreme weather events, with substantial effect in affected areas spreading to other areas and sectors
- Increases in malnutrition and consequent disorders, with implications for child growth and development
- Increased deaths, disease and injury due to heat waves, floods, storms, fires and droughts
- Increased burden of diarrhoeal disease
- Increased frequency of cardio-respiratory diseases (due to higher ozone concentrations at ground-level)
- Altered spatial distribution of some infectious disease vectors



Projected Impacts Specific to South Asia

- Increased flooding, rock avalanches, and impact on water resources due to Himalayan glacier melt
- Decreasing freshwater availability (particularly in large river basins)
- Greatest risk of flooding to coastal areas (especially the heavily populated mega-delta regions)
- Compounding of pressures on natural resources and environment associated with rapid urbanisation, industrialisation and economic development, impinging upon the sustainable development of the region
- Decrease in crop yield up to 30 percent by the mid-21st century, which combined with the influence of rapid population growth and urbanisation will add to the prevalence of hunger in the region
- Rise in endemic morbidity and diarrhoeal disease (primarily associated with floods and droughts)

- Exacerbation of the abundance and toxicity of cholera in the region, due to increases in coastal water temperatures

Climate Change and Development

The projected impacts of climate change can vary due to the development pathway adopted.

Sustainable development can reduce vulnerability to climate change by enhancing adaptive capacity and increasing resilience. However, climate change can also slow the pace of progress towards sustainable development, through increased exposure to adverse impact and through erosion of capacity to adapt.

The Millennium Development Goals are one measure of progress towards sustainable development. Climate change could impede the achievement of these goals.

**** The document has been adapted from the IPCC Fourth Assessment Report and internet sources.***



ONEWORLD SOUTH ASIA
Annual Regional Meeting 2008

**CLIMATE JUSTICE FOR THE REALISATION OF MDGS:
Southern Perspectives and Voices**

8-9 FEBRUARY 2008
The InterContinental Eros, Nehru Place, New Delhi

Conference Agenda

Day I - 8 FEBRUARY, 2008	
09.00 am – 10.30 am	INAUGURAL SESSION Welcome Note: Shankar Ghose, President, Charkha Development Communication Network OWSA Director's Report Address by the Guest of Honour: Walter Fust, Director General, SDC & Chair GKP Saroj Devkota, Vice-Chairman, HLCIT, Govt. of Nepal Address by Special Invitees: Jocelyne Josiah, Adviser - Media & ICT for Asia, UNESCO Dana D. Fischer, First Secretary & Director, USAID India Inauguration of Annual Regional Meeting 2008 by the Chief Guest Inaugural Address by the Chief Guest: Natwar Thakkar, Founder, Nagaland Gandhi Ashram Vote of thanks
10.30 am – 11.00 am	Tea / Coffee
11.00 am – 01.00 pm	PLENARY SESSION – I <i>Opening the Debate: The Southern Dilemma and the Linkages between Inclusive Economic Growth, Poverty Eradication and Climate Change</i> Chair: Walter Fust, Director General, SDC & Chair GKP Special Message: R.K. Pachauri, TERI & IPCC (through video) Panelists: Minar Pimple, UN Millennium Campaign, Asia Wasim Zaman, UNFPA, South & West Asia Tara de Mel, Worldview, Sri Lanka S. Padmanaban, USAID, SAR Ali Tauqeer Sheikh, LEAD, Pakistan Rakesh Khanna, TARAenviro, India



01.00 pm – 02.30 pm	Lunch
01.30 pm – 02.30 pm	Highlighting Partnership Initiatives: DEF–OWSA Partnership on Manthan Award for best e-Content in South Asia Mission Swabhimaan Presentation by Nepal Delegation
02.30pm - 05.30pm	THEMATIC PARALLEL SESSIONS: CLIMATE CHANGE AND DEVELOPMENT CONCERNS
	Parallel Session IA <i>Impact on South Asia's Food Security, Income Opportunities and Livelihood Resources</i> Chair: Ashok Bharti, NACDOR, India Panelists: Amiya Sharma, RGVN, India Lucy Maarse, SAPPLPP, SAR Gopi Ghosh, FAO, India Nikhil Raj, WFP, India Hina Lotia, LEAD, Pakistan Motilal Dash, BITS-Pilani, India
	Parallel Session IB <i>Mitigation and Adaptation Strategies in South Asia's Geo-climatic and Cultural Context</i> Chair: Rama Kant Gauro, National Planning Commission, Nepal Panelists: Frans Neuman, Mountain Forum, Nepal Shankar Datta, Basix, India Md. Shamsuddoha, EJWG, Bangladesh Anupam Singh, Nirma University, India Shamima Akhter, ASWO, Bangladesh Girty Gamage, CENWOR, Sri Lanka
	Parallel Session IC <i>Climate Change Challenges in South Asian Development Initiatives: Establishing Inter-Sectoral Relationships</i> Chair: Siddharth Agarwal, UHRC, India Panelists: Reza Salim, BFES, Bangladesh Anil Gupta, NIDM, India Anumita Roychoudhary, CSE, India Sunil Rodrigo, DDF, Sri Lanka Zeenat Niazi, Basin South Asia, India



