Report from Asia-Pacific Network for Global Change Research, (APN)

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Opportunities to utilise space-based observation in the Asia-Pacific region.

Courtesy: NASA 16DEC06

Who & What is the APN?

Structure

- Inter-governmental network
- 21 member States
- Asia-Pacific region

Purpose

- Foster global change research
- Increase developing country participation in global change research
- Strengthen links between scientists and policy-makers

APN programme to help build Scientific Capacity in Asia-Pacific Countries is called ‘CAPaBLE’.

1. Capability development and training of researchers from developing countries in the Asia-Pacific region;

2. Facilitating dialogue between policy makers and researchers in the Asia-Pacific region on issues of global change.

Why is capacity building needed in the Asia-Pacific region:

- Scarcity of scientists, science infrastructure;
- Lack of data and tools;
- Limited research experience;
- Lack of familiarity with methods and models;
- Capacity to construct credible scenarios;
- Difficulty in establishing collaboration among scientists from multiple disciplines.


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Need for continual training

Sectors identified as most vulnerable in Asia-Pacific region:

- Food and water;
- Biodiversity;
- Coastal ecosystems;
- Human health and settlements;
- Land degradation.

Tuvalu and capital Funafuti

We can observe from space but what are we going to do?

Priority action for capacity building:

- Improve access to existing data/data sets;
- Training on how to use monitoring facilities and equipment;
- Develop network of institutions to promote capacity building activities;
- Capacity building for access, transfer and analysis of models and their results.

Water Management

Chiang Mai

Thailand

October 2006

Dialogue on Water Governance

Need to develop:

- Observations
- Interpretation
- Knowledge systems
- Governance options
- Good management practice

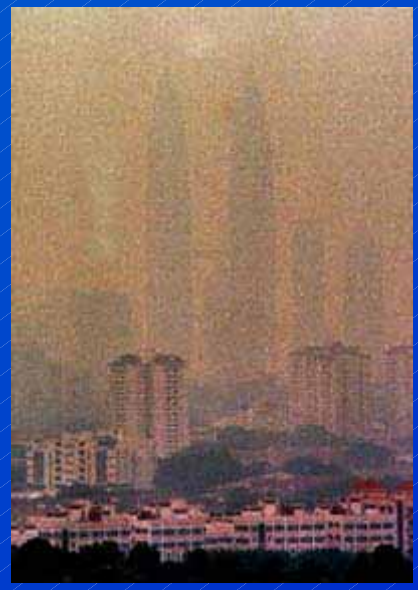
Three examples of opportunities:

