South Asia: Environment and Human Securities Conference

2nd & 3rd October, 2008
Visions Theatre, National Museum of Australia, Canberra

South Asia's Long March to Prosperity: Challenges of Poverty and Climate Change

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I. POVERTY AND CLIMATE CHANGE

1. Developing countries in South Asia have made notable progress in terms of accelerating their economic growth. By 2007, most South Asian countries achieved economic growth rates of 6% or more, resulting in a regional growth rate of 8.6%. However, as recent macroeconomic events have shown, South Asian countries continue to be vulnerable to global economic shocks such as the recent fuel and food price inflation, which has further weakened their fiscal positions, lowered economic growth projections, decreased the resources available to governments to deliver basic services, and develop needed infrastructure (Table 1). In particular, food price inflation is a special concern because food consumption is a large part of consumer spending. It is especially high for the very poor. The fiscal measures taken to mitigate the impact of import prices on inflation may limit fiscal space to improve the welfare of the poor. Poverty eradication in South Asia is a long term development goal.

Table 1: Key Macroeconomic Indicators

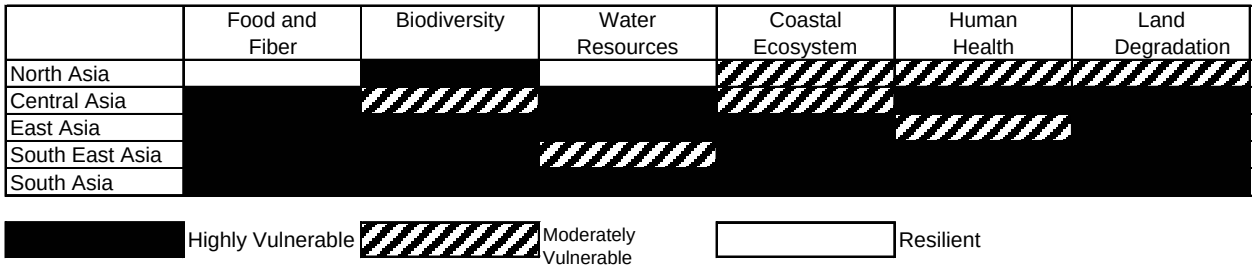
	Growth rate of GDP (% per year)			Inflation (% per year)			Current Account Balance (% of GDP)		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
Afghanistan	11.5	7.5	8.3	13.0	24.0	9.5	0.9	0.6	-3.1
Bangladesh	6.4	6.2	6.5	7.2	9.9	9.0	1.4	0.9	0.5
Bhutan	17.0	14.4	7.2	5.2	10.0	7.0	10.5	10.1	2.4
India	9.0	7.4	7.0	4.7	11.5	7.5	-1.5	-3.1	-3.6
Maldives	7.6	6.5	7.0	7.4	11.0	6.0	-40.1	-50.9	-40.0
Nepal	2.6	5.6	5.0	6.4	7.9	8.5	-0.1	1.9	1.5
Pakistan	6.8	5.8	4.5	7.8	12.0	20.0	-4.8	-8.4	-8.0
Sri Lanka	6.8	6.0	6.0	15.8	24.0	18.0	-4.2	-8.2	-8.4
(South Asia)	8.6	7.1	6.7	5.5	11.8	9.2	-1.7	-3.5	-3.9

Source: Asian Development Outlook 2008 Update, ADB

2. These macroeconomic conditions as well as the adverse impacts of climate change currently underway are challenging the goal of inclusive and environmentally sustainable economic growth in South Asia. Climate change renders poor people disproportionately vulnerable to shocks that disrupt their lives and livelihoods, as they often live in places and have livelihoods that are susceptible to natural calamities or adverse economic factors. The poor depend on rain-fed agriculture, live in the more exposed settlements and cannot afford protection or treatment for diseases such as malaria. In fact, in terms of

food and fiber, biodiversity, water resources, coastal ecosystem, human health, and land degradation, South Asia is considered to be most vulnerable to all these negative effects (Table 2).

