

CLIMATE CHANGE ADAPTATION
IN
THE HINDU KUSH HIMALAYA

Experience from the Great Himalaya Trail
– My Climate Initiative

PARIBESH PRADHAN

OVERVIEW

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 - THE NEPAL HIMALAYA
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The Great Himalaya Trail

The Great Himalaya Trail is divided into 10 sections:

<u>SN</u>	<u>Section</u>	<u>Days walked</u>
1.	Kanchenjunga	14 days
2.	Makalu Barun	8 days
3.	Everest Rolwaling	7 days
4.	Langtang Helambu	6 days
5.	Manaslu Ganesh Himal	9 days
6.	Annapurna	10 days
7.	Dhaulagiri Dhorpatan	9 days
8.	Dolpa	8 days
9.	Jumla & Mugu	6 days
10.	Api Nampa	12 days

The Great Himalaya Trail – My Climate Initiative

The Great Himalaya Trail - My Climate Initiative is a project funded by the Global Programme for Climate Change, Swiss Agency for Development and Cooperation (SDC).

In consultation support with,

- The International Centre for Integrated Mountain Development (ICIMOD)
- United Nations Environment Programme (UNEP)
- Oikos International
- climatiq.ch

The Great Himalaya Trail

– My Climate Initiative

This project was a 98 day trek across 1555 km of Nepal Himalaya, from 23rd February to 30th May 2012 documenting communities' perception of change and stories of - sustainable adaptation practices, vulnerabilities and impacts of climate change.

Process:

- Interview local school teachers, farmers and local people
- Taking photographs
- Observation

Outcome:

- Climatologue (a climate travelogue)

The Great Himalaya Trail

– My Climate Initiative

The project also initiated a Trek4Education campaign to provide scholarships to schools located in areas vulnerable to climate change.

Process:

- Identifying schools
- Online fundraising: 10 USD for every kilometer trekked

Outcome:

- Raised 7210 USD for 721 kilometers. Still 829 km remains...
- This year, the scholarship has been given to Deepak Sherpa from Taplejung district in Nepal.

The Great Himalaya Trail

– My Climate Initiative

A third objective was to raise awareness among students and school teachers about climate change impacts and adaptation strategies.

Process:

- Interaction with school teachers, students and communities

Outcome:

- 100 interviews
- Over 8500 photographs
- Published articles & stories in local and international newspapers/magazines

The Hindu Kush Himalaya

- Extends over 3500 km from Afghanistan to Myanmar
- The World's youngest geological formation with fragile mountain ecosystem
- Known for World's highest peaks and deepest gorges
- Home to 150 million people
- Source for 10 large river basins in Asia and lifeline for more than 1.3 billion population
- Prone to natural disasters, earthquakes, landslides, flashfloods & GLOFs
- Characterized by physical, climatic and social diversity
- One of the poorest region of the World

Source: The International Center for Integrated Mountain Development (ICIMOD)

The Nepal Himalaya

GHT -Tales from the Trail

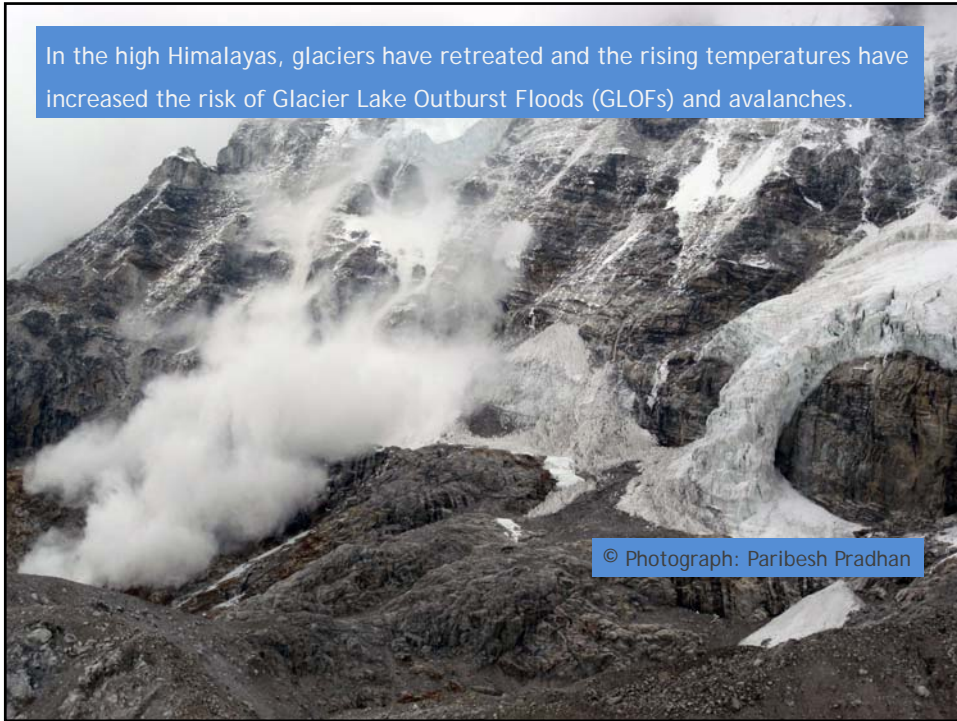
The geographic boundary of Nepal starts in the south as low as 70m above sea level at Kanchan Kalan and within a breadth of 200 km ends in the north - as high as 8848m at Mt. Everest.



