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Environmental Challenges in South Asia ¹

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Introduction

The prosperity of the South Asian region, home of the glorious Indus civilisations and cradle of Buddhism, and its ability to be part of the Asian renaissance of the 21st century are predicated on the prudent management of its fragile and excessively exploited ecosystems and on its ability to cope with the multifaceted challenges of climate change. Sound governance in each South Asian country, peace and cooperation with neighbours, and an enabling global context are the essential prerequisites of a sustainable, prosperous future for South Asia.

¹ This paper by Mr Shafqat Kakakhel, former Assistant Secretary General/Deputy Executive Director of the United Nations Environment Programme (UNEP), draws upon the South Asia Environment Outlook 2009, jointly produced by UNEP, South Asian Association for Regional Cooperation (SAARC) Secretariat and Development Alternatives (New Delhi). The paper is also based on Mr Kakakhel's seminar on this subject under the auspices of the Institute of South Asian Studies (ISAS), an autonomous research institute at the National University of Singapore, on 18 September 2012. The views expressed in the paper are those of the author and do not necessarily reflect those of ISAS, UNEP, SAARC Secretariat and Development Alternatives (New Delhi).

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Geophysical Setting

The eight countries of South Asia occupy no more than 4.5 million sq km of land but host over 1.6 billion people – more than a fifth of the global population – growing at an alarming rate of 1.5 per cent – 1.8 per cent annually, which makes South Asia one of the most densely populated regions of the world.

The amazingly diverse geophysical features of South Asia comprise the lofty mountains of the Himalayas, Karakoram and Hindu Kush (HKH), vast and verdant plateaus and valleys, three major river systems with scores of tributaries, islands, lakes and wetlands, enormous barren deserts and dry-lands, and a 10,000-km long coastline.

The tropical monsoon climate of the region is sustained by the summer and winter spells of the monsoon winds that bring in rains which feed the rivers and aquifers and are indispensable for agriculture and human survival.

The role and state of agriculture provide the backdrop for South Asia's natural environment profile. Significant successes in non-agriculture production and the services sector notwithstanding, agriculture accounts for a quarter of the region's GDP, half of all jobs, 55–65 per cent of livelihoods to the majority rural population and industrial raw material for domestic consumption and export. In India, agriculture contributes just 15 per cent to the GDP but supports livelihoods of over half of the population. Thus far, agriculture has served South Asians well but its ability to continue to do so would require the resuscitation of the health and resilience of the ecosystems.

Ecosystems

South Asia has inadequate land resources in terms of both quantity and quality. India supports 17 per cent of the global population with just 2.4 per cent of the land area, 45 per cent of India's cultivable land is arid or semi-arid or severely degraded; the figures for Pakistan being similar.

Vast river deltas and large swathes of irrigated fields account for less than half of the cultivable land in India and Pakistan. The inputs-centred Green Revolution of the 1960s and 1970s, intense farming necessary to feed the exponentially growing populations and produce industrial raw material, poor maintenance of irrigation infrastructure, excessive use of chemical fertilizers and pesticides, growing industrial run-off, and water-logging and salinity have led to degradation of the soil. Population growth and unplanned and uncontrolled urbanisation and poor land-use practices have led to the shrinking of cultivable land and

reduction of crop yields in the excessively cultivated fields. The forest resources of Pakistan have suffered wanton destruction.

South Asian countries need to evolve land-use policies aimed at ensuring the health of the ecosystems, promoting rural development as a means to stem rural-to-urban migration, protecting forest resources and undertaking reforestation; improving watershed management; undertaking integrated coastal and river-basin development, fostering local capacities and research and development and promoting soil conservation techniques.

Water Resources

Once a water-affluent region, South Asia is rapidly becoming water-poor due to phenomenal population growth in nearly all countries coupled with unplanned urbanisation. Other contributory factors are the unsustainable share – 90-95 per cent – of water consumed by agriculture, poor governance and management of water infrastructure, insufficient storage, and archaic as also wasteful irrigation methods. Except Bhutan and Nepal, per capita availability of water in South Asia is less than the world average. South Asia has 4.5 per cent of world's freshwater resources.

Afghanistan, India, and Pakistan face varying degrees of water scarcity. Groundwater depletion caused by growing irrigation needs is a serious concern in Pakistan, India, Bangladesh, Sri Lanka and Maldives. Cross-border water degradation – caused by unregulated release of sewage, industrial and agricultural run-off, fertilizers and pesticides, and arsenic – is growing at a menacing speed.

