

Food security in high mountains of Central Asia: a broader perspective

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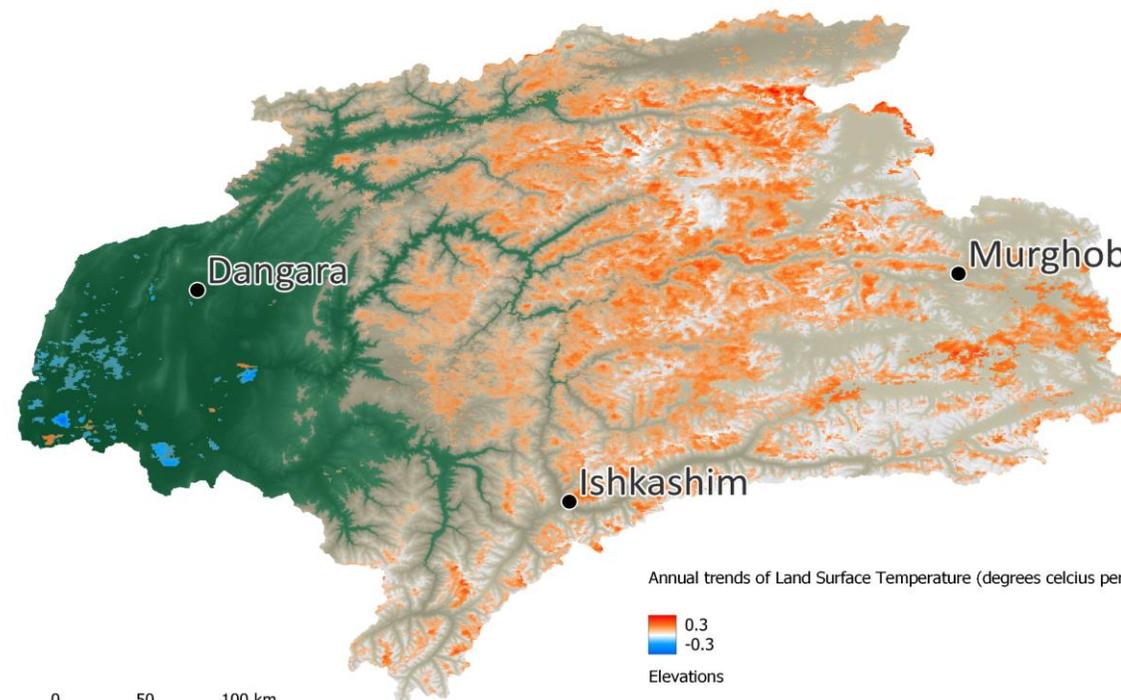
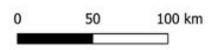
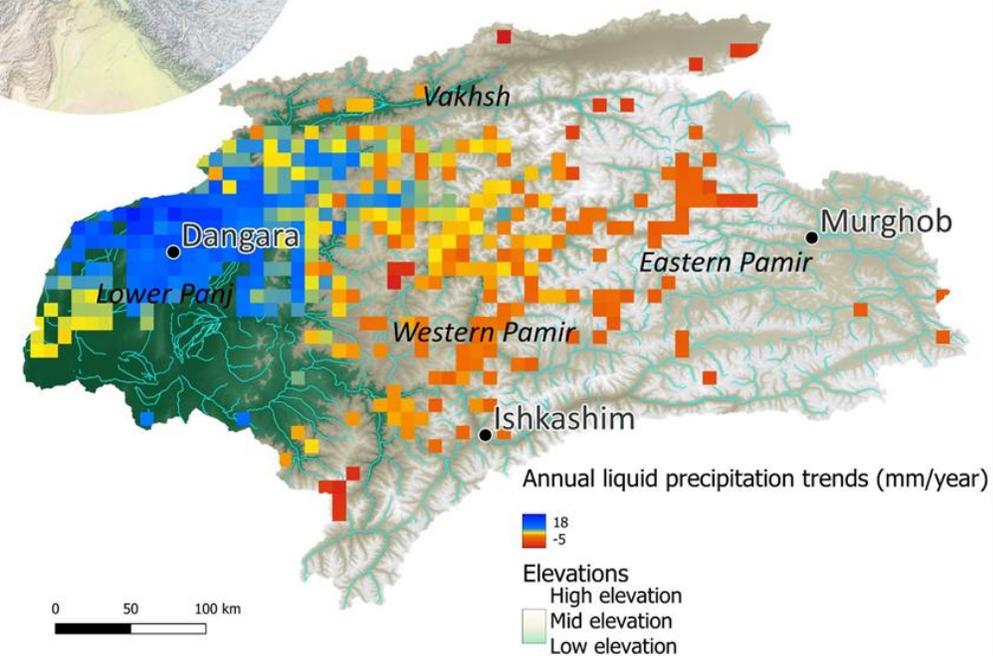
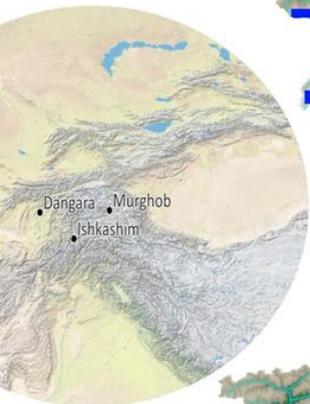
