





## Our Earth

### Climate

What are the impacts?

Rising temperatures

Climate change global hot spots

▪ About IPCC

# Climate change impacts in India

Climate change impacts in India - what the IPCC 4th Assessment Report has found:

- Frequency of hot days and multiple-day heat waves have increased in past century; **Increase in deaths due to heat stress in recent years** [10.2.3].
- The entire Himalayan **Hindu Kush ice mass has decreased in the last two decades** and the ratio of melt accelerates. Hence, water supply in areas fed by HKH glacier melt, on which hundreds of millions of people in China and India depend, will be negatively affected [3.4]
- **Serious and recurrent floods in Northeast states of India during 2002, 2003 and 2004**; A record 944 mm of rainfall in Mumbai on 26-27 July 2005 led to loss of over 1000 lives with loss of more than US\$250 millions; Floods in Surat, Barmer and in Srinagar during summer monsoon season of 2006 [Table 10.3]
- **Sea-level rise leads to intrusion of saline water into the fresh groundwater** in coastal aquifers and thus adversely affects groundwater resources. For two small and flat coral islands at the coast of India, the thickness of freshwater lens was computed to decrease from 25 m to 10 m and from 36 m to 28 m, respectively, for a sea level rise of only 0.1 m [3.4].
- Ganges-Brahmaputra delta (also Bangladesh): **More than 1 million people will be directly affected by 2050 from risk through coastal erosion and land loss**, primarily as a result of the decreased sediment delivery by the rivers, but also through the accentuated rates of sea-level rise [Box 6.3, T10.9, 10.6].
- Warmer climate, precipitation decline and droughts in most delta regions of India have

resulted in **drying up of wetlands and severe degradation of ecosystems** [10.2.4.4].

- **The gross per capita water availability in India will decline** from ~1820 m<sup>3</sup>/yr in 2001 to as low as ~1140m<sup>3</sup>/yr in 2050 [10.4.2.3].

## WWF work

### What WWF is doing on the ground in India to protect against climate change:

- WWF-India is leading a regional project with WWF-Nepal on impacts of freshwater ecosystems in the Himalayas including **assessment and monitoring of key glaciers and glacial lakes**.
- In addition, WWF-India is developing and implementing adaptation strategies in selected sites (ecosystems and vulnerable communities) of the Ganga river.
- WWF is determining how protected areas will be affected by climate change in the region, especially sea level rise. The goal is to determine those islands having tiger populations which are at risk due to rise in sea level



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## KEY CONTACTS

### THE SUNDARBANS

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The Sundarbans is the largest mangrove forest in the world and it extends across southern Bangladesh and India's West Bengal state. It lies in the vast delta formed by the confluence of the Ganges, Brahmaputra, and Meghna rivers.

The [WWF-India Climate Change Programme](#) is conducting an assessment of sea-level rise in the Sundarbans, concentrating on impacts on local livelihoods and the [habitat of the tiger](#).

## CLIMATE WITNESSES

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WWF runs the Climate Witness programme to collect people's local observations of climate change that are then verified by scientists.



**Jalaluddin Saha** was born and raised on Sagar Island, the largest and westernmost in the Sundarbans, India. Jalaluddin is a school teacher and also farms a small plot of land. Along with 100 others, he lost his home due to a rise in sea levels.



"Of course I am angry with the river", says **Tulsi Khara**. "It has taken everything. But how can I fight it? How can I beat the Ganges?" Tulsi Khara has lived all her 70 years in the largest delta in the world, where the Ganges and the Brahmaputra rivers meet and flow into the Bay of Bengal.

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