Thailand
Oct. 2006

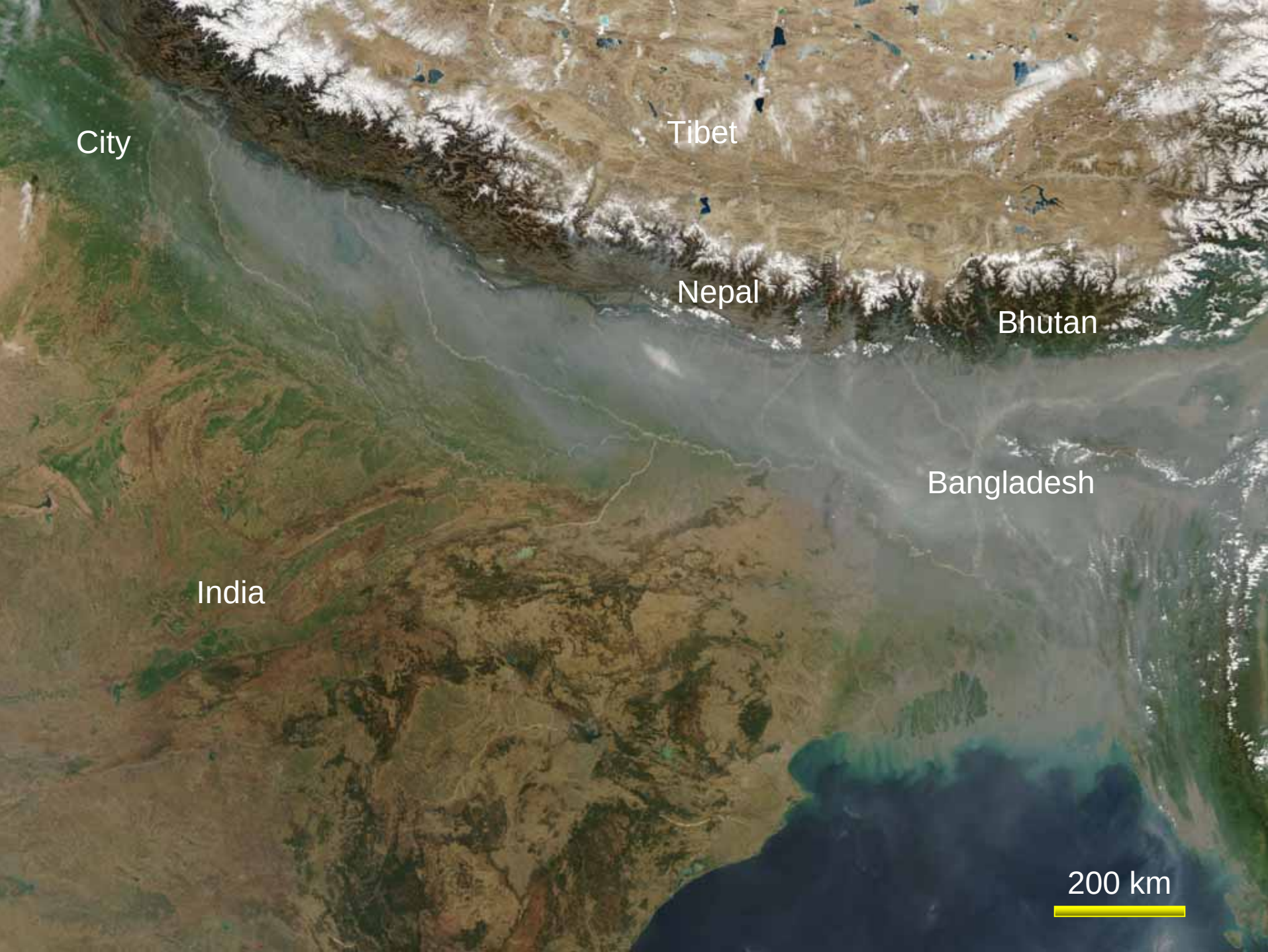
In this next image, taken Feb. 5, 2006, by NASA's Aqua satellite, a pale band of haze covers northern India, just south of the Himalayas. Haze also intrudes into the skies of southern Nepal and Bangladesh.

A study by UC researchers suggests that reducing air pollution could increase rice harvests in India.

(Image Credit: Jeff Schmaltz
Moderate Resolution Imaging Spectro-radiometer
Land Rapid Response Team,
NASA Goddard Space Flight Center)