Such extreme geographical features have made Nepal rich in biodiversity but with great climatic variability and vulnerability to the impacts of climate change.

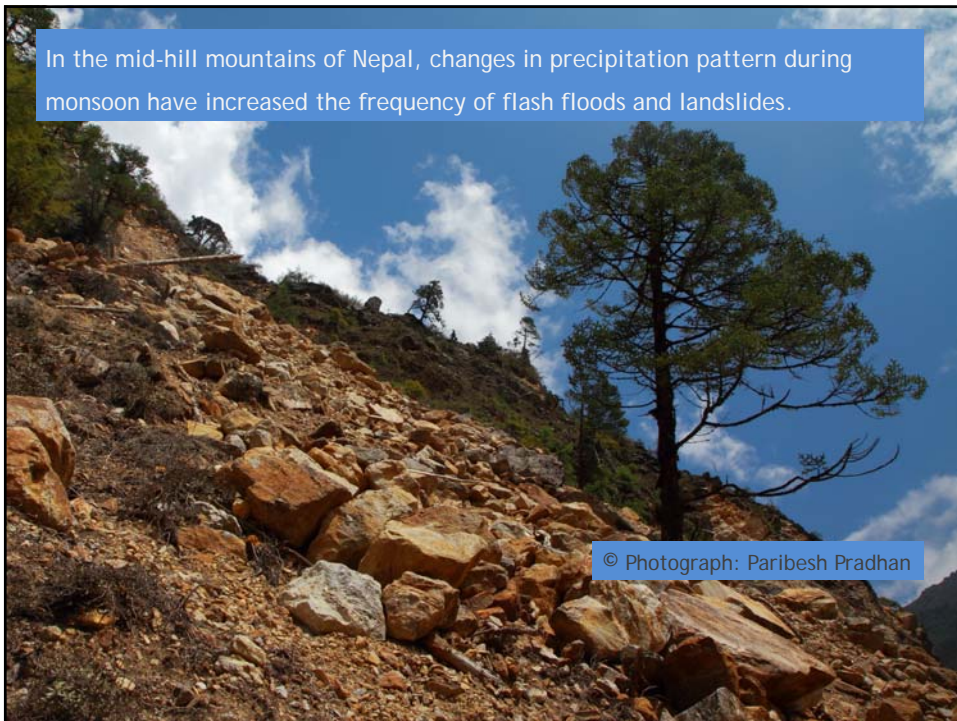


In the high Himalayas, glaciers have retreated and the rising temperatures have increased the risk of Glacier Lake Outburst Floods (GLOFs) and avalanches.



© Photograph: Paribesh Pradhan

In the mid-hill mountains of Nepal, changes in precipitation pattern during monsoon have increased the frequency of flash floods and landslides.



© Photograph: Paribesh Pradhan

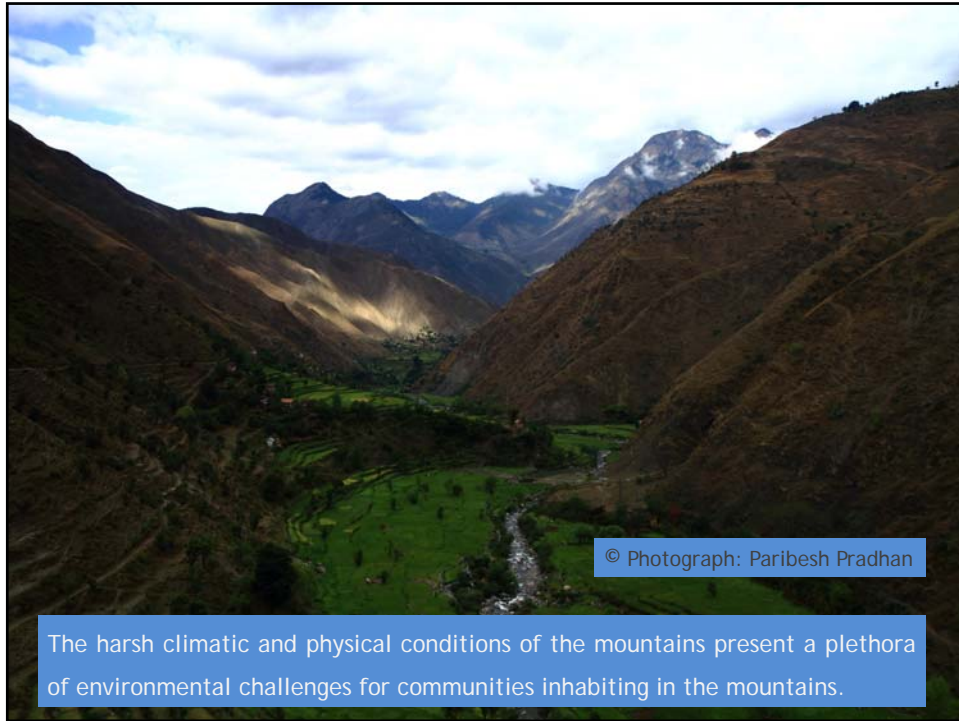


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The erratic rainfall and hailstorm have severely affected the agriculture and livelihood of the people living in these areas.