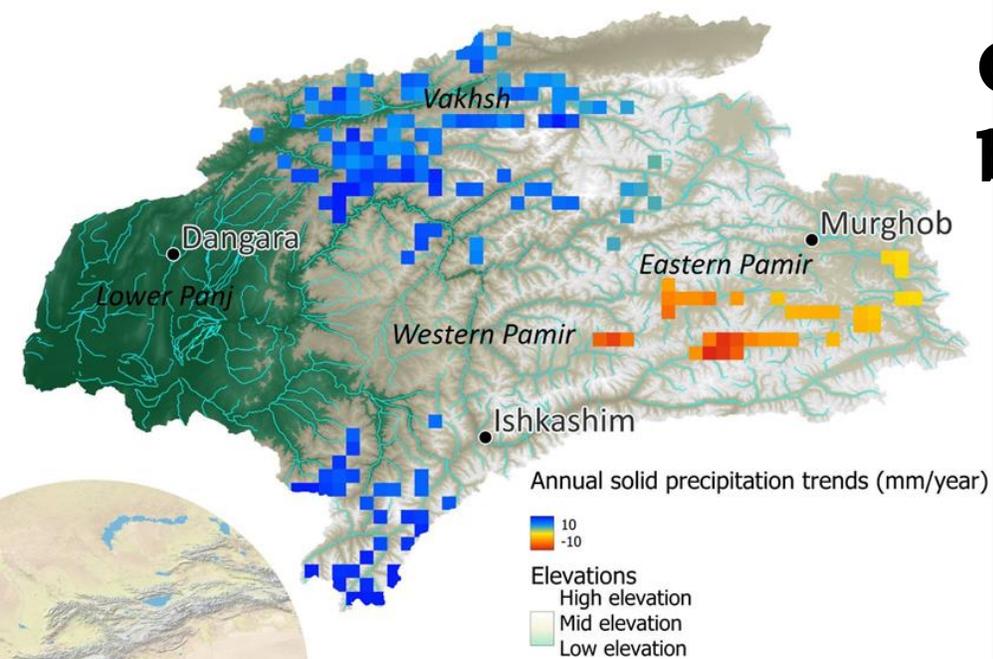
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Mountainous terrain comprises 27% of the Earth's land surface & supports 15% of its people, many of which are impoverished and suffer from food insecurity