07.00 pm – 9.30 pm	ARM 2008 Gala Dinner Curtain Raiser on LifeLines for Education Service
Day II - 9 FEBRUARY, 2008	
09.30 am – 12.30 pm	<p>THEMATIC PARALLEL SESSIONS: VOICES AND ACTION FOR CLIMATE JUSTICE & SUSTAINABLE DEVELOPMENT</p> <p>Parallel Session IIA <i>Inclusion of South Asian Grassroots Voices in the Climate Change Dialogue</i> Chair: Kamla Bhasin, SANGAT, India Panelists: Jagadananda, CYSD, India Sunanda K.S., AID, India Ramesh Sharma, Ekta Parishad, India Md. Rafiqul Alam, Dwip Unnayan Sangstha, Bangladesh Osama Manzar, DEF, India Chetan Sharma, Datamation Foundation, India Manoj Mishra, Yamuna Jiye Abhiyan, India</p> <p>Parallel Session IIB <i>Role of ICTs and Emerging Media in Addressing Climate Change Challenges</i> Chair: R. Sreedher, COL, India Panelists: Hilmy Ahamed, YATV, Sri-Lanka Loe Schout, HIVOS, Netherlands Madan Pariyar, HLCIT, Govt. of Nepal Dinesh C Sharma, Mail Today, India Patrick Kalas, SDC, Switzerland AHM Bazlur Rahman, BNNRC, Bangladesh</p> <p>Parallel Session IIC <i>Collaborations and Partnerships for Development and Equitable Climate Change Mitigation Policy and Initiatives</i> Chair: Ravi Agarwal, Toxics Link, India Panelists: Joan McCalla, CISCO, Sri Lanka Ashish Garg, GESCI, India Allen Bailochan Tuladhar, FIT, Nepal Kamal Gaur, Basin South Asia, DA, India Lysa John, WNTA, India</p>



12.30 pm – 01.30 pm	Highlighting Partnership Initiatives: Launch of the South Asian Feminist Portal National e-Governance Stakeholders' Forum
01.00 pm – 02.00 pm	Lunch
02.00 pm – 04.30 pm	PLENARY SESSION – II <i>Charting the Way Forward: An Action Plan for South Asia</i> Chair: Hilmy Ahamed, CEO, YATV, Sri Lanka Presentation on thematic session outcome by Thematic Session Chairs / Nominees Moderated Q&A Summary & Synthesis of Key Issues – S. Rajakutty, NIRD, India Charting the Way Forward – Naimur Rahman
04.30 pm – 05.30 pm	VALEDICTORY SESSION Chair: Hilmy Ahamed, CEO, YATV, Sri Lanka Virtual participation & address on OneClimate Island – Anuradha Vittachi, OW Founder Final Comments by the Chair Participants' Feedback Closure of ARM 2008



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Participants' feedback: A bouquet of thanks!

It was a personal pleasure to attend ARM 2008. I learned greatly about public policy, the role of media, community empowerment, best management practices and capacity building, all closely knit with technological interventions. I am sure this will facilitate me in performing local level studies in an integrated and realistic manner.

Anupam K. Singh, India

I strongly believe in action. Strong and suitable recommendations should be brought in practice without delay in order to first maintain and second to gradually minimise Climate Change.

Rama Kant Gauro, Nepal

Thank you so much, OWSA; you did a lot to make this a success. I salute your passion, encouragement and spirit.

Md Shamsuddoha, Bangladesh

I found the meeting very meaningful and productive in the context of climate change. It was also a privilege to meet representatives from other organisations, and I appreciate the cooperation extended to all delegates.

Kuldeep Singh, India

It was a real joy to meet the very professional and spirited team members of OWSA, the galaxy of partners, and a range of other stakeholders. I have returned very inspired by your work, and innovative initiatives. Once again, congratulations for the excellent conference.

Ali T. Sheikh, Pakistan

Climate change is a huge issue world over. Every one of us has a role to play here in reducing energy consumption through our operations, our products and most significantly through enabling the use of technology to save energy consumption in our buildings, urban forms and transportation. It is an issue we all need to get involved in. I am pleased to be at this event to participate and learn from others.

Joan McCalla, Canada

My warm congratulations for the excellent meeting. Not only did I learn much on the subject, but the events of the two days opened up so many ideas and opportunities for all of us.

Tara de Mel, Sri Lanka

WNTA's participation in OWSA's ARM is linked to the issue of environmental justice and we see climate change as part of that larger agenda. We need to come together and continue this dialogue in our work and take it forward to influence Governments to take positive action as also hold the corporate sector accountable for environmental justice and climate change.

Lysa John, India

The discussions in the past two days in the ARM have shown that climate change is a defining challenge for human development in the 21st century. Media and ICTs have a fundamental role to play in development – firstly to create awareness of these complex issues at the grassroots level and secondly to bring the voices of those, most affected by climate change, into the mainstream policy debate to bring about real change and real action on the ground.

Patrick Peter Kalas, Switzerland



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