Sharing of water resources among user-sectors, regions and countries has internal and external dimensions. The upper/lower riparian syndrome operates within countries, especially Pakistan and India, and between countries dependant on shared trans-boundary rivers. South Asia is marked by numerous river basins shared by neighbours. The territories and populations of Afghanistan, Bangladesh, Bhutan, Nepal, and Pakistan are situated within international basins.

Pakistan and India, and India and Bangladesh have signed agreements in 1960 and 1996 respectively, on the sharing of the Indus and the Ganga river systems. However, the implementation of the agreements needs to be greatly improved by placing greater emphasis on joint integrated-management of the water resources through a basin-based approach.

The most serious adverse impact of climate change in South Asia is the likely reduction in the quantity of water caused by the recession of the HKH glaciers and by the disruption of monsoon winds. The vulnerability of the two main sources of water – the glaciers and the

monsoons – to climate change necessitates actions at the national level and cooperation at the regional level, especially among Pakistan, India, Bangladesh, Nepal and China.

South Asian countries need to jointly evolve and implement integrated water-resource-management policies at domestic level and establish cooperative arrangements with neighbours based on basin-wide joint management of shared river water and aquifers as well as cross-border river pollution. The location of sources of major South Asian rivers in Tibet and the reports of Chinese hydro-power generation projects make it necessary to engage China in water-related dialogue.

Pollution

Almost all South Asian countries face rapidly growing health hazards associated with indoor and outdoor air and water pollution caused by extensive use of biomass for energy, poor sanitation and waste management, exposure to lead and other chemical pollutants. South Asian nations need to adopt effective pollution control measures in urban and rural areas and negotiate and implement trans-boundary air and water pollution abatement measures at regional level such as the Male Declaration on Trans-boundary Air Pollution.

Bio-Diversity Loss

South Asia hosts an enormous wealth of biodiversity, with the HKH belt alone being home to some 25,000 plant and animal species. Diverse species abound in Sri Lanka, the Sunderbans, Eastern Himalayan regions in Nepal, Northeast India and Bhutan and the Western and Eastern Ghats. However, this globally significant wealth faces growing threats posed by human population growth and urbanisation leading to habitat loss for other species, deforestation, mining, poaching, invasive species, and pollution. Ten per cent of India's flora and fauna – some not found anywhere else – are on lists of threatened species.

South Asian countries need to frame comprehensive national biodiversity plans drawing upon the knowledge generated by global networks such as the CGIAR centres and policy guidelines evolved under the auspices of the UN Biological Diversity Convention. They also need to effectively develop and implement the South Asia Regional Seas Programme and the Biodiversity Corridors Initiative for Migratory Birds. Further, the scores of protected areas must be managed more effectively. A South Asia Biodiversity Conservation agreement would spur, among other things, a more detailed and credible assessment and delineation of protected areas, including trans-boundary protected zones, and would also facilitate cooperation and collaboration.

Degradation of River and Marine Resources

Population growth, especially in coastal regions, unsustainable and unregulated exploitation, and pollution from land-based resources threaten the rich fisheries and other marine resources of South Asia. The South Asia Regional Seas Programme can play a vital role in promoting cooperation for protecting the marine resources.

Energy

South Asia currently uses only 5.9 per cent of the global energy resources, excluding extensive use of non-commercial energy such as wood, animal waste and other biomass which meet nearly half of the energy needs in the region. However, rapid economic growth, especially in India, and growing population have increased demand for commercial energy.

At present, South Asia accounts for 6-7 per cent of the global green house gas (GHG) emissions but these are destined to go up. Already, increased international pressure is being brought to bear on India and other South Asian countries for agreeing to mandatory cuts in their GHG emissions and preventing an increase in the emissions. This means that South Asian countries would have to step up efforts for promoting energy efficiency, on the one hand, and developing clean, renewable resources of energy, on the other. A clean energy revolution is urgently needed and will necessitate cooperation at bilateral and regional levels.

The intensifying debate on energy within South Asia has identified a number of initiatives such as a SAARC Energy Charter on the model of the European Energy charter, the development of a South Asia Energy Market as also a regional electricity grid and trans-boundary gas pipelines, a regional centre for promoting energy efficiency and capacity building with regard to renewable energy sources.