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To adapt to these changes, farmers could shift their agricultural calendar but the uncertainty of the rainfall pattern have put them in a perpetual dilemma.



© Photograph: Paribesh Pradhan

In many villages, farmers complained about increased occurrence of new pests and diseases.



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Intermittent rainfall and prolong dry period have caused drought in many mid-hill regions,



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And also triggered many forest fires. Forest fires are also caused from the shifting cultivation practices in the mountains.



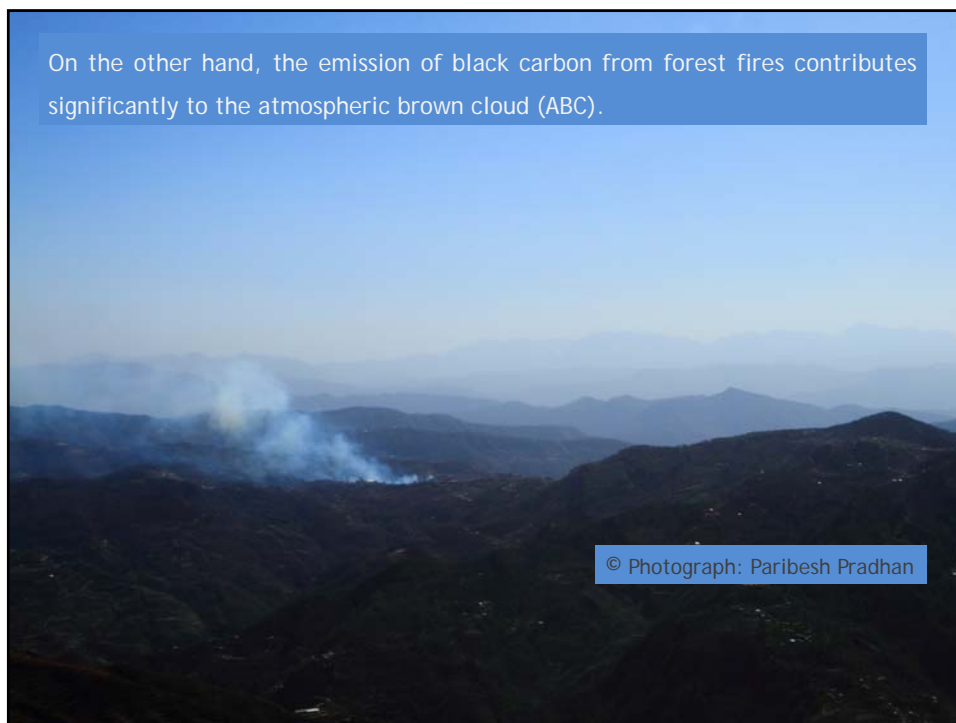
© Photograph: Paribesh Pradhan

Droughts have a direct impact on ecosystem and agricultural production, with socio-economic and health consequences.

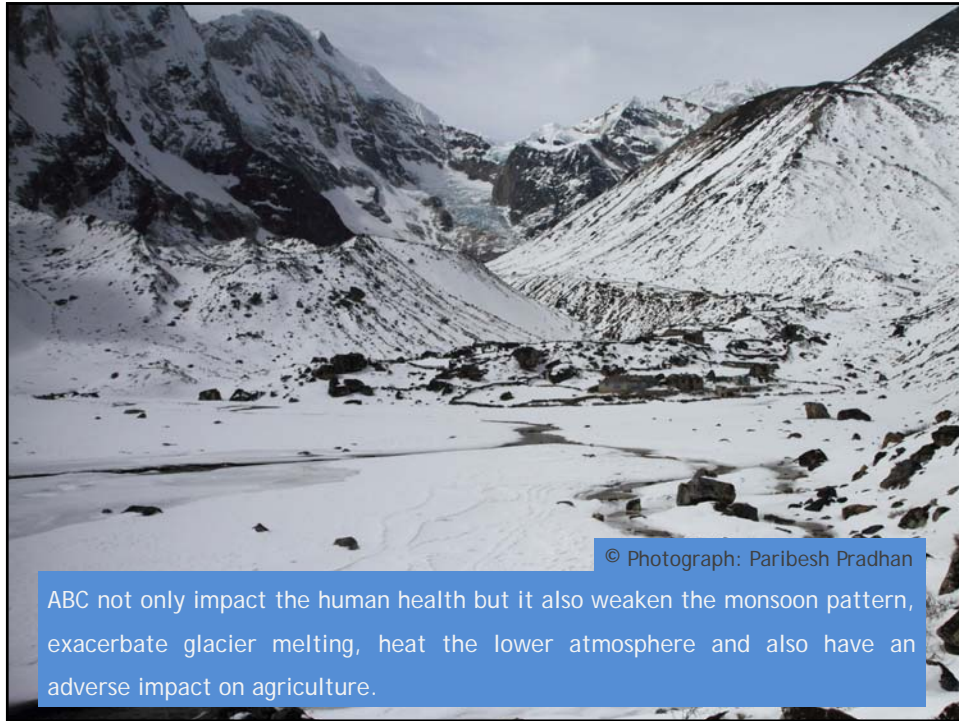


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On the other hand, the emission of black carbon from forest fires contributes significantly to the atmospheric brown cloud (ABC).



