Himalayan Climate Change Adaptation Programme (HICAP)

Climates of food insecurity in the Hindu Kush Himalayan region

Impacts of changing agri-food system transformations on food security

ICIMOD 30

THREE DECADES FOR MOUNTAINS AND PEOPLE

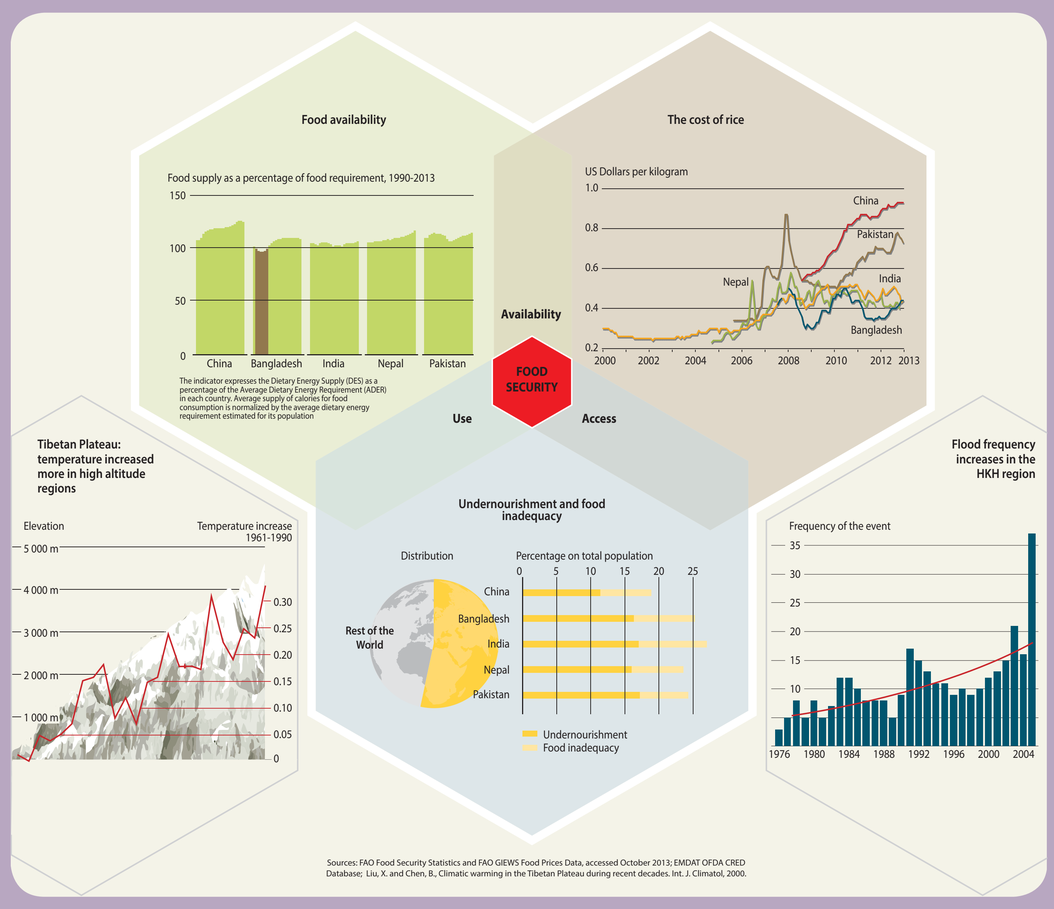
Key findings

Changing climate for mountain farming systems

- Increased temperatures and frequency and intensity of weather extremes
- Erratic precipitation patterns; delayed onset and increased intensity of the monsoon
- Increased frequency and intensity of disasters: flooding, drought, or both
- Decreased productivity of major crops; increased occurence of pests and diseases
- Coping strategies: delayed sowing, re-sowing, and replacing crop and livestock varieties

Ambiguity of cash crops as silver bullet

- Shift from subsistence to cash crop production
- Households involved in cash crop production earn on average USD 370 compared to USD 70 from surplus staple crops each year
- Company/government support: training, subsidies, and contract-farming arrangements
- Increased vulnerability to market and price fluctuations
- Loss of food self-sufficiency and biodiversity



Sources: FAO Food Security Statistics and FAO GIEWS Food Prices Data, accessed October 2013; EMDAT OFDA CRED Database; Liu, X. and Chen, B., Climatic warming in the Tibetan Plateau during recent decades. Int. J. Climatol, 2000.

Tea production in Assam

"We started exploring tea to decrease labour. The tea companies provide us with credit, pesticides, and training. For traditional crop production there is no such support."

– Village head, Sonali Janjati Gaon, Tinsukia, Assam

"The tea lobby in Tinsukia is strong and tries to exploit this economic niche. Tea has become the 'invasive species' of Assam. Silently, biodiversity will deteriorate further. So will food self-reliance."

