

ICIMOD's Atmosphere Initiative was established in January 2013, as part of ICIMOD's Regional Programme 4, Cryosphere and Atmosphere. The initiative aims to bring about effective measures and policies for reducing air pollution and its impacts within the HKH region by improving knowledge and enhancing the capacity of partners in regional member countries. The Initiative carries out work in seven areas:

## A. Improving understanding of **emissions** of air pollutants within and upwind of the HKH region

- Socioeconomic drivers of the activities that lead to the emissions.
- Spatial and temporal distribution of the emitting activities.
- Chemical composition of what is emitted by different sources.



## B. Improving understanding of **atmosphere processes and change**

Monitoring atmospheric composition and meteorology, and understanding the physical and chemical processes of pollutant transport, transformations and removal through:

- Observatories and air quality measurement stations.
- Coordinated multi-country field campaigns.
- Computer modeling and satellite data analysis.



Observatory sites in Nepal

### Operational Observatories



Chitwan, Nepal

Ratnapark, Nepal



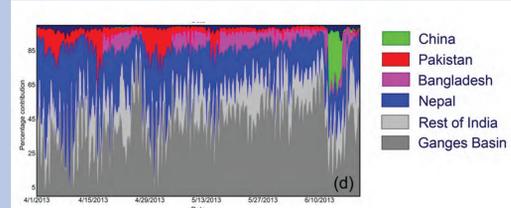
Pulchowk, Nepal

Dhulikhel, Nepal

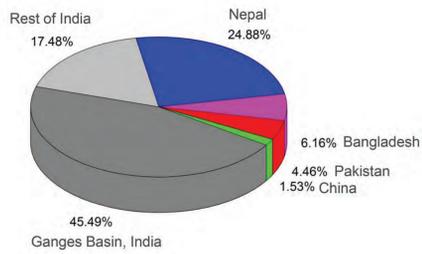


Lumbini, Nepal

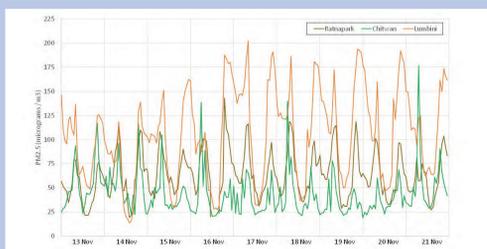
Langtang, Nepal



Lumbini, Nepal



Air quality models are used to help identify pollution sources



Observed PM2.5 at three stations in November 2016



Winter fog over Northern South Asia from space

## C. Improving understanding of **impacts** of atmospheric change



Cryosphere

Visibility and Tourism



Health and Livelihoods

Agriculture and Ecosystems

## D. Identifying, testing, piloting, and disseminating **mitigation** technologies and other solutions

... to reduce emissions of pollutants that have negative effects on health and climate, taking into account socioeconomic, gender, poverty, sustainability and political considerations.



Piloting 'happy seeder' tractor attachment to reduce agricultural burning

Designing, testing and piloting cleaner biofuel cook stoves



Reconstruction of Nepal's brick kilns after the 2015 earthquake using new design that improves efficiency and reduces emissions

## E. Building **capacity**



## F. **Outreach** and networks

Disseminating knowledge to the broad public through websites, articles, films and other outreach activities, while building a network of scientist and practitioners across the region who share data and knowledge, and collaborate across borders.



Comedy film

Newspaper articles and journal papers

Regional scientists' workshops

## G. Contributing to policymaking at local, national and global levels

- Contributing to national documents.
- Interacting with and bringing together policymakers.
- Playing a leadership role in the Climate & Clean Air Coalition.
- Speaking out at global fora.

