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South Asia & Climate Change
A Development and Environmental Issue



Glacier melting in the Himalayas is projected to increase flooding and will affect water resources within the next 2-3 decades.

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South Asia and Climate Change

Climate change is no longer an issue for the distant future. Climate change is already taking place, and the South Asian countries, particularly the poorest people, are most at risk.

The impacts of higher temperatures, more variable precipitation, more extreme weather events, and sea level rise are felt in South Asia and will continue to intensify.

These changes are already having major impacts on the economic performance of South Asian countries and on the lives and livelihoods of millions of poor people.

The impacts result not only from gradual changes in temperature and sea level but also, in particular, from increased climate variability and extremes, including more intense floods, droughts, and storms.
(Source: *Managing Climate Risk: Integrating Adaptation into World Bank Group Operations*)

The Intergovernmental Panel on Climate Change fourth Assessment report provided specific information for South Asia region concerning the nature of future impacts.

Some of the future impacts include,

- Glacier melting in the Himalayas is projected to increase flooding and will affect water resources within the next two to three decades.
- Climate change will compound the pressures on natural resources and the environment due to rapid urbanization, industrialization, and economic development.
- Crop yields could decrease up to 30% in South Asia by the mid-21st century.
- Mortality due to diarrhea primarily associated with floods and droughts will rise in South Asia.
- Sea-level rise will exacerbate inundation, storm surge, erosion and other coastal hazards.

Impact on South Asia's poor

The consequences of such environmental changes include:

- decreased water availability and water quality in many arid and semiarid regions
- an increased risk of floods and droughts in many regions
- reduction in water regulation in mountain habitats
- decreases in reliability of hydropower and biomass production
- increased incidence of waterborne diseases such as malaria, dengue, and cholera
- increased damages and deaths caused by extreme weather events
- decreased agricultural productivity
- adverse impacts on fisheries
- adverse effects on many ecological systems

As a result of these changes, climate change could hamper the achievement of many of the Millennium Development Goals (MDGs), including those on poverty eradication, child mortality, malaria, and other diseases, and environmental sustainability.

Much of this damage would come in the form of severe economic shocks. In addition, the impacts of climate change will exacerbate existing social and environmental problems and lead to migration within and across national borders.

In sum, climate change is clearly not just an environmental issue but one with severe socioeconomic implications in South Asia.

(Source: *Managing Climate Risk: Integrating Adaptation into World Bank Group Operations*)

Climate Change in South Asia – A Conversation with Sir Nicholas Stern

From the Himalayas, which feed water to a billion people, to the coastal areas of Bangladesh, South Asian countries must prepare for the effects of global warming, even as they work to combat the human causes of climate change.

Listen to the conversation mp3 audio



"You have to give examples from around the world for people to really understand what's going on. In India and China, I think people understand the rising water stress, and how vulnerable they are to melting glaciers and snows from the Himalayas," Stern said. He used the analogy of the Himalayas as a sponge, moderating the impact of precipitation as seasons change.

"Precipitation comes, and it's held there. That's how you get water in the rivers. That effect will not be there if the glaciers and snow are not there. Which means you'll get torrents during the wet season and dry rivers in the dry season. So you'll get a combination of flood and drought," Stern said.

"We also don't know what effect that will have on the monsoon, and it could have quite a strong effect. That kind of thing is being studied now," he added. The Indian Institute of Tropical Meteorology supplies climate change data to SAARC nations, and is engaged in its largest recruitment drive in a decade.

Agriculture represents a fourth of India's national income, and that sector could be seriously disrupted by changes to the monsoon. Mitigation strategies are needed to deal with the risks.

"We have to adapt how we handle water extraction, and irrigation. Water management is involved in all of this. Work has to be done on what crops would be resilient," Stern said.

Urban areas throughout the region are also at risk, as water supplies could be disrupted over time. Infrastructure must be upgraded for sanitation and drinking water, as well as for adequate storm drainage in areas prone to flooding.

Climate Change and the World Bank

Climate change thus directly affects the World Bank Group's mission of eradicating poverty. The World Bank has already started to address these concerns by integrating comprehensive climate risk management into development planning, programs, and projects.

The World Bank has identified the following key development areas directly affected by climate change:

Human health, Water supply and sanitation, Energy, Transport, Industry, mining and construction, Trade and tourism, Agriculture, forestry, and fisheries, Environmental protection, and Disaster management

(Source: *Managing Climate Risk: Integrating Adaptation into World Bank Group Operations*)

Bangladesh

Health impact of air and water pollution in Bangladesh
This report analyzes the health impact of air and water pollution in Bangladesh using the most recently available data. [Read More »]

Management of Water Quality in Dhaka
Economic cost due to poor management of water resources in Dhaka is estimated at US$ 500 million annually. [Read More »]

Expanding Renewable Energy in Bangladesh
The Government of Bangladesh has established a goal of providing electrical power to all its citizens. Renewable energy is a key component of the initiative. [Read More »]

India

Country Water Resources Assistance Strategy
This report examines the evolution of the management of India's waters, it describes the achievements of the past, and the looming set of challenges.
[Read More »]

Unlocking Opportunities for Forest-Dependent People in India
A new World Bank report, "Unlocking Opportunities for Forest-Dependent People in India" by Grant Milne, suggests that if national and state level reforms are introduced and forest productivity improved, rural poverty can be reduced significantly and government revenues increased. [Read More »]

For a Breath of Fresh Air: Ten Years of Progress and Challenges in urban air quality management in India
The report presents a retrospective analysis of urban air pollution data with a focus on particulate air pollution from 1993 to 2002 in Delhi, Kolkata, Mumbai, Hyderabad and Chennai. [Read More »]

Better Crops, Higher Incomes for Farmers in Karnataka Watershed
Average annual household income for the one million people who lived in the area was approximately US$222. [Read More on IDA at Work »]

Pakistan

Pakistan: Country Water Resources Assistance Strategy
An important element of Bank support will be training a new generation of multi-disciplinary water resources specialists and support for multi-disciplinary centers of excellence for water resources natural and social sciences. [Read More »]

Pakistan Water Economy
Pakistan is one of the world's most arid countries. The Indus River is the country's only major river system. [Read More »]

Household use of commercial energy in Pakistan
Between 1994 and 2001, prices of electricity, natural gas, kerosene, and liquefied petroleum gas (LPG) rose more rapidly than the consumer price index (CPI), potentially offering insights into how households might react to, and manage, sharply rising energy prices. [Read More »]

Other Reports of Interest

An Investment Framework for Clean Energy and Development
Powering economic growth using clean and renewable forms of energy is one of the most challenging topics in development today. How will we meet the burgeoning energy needs of the developing world without causing irreversible damage to the earth's climate or exposing economies to energy shortages? [Read More »]

Clean Energy for Development Investment Framework: The World Bank Group Action Plan
This Action Plan provides an update of work undertaken to date as well as actions planned by the World Bank Group in support of the Clean Energy for Development Investment Framework. [Read More »]

Building Country Capacity to Combat Climate Change
Providing people, institutions, and developing countries with the tools and training to make choices about the environment is a critical element of Global Environment Facility (GEF) climate change projects. [Read More »]

Manage Climate Risk: Integrating adaptation into World Bank Group Operations
Climate change is already taking place, and further changes are inevitable. The way to address these concerns is not to separate climate change adaptation from other priorities but to integrate comprehensive climate risk management into development planning, programs, and projects. [Read More »]

Will Markets direct investments under Kyoto Protocol?
Under the Kyoto Protocol, countries can meet treaty obligations by investing in projects that reduce or sequester greenhouse gases elsewhere. [Read More »]

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