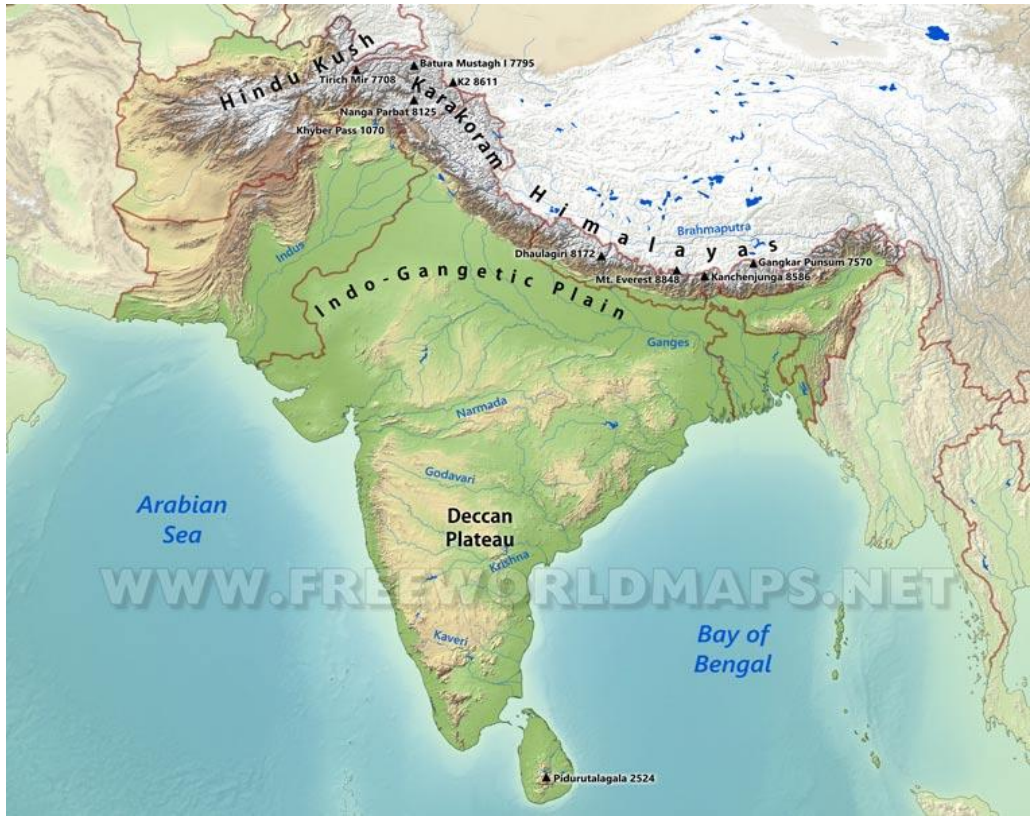
Climate Change hotspots in South Asia- Glacier Loss and Way Forward



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Himalayas and river basins

Pakistan (52%) and India (33%).