Petronas Towers,
K.L., August 2006


City
Tibet
Nepal
Bhutan
Bangladesh
India
200 km

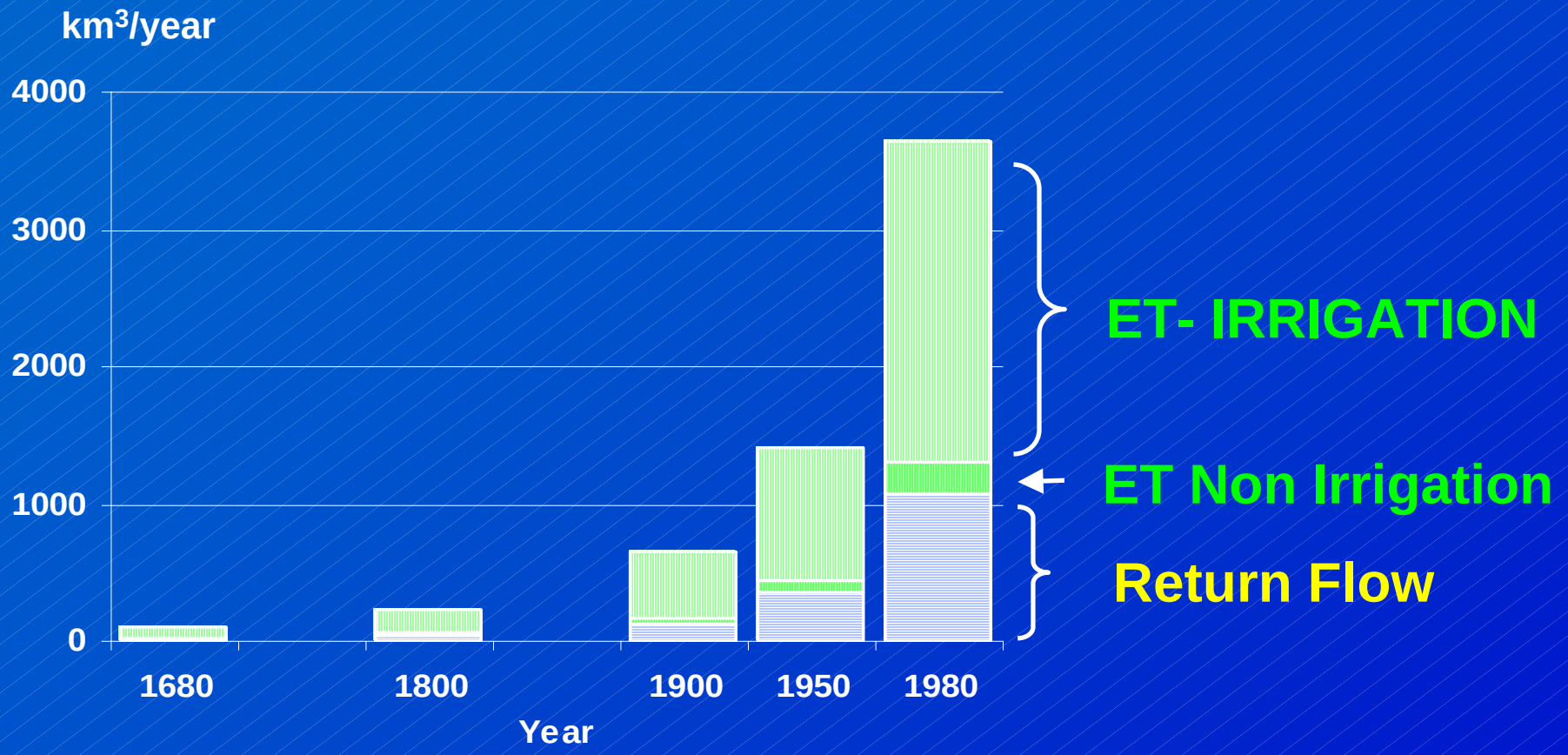
- Brown clouds exist throughout Asia's main rice-producing countries;
- Many Asian countries have experienced decreasing growth-rates in harvests;
- Indian crop would have been 20 to 25% higher in the 1990s with lower pollution and lower GHGs;
- Eliminating brown clouds would enhance rainfall, and decreasing greenhouse gas levels would benefit rice plants by lowering overnight temperatures;
- “Furthering our understanding of how air pollution affects agricultural output is very important to ensure food security in the world's most populous region”.

Ref: Auffhammer, Ramanathan and Vincent, US Academy of Sciences, 4 Dec. 2006

How much water do people use?

	Litres of Water	
Daily Drinking Water	2 – 5 litres use	Mainly non-consumptive use
Daily Household Use	20 – 500 litres use	
1kg Grain	500 to 3,000 litres evapotranspiration (ET)	Mainly consumptive use
Vegetarian Diet	2,000 litres ET / day	
Meat Diet	5,000 litres ET / day	