Table 2: Vulnerability to Climate Change



Source: Adapted from National Institute for Environmental Studies, Japan

3. Further, more than 600 million people in the Asia and Pacific region still live in absolute poverty and almost half of the world's absolute poor live in South Asia, with many more still vulnerable to poverty. Although the impressive economic growth rates in South Asia in recent years helped raise living standards, people living in South Asia are behind other regions in terms of income, Human Development Index, poverty and other socioeconomic indicators (Table 3). The adverse impacts of climate change will hamper the achievement of a number of the Millennium Development Goals, including those for poverty eradication, child mortality, malaria, and other diseases, and environmental sustainability.

Table 3: Socioeconomic Indicators

	Population (million), 2007	GNI per capita, Atlas method, 2006 (US$)	Human Development Index (rank), 2005	Proportion of Population below $2 PPP a Day (%)	Life expectancy at birth (years), 2006	Adult literacy rate (%), 2007
Afghanistan	24.5	319	N/A	N/A	42.1	28.0 (2000)
Bangladesh	140.6	450	0.547 (140)	81.7 (2005)	63.7	53.5
Bhutan	0.7	1,430	0.579 (133)	N/A	65.3	55.6
India	1,134.0	820	0.619 (128)	79.6 (2004)	64.5	66.0
Maldives	0.3	3,010	0.741 (100)	N/A	67.9	97.0
Nepal	26.4	320	0.534 (142)	64.3 (2003)	63.2	56.5
Pakistan	159.6	800	0.551 (136)	59.6 (2004)	65.2	54.9
Sri Lanka	20.0	1,310	0.743 (99)	41.5 (2002)	75.0	91.5
(South Asia)	1,506.1*	774	0.605 (130)	76.9	64.3	63.2
(Central/West Asia)	78.2*	1,527	0.729 (101)	23.6	67.7	98.5
(East Asia)	1402.3*	2,913	0.783 (79)	37.8	72.4	92.3
(South East Asia)	574.7*	1,778	0.728 (101)	39.0	68.7	91.2

Regional figures are calculated by weighted average except population.
* Regional total
Source: Key Indicators 2008, ADB

II. IMPACTS OF CLIMATE CHANGE IN SOUTH ASIA

4. Climate change effects are already taking place worldwide and will continue to severely impact lives and livelihoods of people across the globe including South Asia. The South Asian region is particularly vulnerable to such climate and environmental changes as it is already warmer, on average, than developed regions, and also suffers from high rainfall variability. As a result, further warming will bring higher costs and few benefits to South Asian countries.

5. Adding to these challenges is the fact that the impacts of climate change are not evenly distributed--the poorest countries and people will suffer earliest and the most. Poverty, low incomes and geographic vulnerabilities of counties in the region make adaptation to climate change particularly difficult. Specific physical impacts that are likely to affect South Asian countries include the following:

(i) Spread of vector and waterborne diseases such as malaria and dengue fever, cholera and typhus due to increased population of mosquitoes inhabiting enlarged stagnant water areas, and deteriorated sanitation infrastructure;

(ii) Reduced crop yields due to increased temperatures and water scarcity. As the poorest countries in the region are heavily dependent on agriculture--the most climate-sensitive of all economic sectors--the 30% decline in agricultural production due to climate change will trigger inevitably higher risk of hunger in South Asia; and

(iii) Intensified and more frequent droughts in Northern, Central and Southern parts of South Asia, and more recurrent floods; and reduced fresh and potable water supplies due to depleted ground water tables.