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ABC not only impact the human health but it also weaken the monsoon pattern, exacerbate glacier melting, heat the lower atmosphere and also have an adverse impact on agriculture.



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While community forests are successful stories from Nepal, deforestation is still rampant. Forests are logged for timber and fuel wood.



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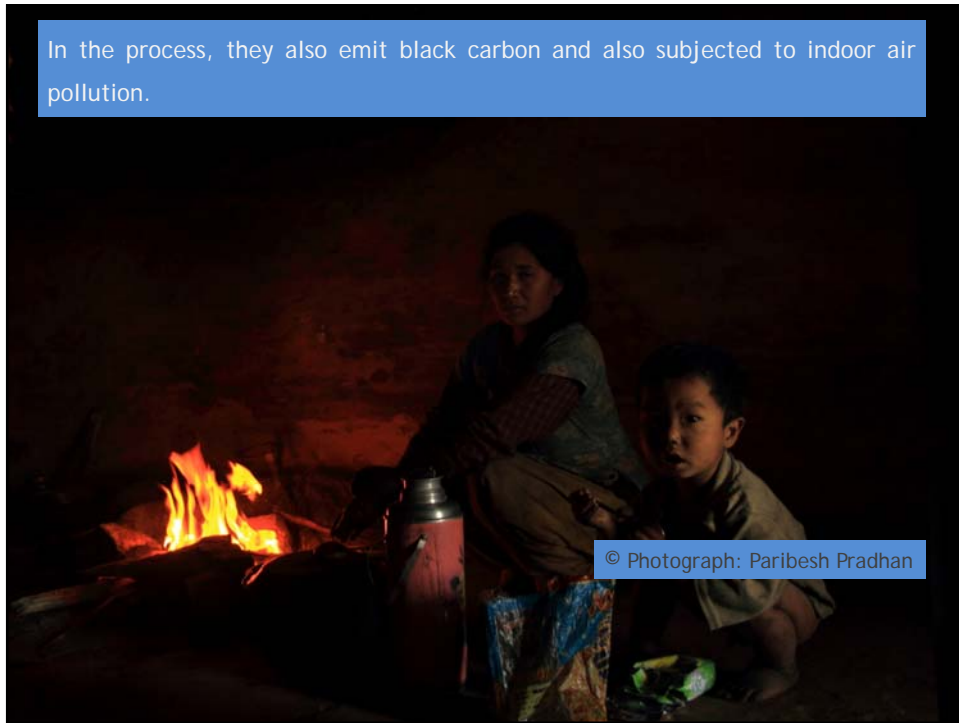
Timber is used for building houses but they also have a high demand from neighboring countries. This has resulted in degradation and depletion of natural resources.



Most of the people in the mountainous villages use wood to cook their food.

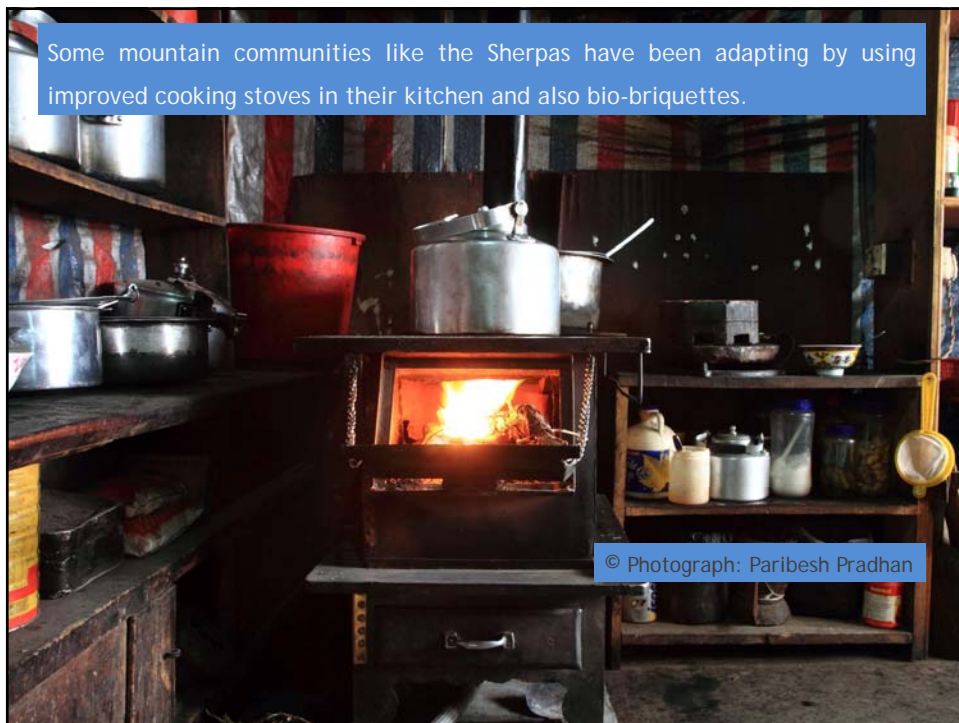
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In the process, they also emit black carbon and also subjected to indoor air pollution.



© Photograph: Paribesh Pradhan

Some mountain communities like the Sherpas have been adapting by using improved cooking stoves in their kitchen and also bio-briquettes.



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In Khumbu, a villager installed a Carbon Mono-oxide Detector to address the risks posed by indoor air pollution.