Climate Change

As pointed out in the Fourth Assessment Report of the IPCC (Intergovernmental Panel on Climate Change) in 2007, South Asia is likely to be one of the regions that will be a major casualty of all the negative impacts of climate change such as reduced availability of water due to reduced snow-melt in the HKH glaciers; erratic pattern of the monsoon rains; reduced agricultural yields due to higher temperatures that lead to an increased thirst of crops and plants; an increase in the number, frequency, duration, and intensity of extreme events such as droughts and floods, tsunamis and hurricanes, windstorms; sea level rise that leads to intrusion and salinity of soil and underground aquifers in the coastal regions; an increase in tropical diseases due to higher temperatures. The reduction in the availability of water will

threaten the food-, drinking water- and energy-security of the region. The negative impacts of climate change have already been evidenced by recurring floods in Pakistan and prolonged droughts in India. Crop yields have also registered decline.

South Asian countries have been actively participating in the annual meetings of the UNFCCC and other global fora for promoting cooperation to address the multifaceted challenges of climate change. They have led the efforts to set up the Green Climate Fund to help poor countries adapt to the inevitable effects of climate change and also adapt to mechanisms for transfer and deployment of climate-friendly technologies and capacity-development. SAARC countries have prepared climate change policies, strategies and plans of action and integrated climate change imperatives in their socio-economic planning and decision-making. They have also established institutions to address climate change-related issues.

There is urgent need of, and enormous potential for, bilateral and regional cooperation on climate change, ranging from joint monitoring of the HKH glaciers, the monsoons, river flows, extreme-weather forecasting, disaster management, adaptation to climate change impact on agriculture and livestock, water management, sea level rise, and the health sector.

The Imperative of Regional Cooperation

Since the 1972 UN Conference on Human Security held in Stockholm and the UN Conference on Environment and Development, held in Rio in 1992, and the signing of dozens of global and regional conventions and protocols on environment in which South Asian countries actively participated, there has been a remarkable growth in environment protection activities in South Asian countries. These include:

- Establishment of full-fledged Ministries of Environment
- Preparation of environmental policies and strategies and action plans on environmental topics such as climate change, the ozone layer, desertification, air pollution, hazardous waste, chemical safety, land-based and marine protection areas, forest management, water resource management, energy conservation and efficiency, development of renewable sources of energy etc.
- Promulgation of environmental laws and regulations at various levels of government
- Emergence of environmental NGOs and civil society organisations
- Increased media coverage of environmental issues
- Preparation of state of environment reports/studies by governments, IGOs, NGOs and scientific communities
- Academic courses on environment in colleges and universities

Public discourse on regional cooperation under the auspices of SAARC and regional offices of UN and other multilateral agencies – which was hitherto limited to political, economic and cultural spheres – has been broadened to include calls for increased cooperation and collaboration for addressing environmental challenges. There is growing number of networks of NGOs and civil society organisations promoting cooperation at official and non-official levels.

It is now increasingly recognised that the objectives of poverty eradication and sustainable development and food-, water- and energy-security in South Asia cannot be achieved in the absence of cooperation at the regional level.

Recognition of the need for regional cooperation on environmental issues has led to the establishment of the South Asia Environmental Cooperation Programme in 1982; and greater attention is being paid to environmental concerns by SAARC at ministerial and summit levels.

Initiatives to Promote Cooperation on Environment at Regional Level

Three inter-governmental organisations are notable in the context of regional cooperation on environmental issues in South Asia. These are (i) the South Asian Association for Regional Cooperation (SAARC) (ii) the South Asia Cooperative Environment Programme (SACEP); and (iii) the South Asia Regional Seas Programme.

SAARC

Envisaged as “a political organisation” and established in 1985, SAARC has during the past two and a half decades paid increasing attention to environmental concerns and challenges. Since 1987, references to environmental issues have figured in the speeches made and declarations issued by SAARC Summits. Since the late 1980s, Ministers of Environment have held over a dozen meetings, including a meeting in 1997 which adopted the first SAARC Environment Action Plan, the meeting in 2005 in the wake of the Asian Tsunami which led to the consideration of a regional disaster cooperation framework, and the meeting in 2008 at which a Declaration and an Action Plan on Climate Change were adopted ahead of the 2009 climate change meeting in Copenhagen.

The 16th SAARC Summit hosted by Bhutan in April 2010 had, as its main theme, the topic of Climate Change and issued a statement on climate change. The broad-based SAARC Convention on Environment was signed at the Summit and has since been ratified by most member-states. An expert-level Technical Committee on Environment was set up in 1992 and

an inter-governmental Expert Group on climate change was set up at the 16th Summit in Thimphu.

In pursuance of the 1997 and 2008 plans of action, a number of SAARC centres have been established, including the SAARC Forestry Centre in Thimphu, the SAARC Disaster Management Centre in New Delhi, the SAARC Meteorological Research Centre in Dhaka, and the SAARC Coastal Management Centre in Maldives.