6. South Asian population also will be harshly affected because of displacement of hundreds of millions people currently inhabiting low-lying and coastal areas in Bangladesh, Sri Lanka, Maldives and India. The 2007 IPCC report estimates that in Bangladesh alone 35 million people will be dislocated and most likely migrate to urban settlements, increasing the amount of population living in slums by 40%. Between 10% and 15% of Bangladesh's coastal land will submerge. In Sri Lanka, 60% of the population living in low-lying and coastal areas will lose their homes and land and be forced to resettle. Extreme downstream flooding resulting from outbursts of glacial lakes and mountainous rivers in Nepal, Bhutan, and Northern India will cause devastating floods in downstream lands. The ongoing deluge tragedy in the Indian State of Bihar is just one example to the point. The last but not least important regional dimension is the impact on water and energy infrastructure. For example, hydroelectric capacity across the region will be highly affected by changed monsoon cycles and shifting snow lines causing reduction of power

production in Nepal, Bhutan, Sri Lanka, and India. This will further exacerbate poverty for many impoverished communities as revenues from regional hydroelectric power trade is the main source of foreign currency for poor countries such as Bhutan and Nepal. In Bangladesh, Bhutan, Nepal, and India where the level of rural electrification remains between 40% and 60%, the reduced power availability will further reduce access to energy, clean water, and sanitation for poor rural households.

III. DEVELOPING COUNTRY'S RESPONSE

7. Developing countries of South Asia have responded to the challenges of climate change and are already working to understand area-specific threats and devise coping mechanisms. They are gradually developing strategies and programs for both (i) climate change mitigation efforts to reduce greenhouse gas (GHG) emissions, and thus contribute to the global response to this challenge and (ii) adaptation measures to improve their resilience to the local climate change impacts.

8. The Government of Bangladesh considers climate change as a priority concern and is committed to taking urgent and long-term actions to reduce the vulnerability of its people and risks to national development. Recognizing various dimensions of the challenge, the Government has taken steps for climate resilient development. The country is well set to address long-term measures in the national development planning and implementation process through the National Adaptation Program of Action and National Climate Change Strategy and Action Plan. These documents define a comprehensive set of policy interventions and prioritize investment needs to facilitate management of long-term climate risks in food security and health. The implementation of the National Climate Change Strategy and Action Plan will be provided through disaster management and infrastructure development measures; enhanced knowledge management; realization of mitigation actions and a low carbon development path, and institutional building.

9. In 2006 the Government of India formulated its Integrated Energy Policy, which is a broad overarching framework for guiding the policies governing the production and use of different forms of energy from various sources. The concerns regarding the threat of climate change was an important issue in formulating the energy policy. Since the impact on the country's poor, due to climate change, is considered very serious, the Integrated Energy Policy suggests a number of initiatives that could reduce the GHG emissions intensity of the economy by as much as one third. The proposed measures include the following:

- Implementation of energy efficiency measures in all sectors;
- Emphasis on mass transport projects;

- Active and effective policy on renewable energy including biofuels and fuel plantations;
- Accelerated development of nuclear and hydroelectricity;
- Technology missions for clean coal technologies; and
- R&D focused on climate friendly technologies.

10. The Government considers that India must pursue technologies that maximize energy efficiency, demand side management, and conservation. Early implementation of the Integrated Energy Policy principles would contribute substantially to putting the economy on a sustainable higher growth path.

11. In June 2008, the Government of India issued its National Action Plan on Climate Change, outlining existing and future policies and programs to address climate mitigation and adaptation. The plan identifies eight core "national missions" running through 2017 and directs ministries to submit detailed implementation plans to the Prime Minister's Council on Climate Change by December 2008. The eight missions focus on increasing share of solar energy in the total energy mix; implementing energy efficiency measures; launching sustainable habitats; managing effective water resource; safeguarding the Himalayan glacier and mountain ecosystem; enhancing ecosystem services; making agriculture more resilient to climate change and setting up a Strategic Knowledge Mission for focused research on climate change. The National Plan emphasizes the overriding priority of maintaining high economic growth rates to raise living standards, and identifies measures that promote India's development objectives while also yielding co-benefits for addressing climate change effectively.

12. In Bhutan, the Government realizes the vulnerability of the country's key economic sectors, such as forestry, agriculture, water and energy resources, to the impacts of climate change. The national level efforts are concentrated on incorporation of short- and long-term adaptation measures into the country's development plans. Bhutan's National Adaptation Program of Action was formulated to create awareness among all stakeholders of the inevitable effects of climate change and climate variability on people's lives and to develop adequate capacity to respond to future climate change threats. Specifically, the objectives of the National Adaptation Program are to (i) identify urgent and immediate projects and activities that can help communities adapt to the adverse effects of climate change; (ii) seek synergies and combinations with the existing developmental activities with the emphasis on the impacts of climate change; and (iii) integrate climate change risk into the national planning process.