Alternative technologies such as parabolic solar cooker are also becoming popular. On a clear day, it can boil 5 liters of water in 1 hour. It is a good adaptation strategy.





© Photograph: Paribesh Pradhan

As men migrate towards cities looking for better opportunities - jobs and education alike, only women, children and old couples remain in the villages.



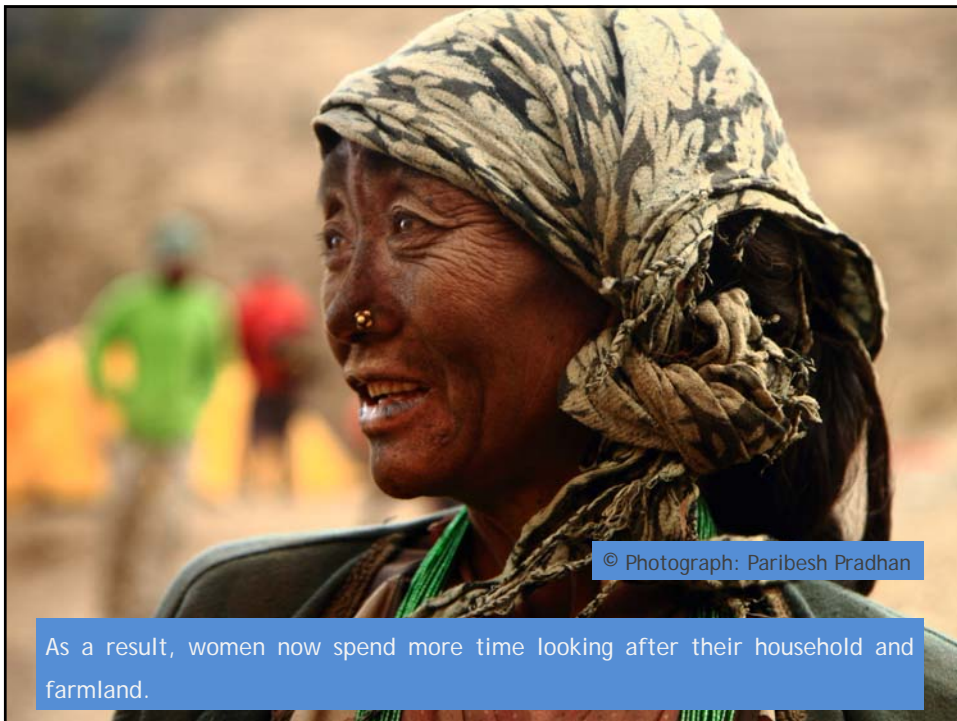
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Migration is a common phenomenon for mountain communities, however there may have been a surge in its scale in the recent years directly or indirectly, as a result of risks imposed by the impacts of climate change.

This has also created a labor crisis in the remote villages in the mountains. There aren't many men left in the villages to work.



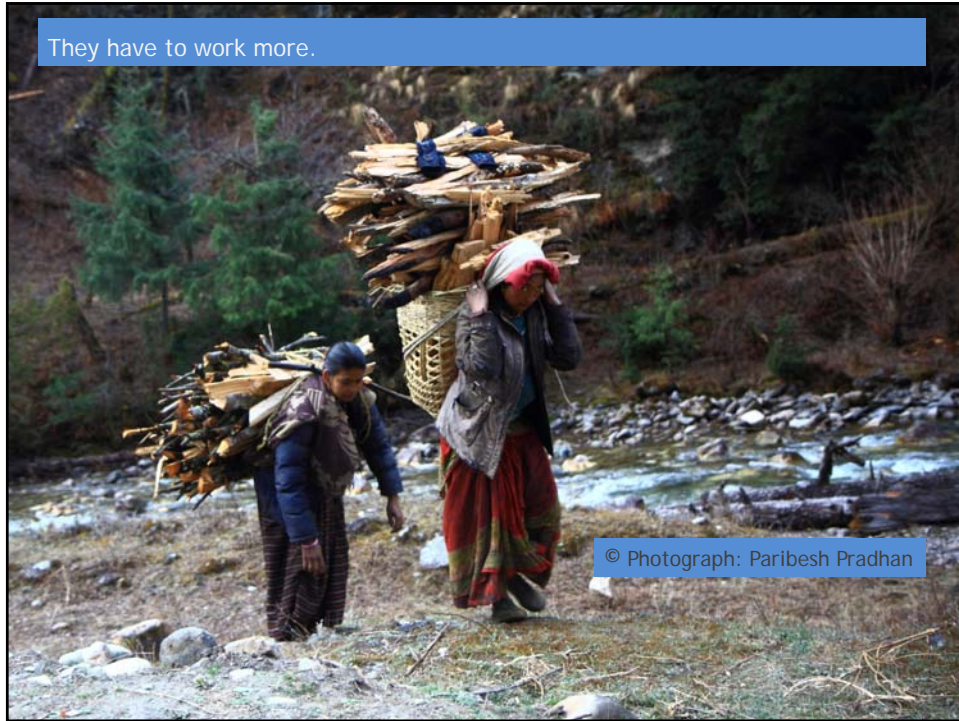
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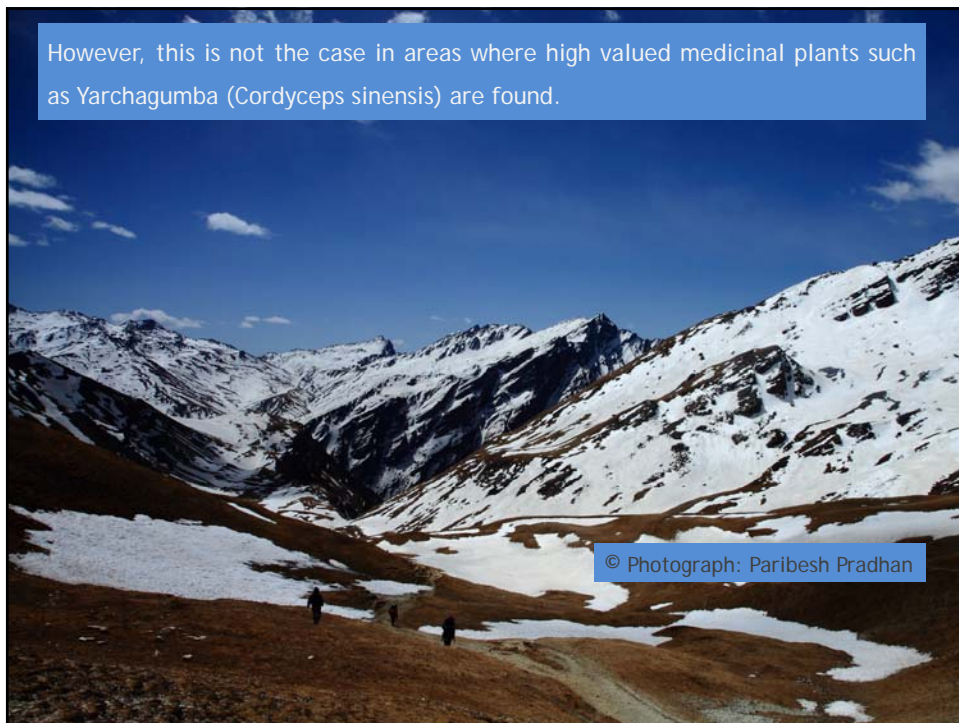
As a result, women now spend more time looking after their household and farmland.

