

Atmosphere Initiative

ICIMOD
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THREE DECADES
FOR MOUNTAINS AND PEOPLE



Atmospheric changes are increasingly affecting the wellbeing of people and ecosystems in the Hindu Kush Himalayan region. The past decades have seen increasing emissions of air pollutants within and upwind of the region from urban, industrial, and rural sources. The atmosphere ignores international boundaries, requiring cooperation across borders to address atmospheric issues. There are still large uncertainties in our scientific understanding of the changes taking place in the region's atmosphere, their underlying causes, and the potential effectiveness of various mitigating activities.

ICIMOD's Atmosphere Initiative was established as part of the Regional Programme on Cryosphere and Atmosphere to improve our understanding and promote regional cooperation to address issues related to the atmosphere of the HKH region.

Concerns

- Deteriorating air quality, increasing haze, and decreasing visibility
- Changes in sunlight reaching the Earth's surface
- Aerosol effects on cloud microphysics and rain drops
- Changes in the strength and timing of the summer monsoon
- Greenhouse gas-induced warming
- Changes in the frequency of extreme precipitation events
- Increasing stratospheric pollution above the Tibetan Plateau
- Deposition of black carbon onto snow and ice surfaces and increasing melting of the Himalayan cryosphere
- Health effects of indoor air pollution, especially on women and children

Objectives

- Improve scientific knowledge about emissions sources, atmospheric processes, atmospheric change and impacts in the Hindu Kush Himalayan region through field campaigns, long-term monitoring, remote sensing, and chemistry-transport modelling.
- Identify, pilot, and disseminate effective, gender responsive, and socioculturally acceptable



mitigation options to reduce the emission of pollutants into the atmosphere and their impacts.

- Build capacity in the region for atmospheric science research, monitoring of atmospheric change, and analysis of atmospheric processes.
- Establish an atmosphere knowledge hub at ICIMOD to foster communication and collaboration across borders and to distribute data and knowledge.
- Contribute to national, regional, and global policy on atmospheric issues.



Major Activities in 2013

- Hosting SusKat-ABC, a field campaign of the project Sustainable Atmosphere for the Kathmandu Valley (SusKat) in close partnership with the Institute for Advanced Sustainability Studies (IASS) in Potsdam, Germany
- Writing four baseline assessment reports to identify unknowns and research priorities in the region on emissions, atmospheric processes and change, impacts, and mitigation options
- Participation in the Climate and Clean Air Coalition (CCAC), including hosting a Brick Kiln Initiative meeting
- Cohosting the international workshop on Atmospheric Composition and the Asian Summer Monsoon and hosting ICIMOD's First Annual Regional Atmospheric Science Workshop
- Establishment of one long-term atmospheric observatory each in Bhutan and in Nepal
- Cohosting Nepal's Clean Cookstoves Marketplace 2013
- Carrying out a study on the effects of visibility degradation on tourism in Pokhara and Nagarkot, Nepal and setting up a cook-stove dissemination experiment

For further information contact

Arnico K Panday: apanday@icimod.org

Photos: Arnico K Panday

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International Centre for Integrated Mountain Development

GPO Box 3226, Kathmandu, Nepal

Tel +977-1-5003222 **email** info@icimod.org **web** www.icimod.org

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