Climate trends in the Vakhsh and Panj basins

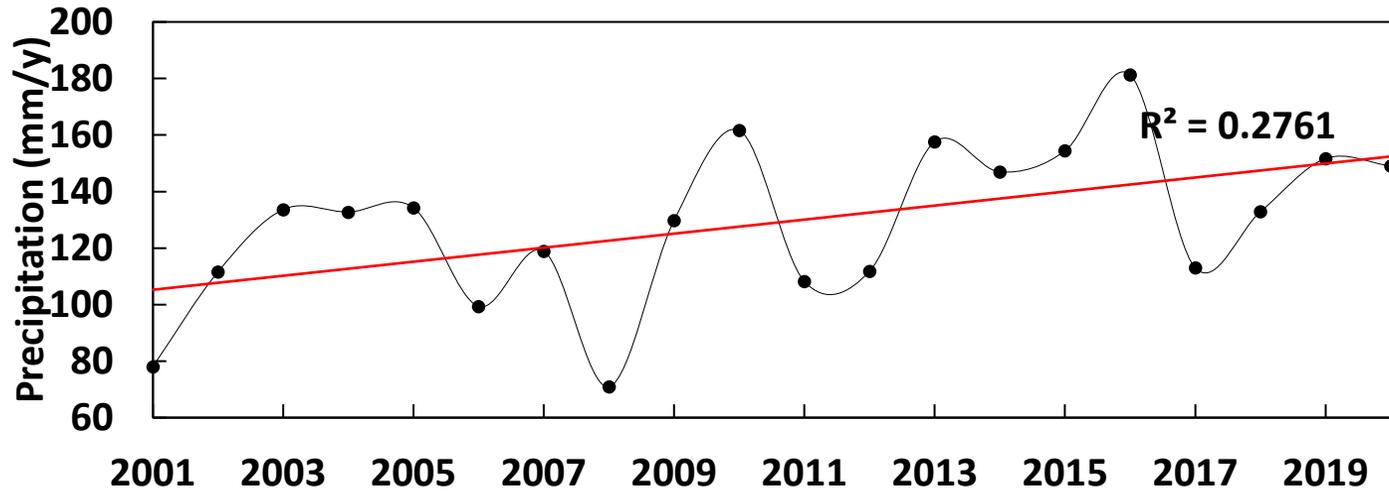
- Mid to high elevations in the Vakhsh, western Pamir (north part), southeast Panj (Afghanistan) are receiving more snow
- Scattered areas in eastern Pamir are receiving less snow
- Rain trends are very variable with increases in lower Panj and some decrease in east and west Pamir