They have to work more.



© Photograph: Paribesh Pradhan

However, this is not the case in areas where high valued medicinal plants such as Yarchagumba (*Cordyceps sinensis*) are found.



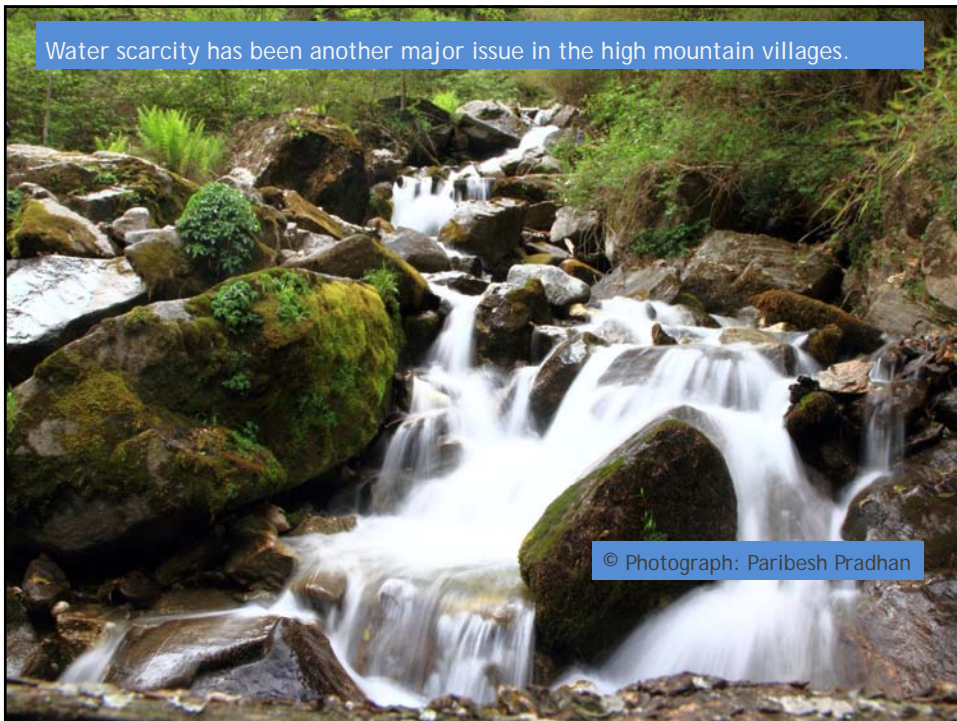
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It is perhaps the reason why Dolpa has relatively low labor migration.



© Photograph: Paribesh Pradhan

Water scarcity has been another major issue in the high mountain villages.



© Photograph: Paribesh Pradhan

In many villages, villagers complained that their natural springs have dried out in the last few years.



© Photograph: Udayan Mishra

However, this may not necessarily be due to climate change in all cases. Some may be a result of anthropogenic changes such as road development projects.