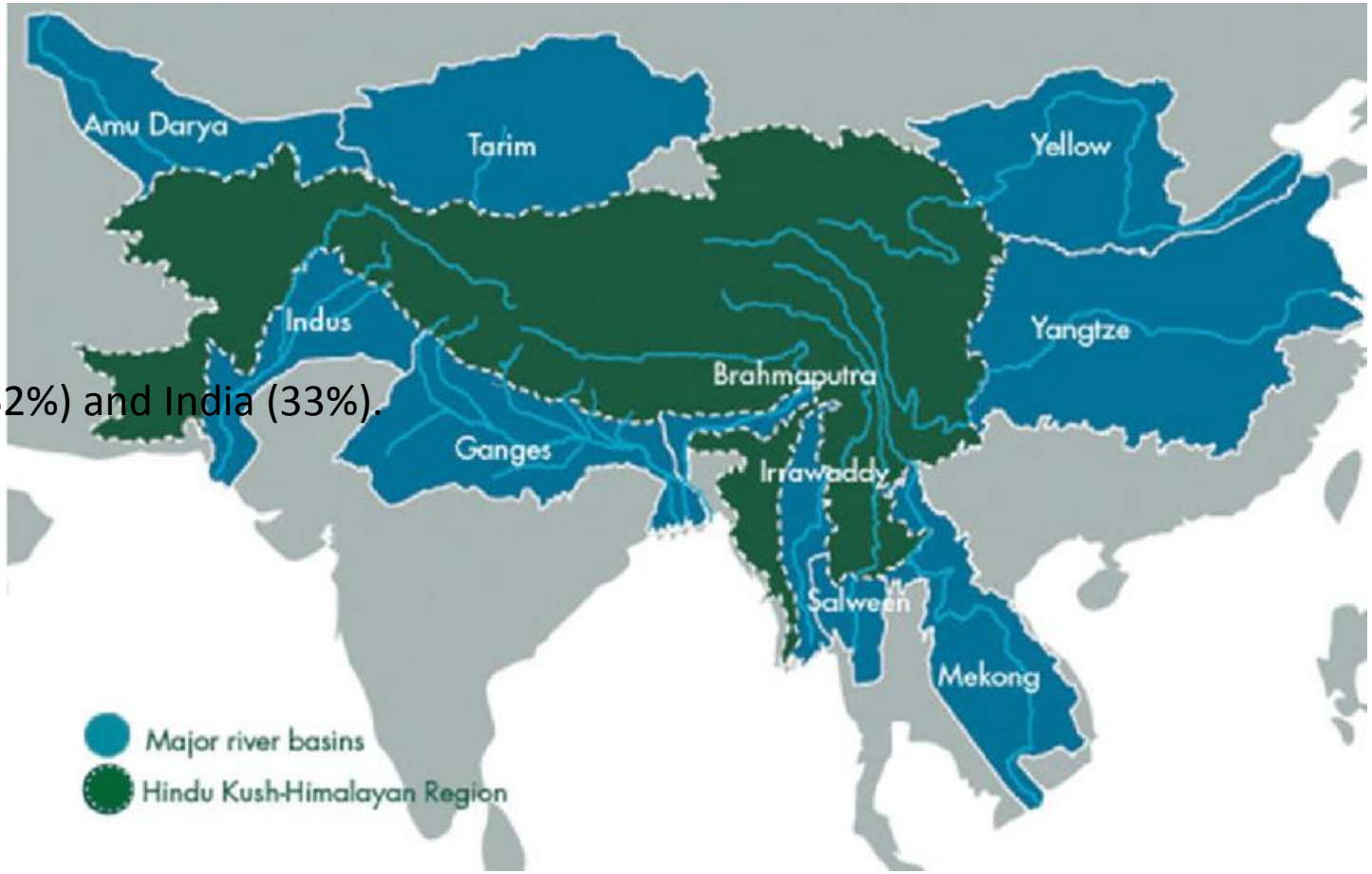


Photo courtesy- Santosh Nepal

Himalaya melting

Changri Nup Glacier, one of the hundreds studied by the researchers. Much of it is covered by rocky debris. The peak of Mt. Everest is in the background at left. PHOTOGRAPH COURTESY JOSH MAURER/LDEO

Changes in climate variability have led to a rapid retreat of mountain glacier systems.

The glaciated northern part, which includes the Himalayas, Karakoram, and Hindu Kush mountains have annual average temperatures at or below freezing, whereas much of the South Asian countries averages 25°C to 30°C (77°F to 86°F).

Temperature rise and challenges for human well being

- Even if average global temperatures stay below 1.5 degree C, the region will experience more than 2 degree C of warming; if emissions are not reduced, the rise will be 5 degree by 2100 C (Wester et al., 2019).
- Winter snowfall is already decreasing and there are, on average, four fewer cold nights and seven more warm nights per year than 40 years ago. Both the hot and cold extremes are challenging for human well-being, and climate change heightens these challenges.

Unpredictable weather

Pakistan is one of the most countries to the impacts of climate change [image by: Asian Development Bank]

"We return to our fields every day, hoping for a miracle but the days are just getting hotter. If the temperature continues to rise, we are not sure how we will survive," said Bibi Sajida.
https://www.thethirdpole.net/en/2019/04/29/slow-temperature-rise-deadlier-than-extreme-events-in-pakistan/

Rising temperature reduces productivity and income

- Rising average temperatures can affect living standards through diverse pathways, such as agricultural and labor productivity, health, migration, and other factors impacting economic growth and poverty reduction.
- Reduction in agricultural productivity will affect the living standard for the households who depend on agriculture.
- In the warmer areas, days of extreme heat are linked with low worker productivity. A changing climate can force people out of their traditional professional domains, resulting in individuals not earning as much money as they used to in normal situation.

Warmer climate will also provide new opportunities for growth- but?

- A warmer climate can increase productivity in historically colder regions, such as mountainous areas by providing the opportunity of new crops, vegetables and fruit varieties.
- A warmer climate has a number of consequences in the life of the people as it will increase the propagation of vector-borne and other infectious diseases, resulting in lost productivity and income.

GHG emission major driver for rise in temperature and climate change

- GHG emission- Black carbon is one of the worst form of Co2 that accelerate the glacier melting. Black carbon has multiple climate effects, changing clouds and monsoon circulation as well as accelerating ice melt.

Policy message

- Climate change is common threat to humanity.
- Breaking the present trend of rising temperature and melting of glaciers is an urgent action to stop the further worsening the ecology and economy
- The key messages here imply to implement the national and international commitments on reducing the impact of climate change through emission reduction.

Policy message…

- Development has a ecological limit, development interventions needs to be designed on the ecological carrying capacity.
- In the future, economic growth and structural changes will cause people to migrate to cities, leaving behind their agricultural and other climate-sensitive practices in rural areas.
- Upstream-downstream conflict, extractions of water within and between societies will be the risk of unrest as scarcity increases due to climate change.