13. Other countries in the region such as Nepal, Sri Lanka, and the Maldives have yet to come up with specific national climate change policy interventions and related implementation plans. The current environmental policy frameworks could serve as a sound foundation for incorporating climate change

mitigation and adaptation aspects into the national environmental policy agendas and reflecting climate risk prioritization of investment and capacity-building needs in national development plans.

IV. ASIAN DEVELOPMENT BANK'S RESPONSE TO CLIMATE CHANGE

A. Strategic Thrusts

14. **Long-Term Strategic Framework and Climate Change**. The Asian Development Bank's (ADB) new long-term strategic framework for 2008—2020 called "Strategy 2020"-- focuses on responding to climate change as part of the broader agenda of environmentally sustainable economic growth in Asia and the Pacific region. As climate change is predicted to disproportionately affect the poor, addressing climate change is also integral to achieving inclusive growth in the region.

15. **Mainstreaming Climate Change in ADB Core Operations.** In line with Strategy 2020, ADB seeks to help the region address the causes and consequences of climate change while ensuring continued economic growth and poverty reduction. ADB is scaling up support by mainstreaming climate change into its core development operations, mobilizing finance, and building capacity and knowledge in this area.

B. Mitigation Thrusts

16. ADB is helping its developing member countries (DMCs) move toward lower-carbon development paths by promoting: (i) energy efficiency, renewable energy, switch to cleaner fuels, and other low-carbon energy options; (ii) efficient transport systems; (iii) improved urban sanitation and reduction of fugitive methane emissions (emissions that escape from processes because of leaks or evaporation and are not under the control of a capture system); and (iv) sustainable land use and forestry.

C. Adaptation Thrusts

17. ADB is also helping the region's economies enhance their resilience to adverse climate change impacts through mainstreaming adaptation measures into national, sectoral, and project level plans and actions by (i) incorporating vulnerability risks into national development strategies and actions; (ii) increasing the climate resilience of vulnerable sectors such as water and agriculture; (iii) climate proofing of projects[1]; and (iv) addressing social dimensions (health, education, migration, livelihood, disaster risk mitigation, gender, governance).

[1] The "climate proofing" concept entails incorporation of climate change risks in the project design so that it is possible to avoid most of the damage costs attributable to climate change, and to do this in a cost effective manner. Examples

D. Financing Thrusts

18. As a development finance institution, ADB recognizes that it has an important role in providing the financial resources needed to help make climate change mitigation and adaptation actions more affordable to DMCs. ADB is working with multiple partners to: (i) mobilize additional concessional resources; (ii) catalyze private sector investments; and (iii) maximize the use of market-based mechanisms such as the carbon and insurance markets.

E. Partnership Thrusts

19. Climate change is a global challenge and therefore requires coordinated and collective response from governments, international organizations, civil society and the private sector. ADB is collaborating closely with various development partners to advance the climate change agenda, recognizing that sustainable development and poverty reduction remain the paramount goals.

20. Since the Gleneagles Summit in 2005, multilateral development banks (MDBs) have worked together on the development and implementation of the Clean Energy Investment Framework (CEIF). As agreed in Gleneagles, a joint report on the progress of the CEIF was prepared for the 2008 G8 Summit. Building on the achievements and lessons learned from CEIF, the MDBs are broadening collaboration to mobilize further resources for tackling climate change, through the MDBs' Climate Investment Funds (CIF). The CIF consists of (i) Clean Technology Fund (CTF); and (ii) Strategic Climate Fund (SCF) - including programs for climate resilience (adaptation), greening energy access, and sustainable forest management.