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In the last 6 years, many rural road development activities have been initiated with no regard to the environmental and ecological sustainability of the ecosystem



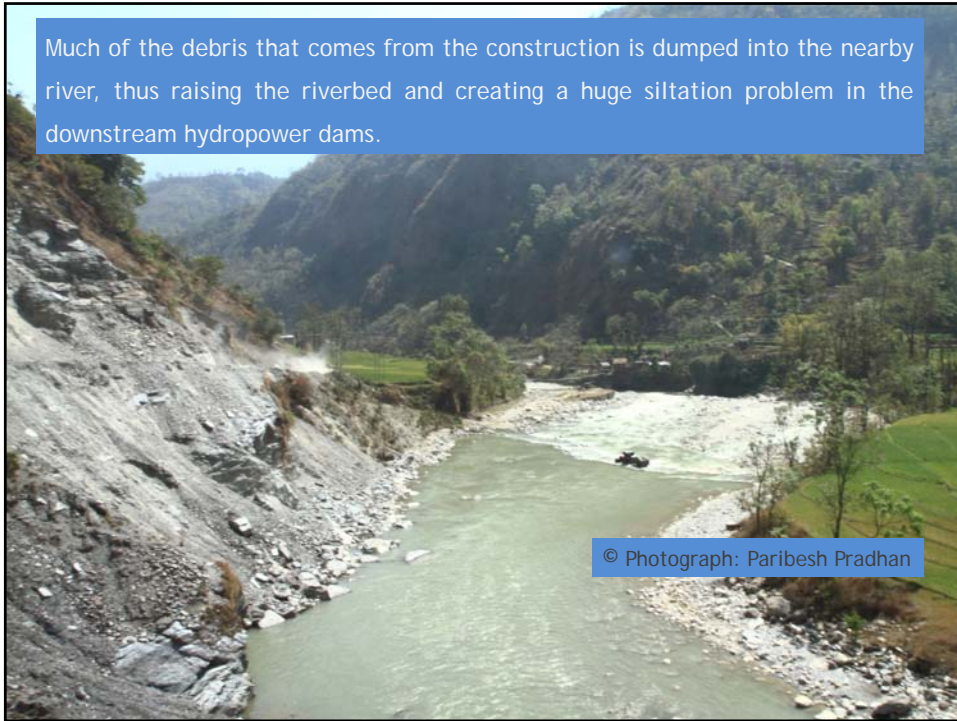
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Many popular tourist trails have been expanded and developed into a dirt road. This has had a negative impact on tourism industry.



© Photograph: Paribesh Pradhan

Much of the debris that comes from the construction is dumped into the nearby river, thus raising the riverbed and creating a huge siltation problem in the downstream hydropower dams.



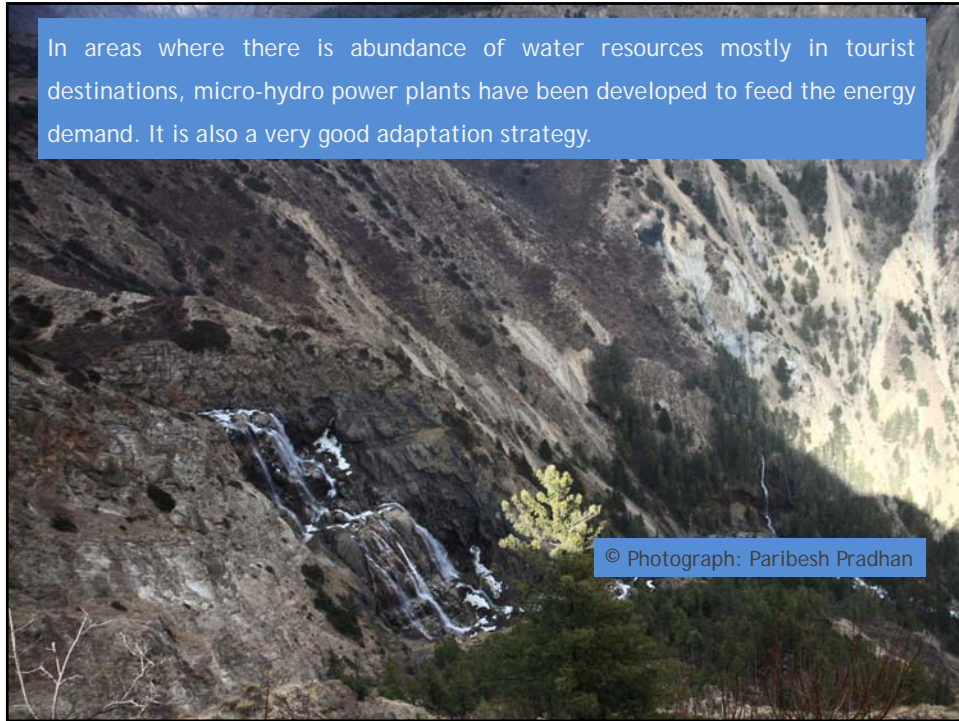
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Such dirt roads also trigger landslide and erosion during monsoon. That is why they only operate during winter seasons.



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In areas where there is abundance of water resources mostly in tourist destinations, micro-hydro power plants have been developed to feed the energy demand. It is also a very good adaptation strategy.