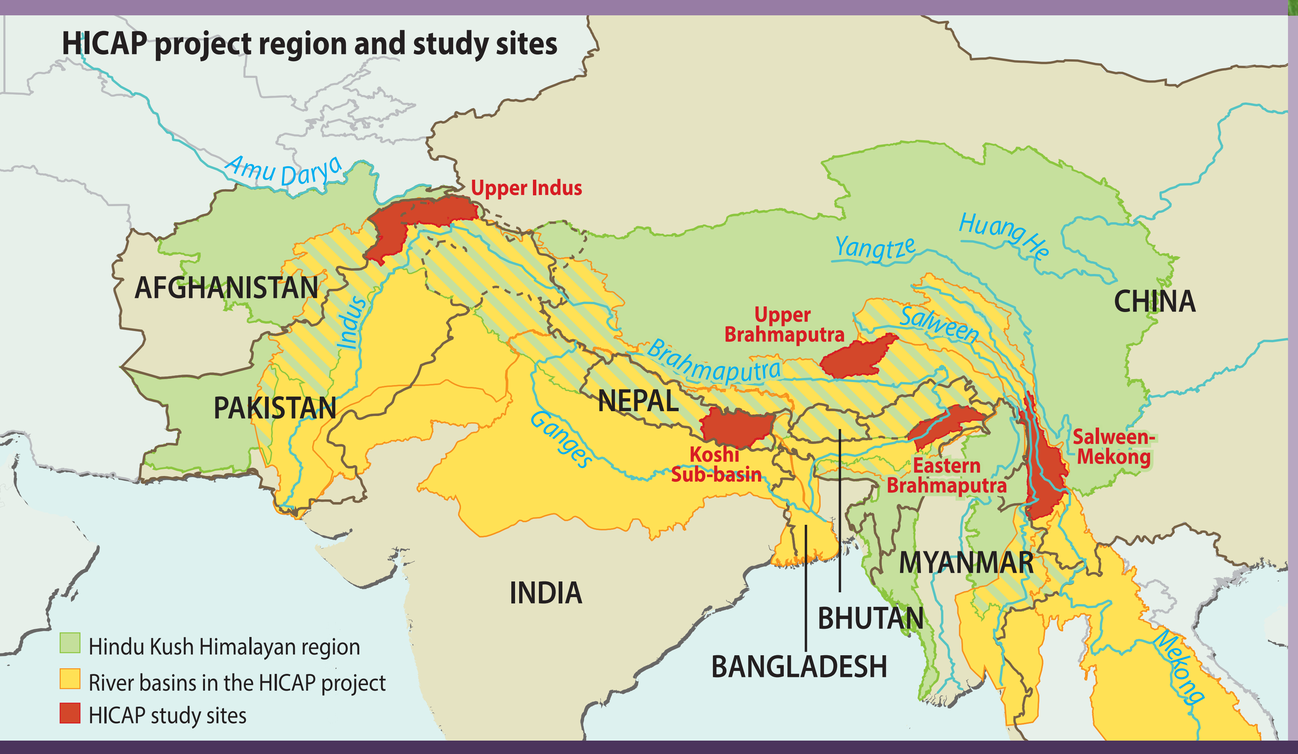
– P. Das, Aaranyak, Society for biodiversity conservation in North-East India, Assam

Transformations in access to food and demeaning value of agriculture

- Limited profits for farmers during food price crisis in 2007/2008: profits siphoned off by middle men, high dependence on markets for food
- Falling short of FAO estimates of 0.64 ha for self-reliant production: small fragmented land plots of around 0.5 ha in mountains limit potential as viable income source
- Agricultural sector less attractive for young people
- Access is a substantial problem in Hindu Kush Himalayas

Household access to agricultural land and sources of food in HICAP sub-basins (PVA data)

	Households with access to agricultural land (in %)	Area of cultivated land (ha) per household	Source of food		
			Self-produced (self-sufficiency) (in %)	Purchased from store/ market (in %)	Other (in %)
Upper Indus sub-basin (Pakistan)	86	0.23	30	65	5
Koshi sub-basin (Nepal)	83	0.61	54	44	2
Eastern Brahmaputra sub-basin (India)	67	0.83	35	50	15
Salween-Mekong sub-basin (China)	94	0.39	41	58	1



Call for action: Approaches for climate and gender-sensitive agriculture

1 **Support diversity in small-scale farming:** Greater diversity in local production and agricultural systems can spread the risk of climate change and provide critical ecosystem services for food systems.

2 **Reevaluate cash crop and livelihood programmes** in regard to climate smartness and gender-sensitivity to make them suitable for requirements of changing farm systems.

3 **Restore the value of agriculture and target youth in farming:** Incentives are needed to stimulate youth to maintain and develop mountain farming systems as pillars in future sustainable food production.

4 **Strengthen education and build knowledge sharing networks:** Regional networks can facilitate the sharing of experiences and development of adaptations and innovations, which can be disseminated through policies and pilot projects.

Migration triggers feminization of agriculture

- Off-farm employment and migration: common livelihood strategies, highly engendered (up to 40% males absent)
- Increased drudgery for women aggravated by climate burden
- Decision-making power remains with men
- Labour shortage on farms cannot be balanced if remittances are low
- New arrangements of land use and farming needed along with capacity building of women as disaster and farm managers

Persisting challenges of nutritional security in mountains

- Crop and diet diversity limited by biophysical conditions
- Breastfeeding and feeding practices constrained by poverty, women's workload, and misconceptions
- Persisting food deprivation of girls and women
- Poor sanitation, hygiene, and access to health infrastructure contribute to malnutrition
- New access to processed foods: boon and bane

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