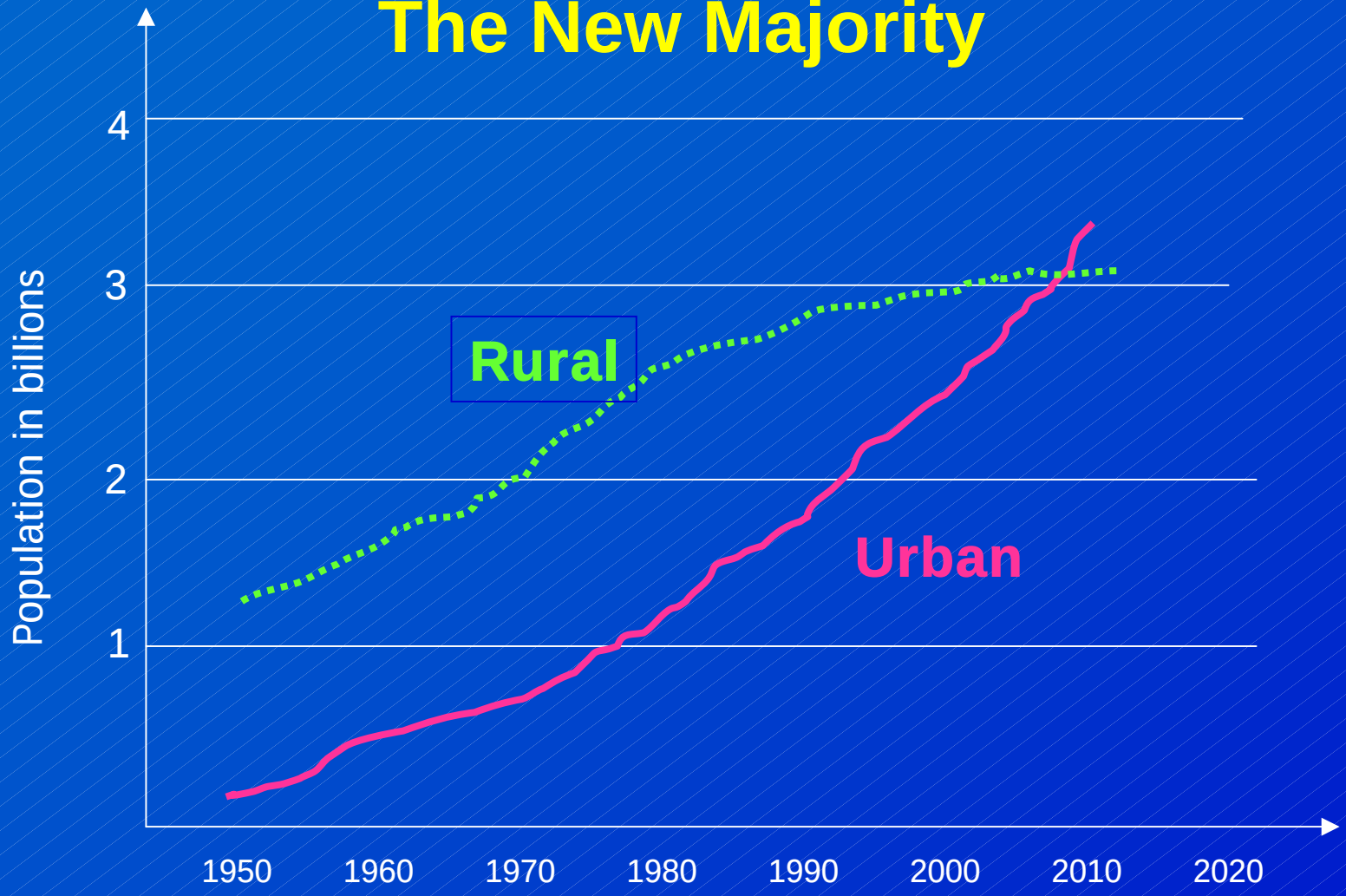
Water Withdrawals: 1680 - 1980



1900 – 2000: water withdrawals increased about 2.5 times *faster* than population increase.

(Lvovich & White, 1990)

The New Majority



Source: UN, World Urbanization Prospects, the 1999 Revision

Water for rural development or for expanding cities?


Partnerships:
• in observations;
• in capacity development;
• in management and governance;
• in sustainable development options.
APN welcomes the opportunity in GEOSS to help with this endeavour!
Where is
the road ahead?

www.apn-gcr.org