Temperatures are increasing throughout the west & east Pamir

In the lower Panj, almost no temperature increases and scattered decreases

Total annual precipitation trends across both basins

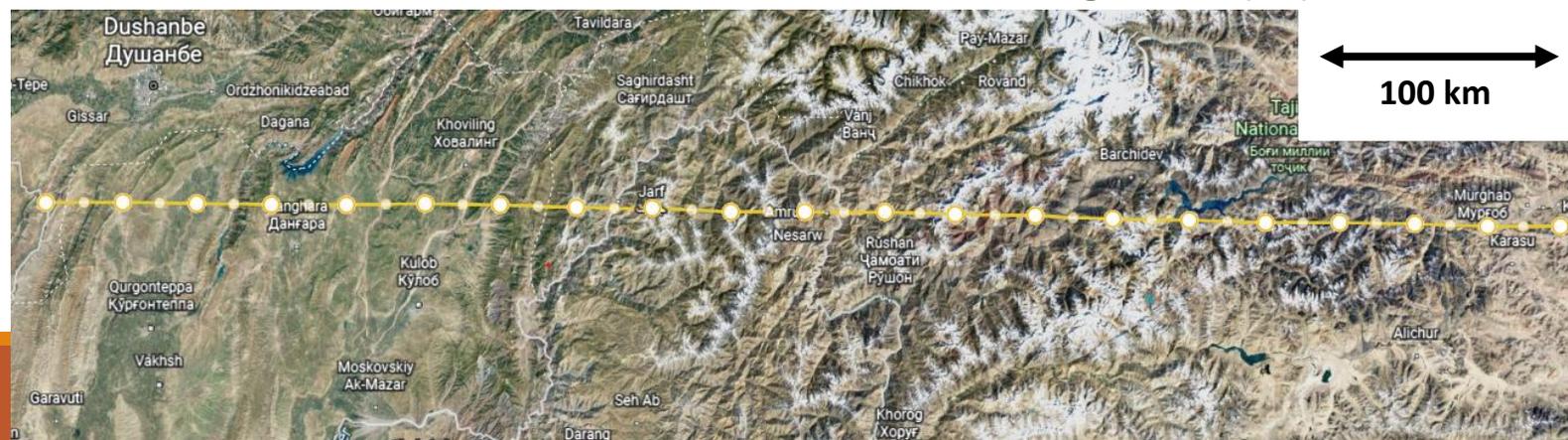
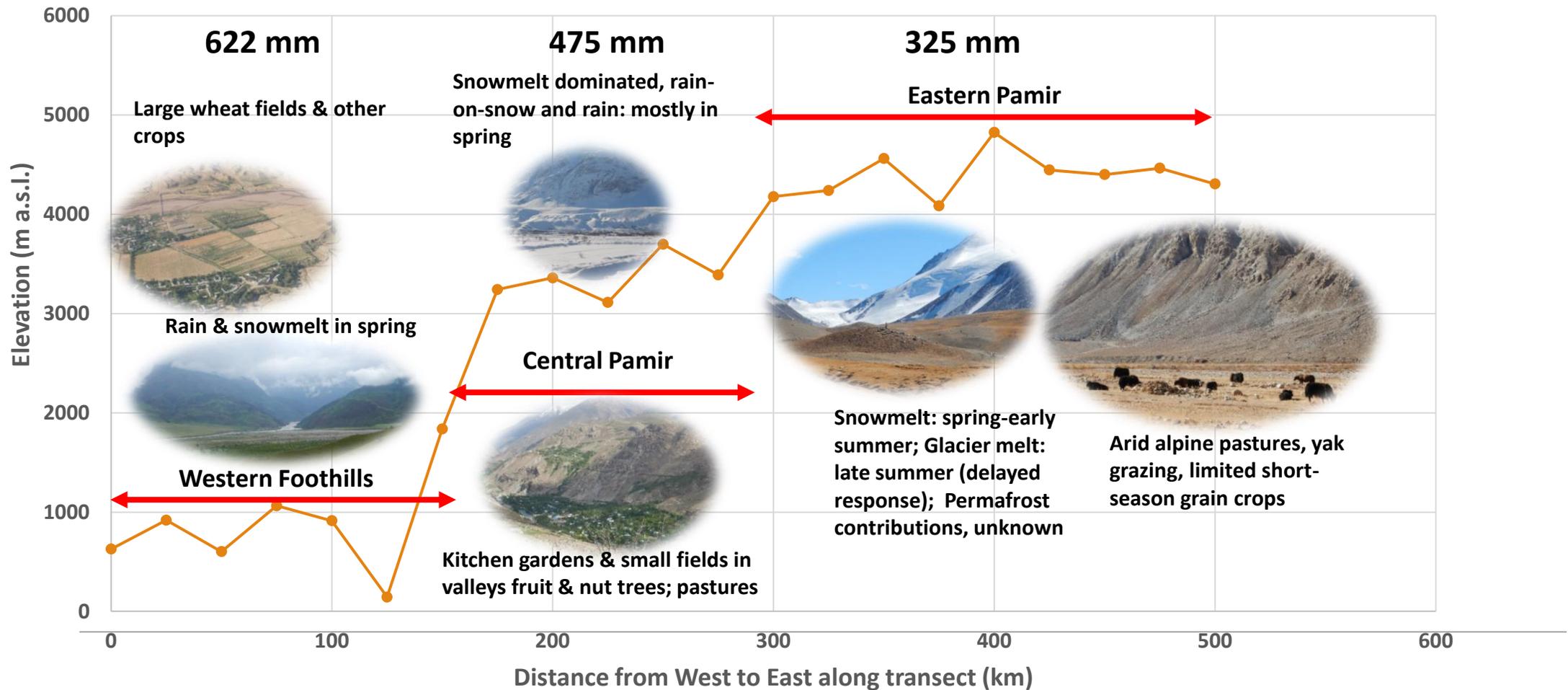


- **Significant increasing total precipitation trend with time but with high inter-annual variability**
- **The greatest variability is for snow**

Other constraints on food security:

- **Incised valleys with limited arable land and poor soils**
- **Avalanches, landslides, debris flows and rockfall on adjacent slopes**
- **Extended droughts**
- **Socioeconomic issues**





Water sources and agricultural across a Pamir transect

An important ‘bottom line’: Don’t rely on a “one-size-fits-all” model to address high mountain food security. Successful interventions must rely on sound scientific information and climate data at appropriate scales.

Thank you very much!



2200 m



4600 m