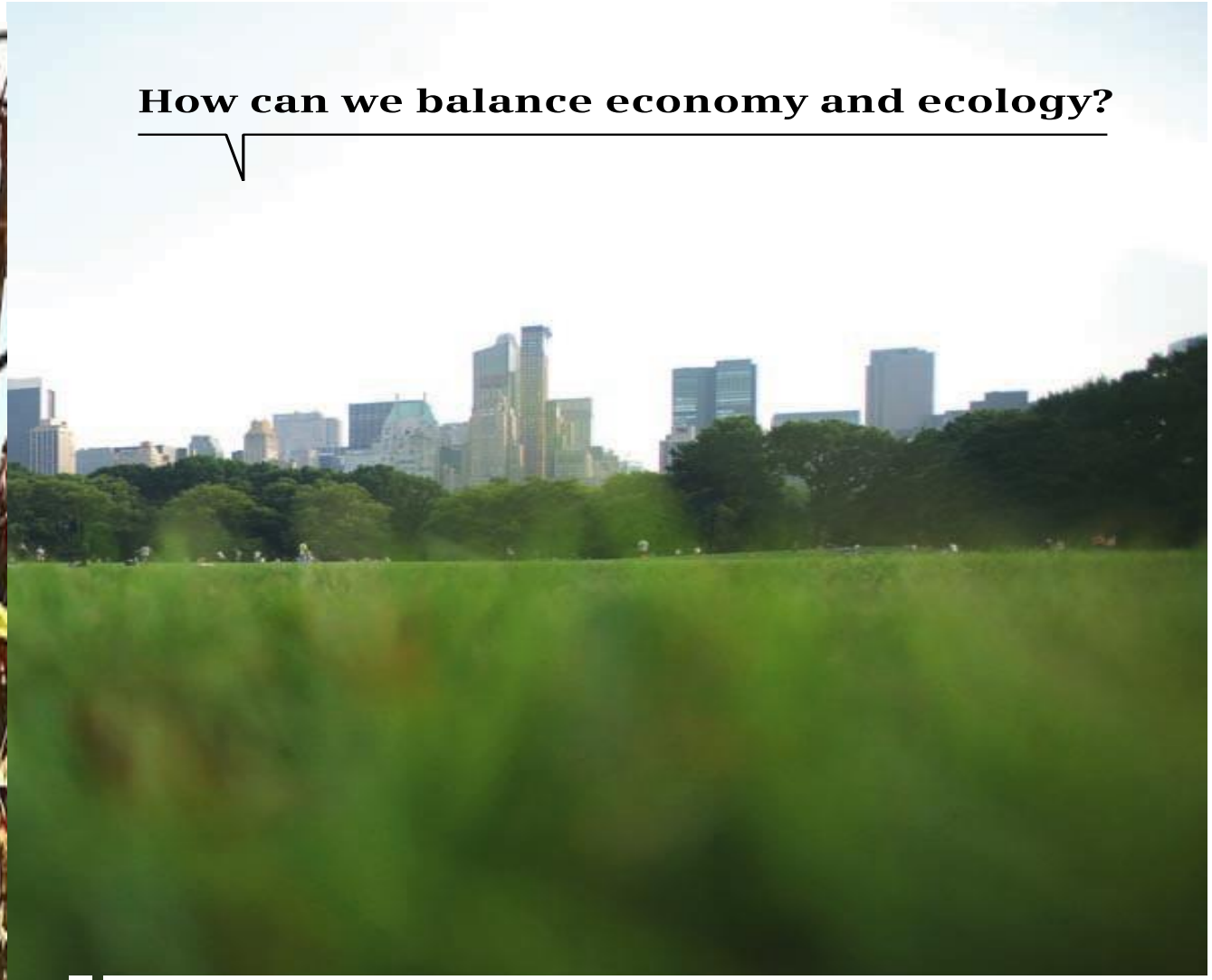
Policy message..

- The resilience strategies and actions should be inclusive, to avoid inequality in growth and opportunity. The projected emergence of many moderate and severe hotspots under the carbon-intensive scenario shows the need for resilience policies to target impoverished populations and highly vulnerable regions.

Policy message….

- The present trend of the climate change demands for changing the paradigm of current development. Evidences have proved that the crisis of climate is the by-product of the current development trend- the growth led economic development.
- It demands on the changes in lifestyle-production and consumption (economy), wise use of natural resources (ecology) and use of technology (more high tech we have, more climate change we observe).
- The starting point to halt the climate change is to seriously take actions to reduce GHG emissions and work toward meeting the targets established under the Paris Agreement and Development Agenda 2030 (SDGs).

The Paradox !



Statement of Direction: Products and solutions for increased competitiveness and environment protection.

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