The Dhaka Climate Change Action Plan had identified seven thematic areas for consultation and cooperation. These include mitigation; adaptation; technology transfer; finance and investment; education- and awareness- enhancement, management of climate change impacts and risks; and capacity building for intergovernmental negotiations.

SACEP

The South Asia Cooperative Environment Programme (SACEP) was set up by the Ministers of Environment of the SAARC member-countries. Its secretariat is located in Colombo (Sri Lanka) which, in addition to implementing the SACEP Work Plan, also administers the South Asia Regional Seas Programme and several other regional programmes. SACEP's objectives include promotion of mutually beneficial cooperation in priority areas of environment, promotion of exchange of knowledge and expertise, and formulation, financing and implementation of environmental projects.

South Asia Regional Seas Programme

The South Asia Regional Seas Programme was established, with support from UNEP, in 1982. This initiative focuses on integrated coastal zone management, oil-spill contingency planning, human resource development, and pollution of marine resources caused by land-based activities. A South Asia Regional Seas Action Plan was finalised and adopted in 1995 which will, hopefully, lead to the negotiation of a Regional Seas Convention modelled on the Conventions adopted in other regions. The Action Plan contains proposals on crucial issues such as integrated zone management, development and implementation of national and regional oil-spill contingency plans, and coral reef protection and management.

Recommendations

Despite the significant growth of knowledge and awareness of environmental problems and efforts by the South Asian countries to respond to them, the ground situation does not show any significant improvement. As the South Asia Environment Outlook 2009 (SAEO)

produced by UNEP and SAARC has reported, SAARC countries face multiple environmental challenges such as high rates of population growth, urbanisation, rampant poverty which is both a cause and a consequence of environmental degradation, growing indoor and outdoor air pollution, reduction in per capita availability of and deterioration in the quality of drinking water, soil degradation, increase in waterborne diseases, degradation of marine resources, increase in the frequency, duration and severity of natural and climate change-related disasters, trans-boundary air- and water-pollution, deforestation and desertification, health hazards caused by unsafe and hazardous chemicals and waste, etc. These challenges entail growing economic, financial and social costs.

SAARC countries other than India are unlikely to achieve the environmental goal and benchmarks prescribed by the Millennium Development Goals (MGDs).

The escalating degradation of the environment and the ecosystems has been driven mainly by population growth and policy- and institutional-failures. The situation is likely to get worse as the full impacts of climate change become evident. Geographic/topographic/climatic factors, population explosion, critical dependence on agriculture and the sector's dependence on irrigation, and long coastline make the entire South Asian region, especially the low-lying areas in Bangladesh, Sri Lanka and Maldives particularly vulnerable to the adverse impacts of climate change. At stake is the vital imperative of food-, water- and energy-security, which has implications for the livelihoods of the majority of South Asian people.

Clearly, the efforts of South Asian countries at domestic, regional and global levels need to be significantly augmented and strengthened. This will require

- Renewed political commitment to the protection and development of the environment
- Environmental imperatives in general and responses to climate change challenges in particular need to be integrated into the overall processes of planning, financing and implementation. None of the South Asian countries has done this so far but significant progress has been made more recently.
- Ministries of Environment, environmental protection agencies, tribunals, laboratories, R&D institutions urgently need significant strengthening and adequate resources to fulfil their tasks.
- Monitoring and assessment of overall environmental trends and sector-specific assessments need to be carried out at state, city, town and even village levels. All stakeholders – especially the key economic and commercial sectors – must comply with mandatory reporting on the environmental footprint of their activities and take steps to mitigate the damage.
- Much greater attention needs to be paid to enhancing the authority and capacity of organisations and institutions established at regional level in pursuance of decisions of SAARC Summits. Additional institutions need to be set up, in order to better address the negative impacts of climate change. The relevant areas requiring attention are disaster management, integrated and joint management of shared river basins, energy

conservation and efficiency, development of clean and renewable sources of energy, climate-related health hazards etc.

- Climate change should be on the agenda of all SAARC Summits which should review the progress achieved and agree on arrangements for better results.
- The status and profile of Ministers of Environment should be enhanced. Environment Ministers should meet prior to each SAARC Summit to review the state of environment and submit their findings to the Summit. They need to pay greater attention to SACEP and the other regional cooperation arrangements.
- Effective participation of all stakeholders, especially the private sector and the civil society, is the key to the success of efforts to address the threats posed by climate change and other environmental issues.

SAARC may consider negotiating a comprehensive cooperation agreement with the UN and the European Union on the pattern of the ones signed by ASEAN with a view to maximising the benefits of cooperation with multilateral institutions in line with their cooperation processes.

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