21. ADB is also working with the World Bank and the Japanese Government to support the analysis of climate change risks and their costs in six coastal mega cities of Asia, namely Bangkok, Ho Chi Minh, Jakarta, Karachi, Kolkata, and Manila

22. ADB has partnered with several leading academic institutions in the region to build knowledge on various topics: *Clean Energy*—The Energy Research Institute (TERI) in New Delhi, India; *Climate Change*—Tsinghua University in Beijing, PRC; and *Reduce, Reuse, Recycle (3Rs)*—Asian Institute of Technology in Bangkok, Thailand; *Water and Climate Change Adaptation in SE Asia* —National

include reinforced construction designs of infrastructure facilities (e.g. power generation plants, transmission towers and distribution poles, high pressure gas transmission pipelines, highways and secondary roads, water supply networks and waste water treatment facilities, residential buildings, etc.) that can withstand extreme weather events and continue functioning after the disaster strikes. "Climate proofing" also implies cost effective planning and regulatory measures that take into account both current and future climate related risks.

Hydraulic Research Institute of Malaysia (NARIM); and *Urban Water Management*—PUB Waterhub, Singapore.

V. ADB CLIMATE CHANGE STRATEGY IN SOUTH ASIA

23. The primary objective of the ADB's climate change strategy for the region is to maintain and increase the effectiveness and benefits of economic development and poverty reduction efforts undertaken by DMCs as these efforts are becoming threatened and constrained by the added costs and risks related to climate change.

24. In its response to climate change threats in the region, ADB is scaling its support with providing additional financing, facilitating transfer of technology, and building knowledge and capacity to equip DMCs with needed means to cope with and adapt to unavoidable consequences of climate change. ADB's operational priorities are to help the countries in the region:

(i) enhance climate change mitigation components in sectoral development project and to take advantage of low carbon growth opportunities;

(ii) strengthen climate resilience through preparation of country's specific risk-based approaches to adaptation along with mainstreaming adaptation into economic planning, policy and project development; and

(iii) realize multiple benefits of sustainable development through low carbon investments in sectoral infrastructure. For example, from 2008 to 2011, ADB will invest about $3 billion in public sector energy projects, which specifically embrace energy efficiency improvements and power generation from clean and renewable energy sources.

25. **Climate Change Implementation Plans:** As part of its climate change mainstreaming, ADB is developing regional climate change implementation plans (CCIP) for each region. The CCIP will be the basis for the establishment of country-specific climate change action plans in the form of investments and capacity building to be integrated into each country partnership strategy and regional cooperation strategy. Given country-by-country varying needs, the CCIPs will be designed to meet nationally defined objectives. Private sector opportunities will also be incorporated.

26. Given all the adverse impacts of climate change, there will be increasing needs for defensive or adaptive investments to avoid such negative consequences, especially in the region's poor countries which are deemed the most vulnerable. For example, the design of hydropower, water supply systems, roads, bridges, schools, and ports development projects may need significant adjustments to deal with

greater precipitation variability or more frequent severe storms. Transmission towers should be made to withstand higher wind speeds. The agricultural sector must consider the greater variability of water supply and flooding, and increased demands for drought and flood resistant crops, irrigation innovations, and other technological and management measures. Coastal cities, flood prone areas, and low-lying infrastructure will need to be climate proofed. Disaster risk reduction and safety nets have to be developed.

27. On the mitigation end (reduction of GHG emissions), substantial changes will be needed in both production and consumption patterns, affecting especially the energy, transport, urban, and natural resources sectors. Power generation from hydrocarbons–coal, oil and gas--must be done as cleanly and efficiently as possible. ADB places great emphasis on dramatically improving energy efficiency to reduce electricity demand fueled by the burning of hydrocarbons. Development of renewable energy and other low- or zero-carbon energy sources must accelerate rapidly. Transportation patterns must adjust, with motorized vehicles becoming far more energy efficient, and lower-carbon alternatives–-such as public transport systems, bikeways, and walkways-–made readily available. Sustainable cities and factories of the future will need low-carbon transport alternatives, energy efficient buildings and industrial processes, new approaches to wastewater treatment and solid waste management, and many other steps to reduce GHG emissions.