© Photograph: Paribesh Pradhan

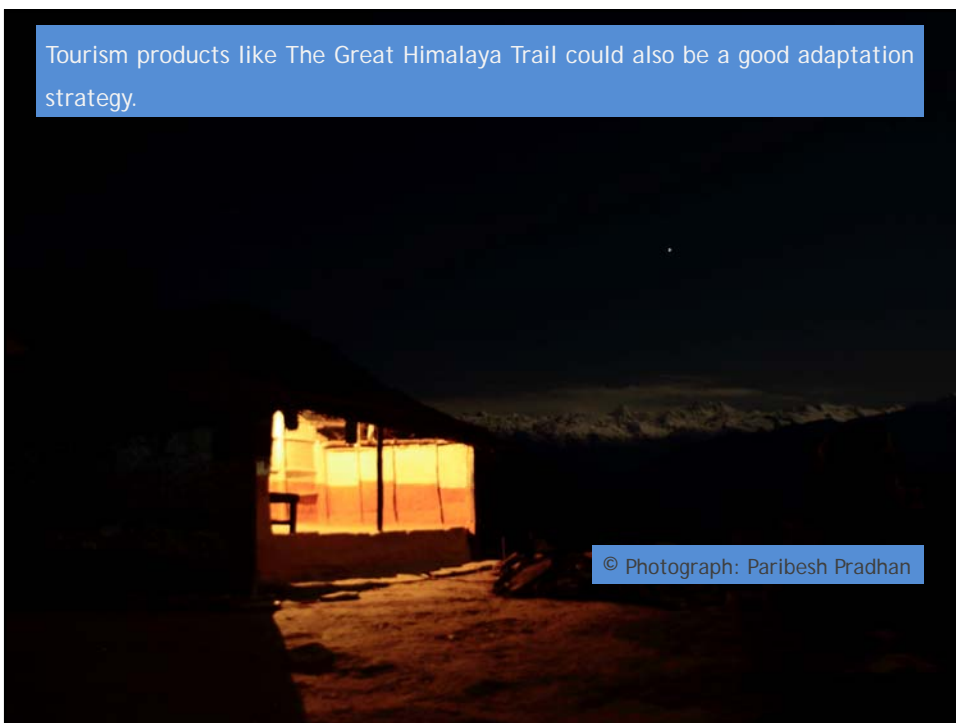
KING MAHENDRA TRUST FOR NATURE CONSERVATION ANNAPURNA CONSERVATION AREA PROJECT BHUJUNG COMMUNITY OWNED MICRO HYDRO ELECTRICITY PROJECT	
DISCRPTION	
SOURCE	MIDIM KHOLA
FLOW	150 LETERS/SECOND
GROSS HEAD	102 METER
PLANT CAPACITY	80 KW
HEADRACE LENGTH	605
PIPE DIAMETER	HDPE 400 & 450 MM
TYPE OF FOREBAY	WITH IRRIGATION DISSIPATER
ENERGY PIPE LENGTH	753 METERS

© Photograph: Paribesh Pradhan

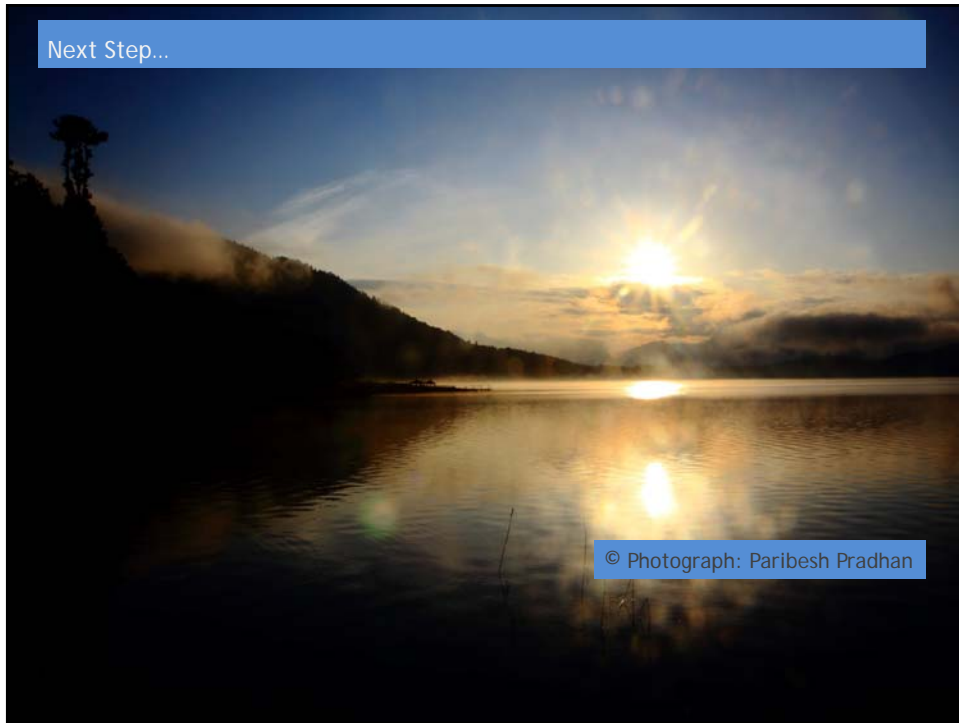
The other major adaptation strategy for mountainous countries like Nepal is pro-poor sustainable tourism.



Tourism products like The Great Himalaya Trail could also be a good adaptation strategy.

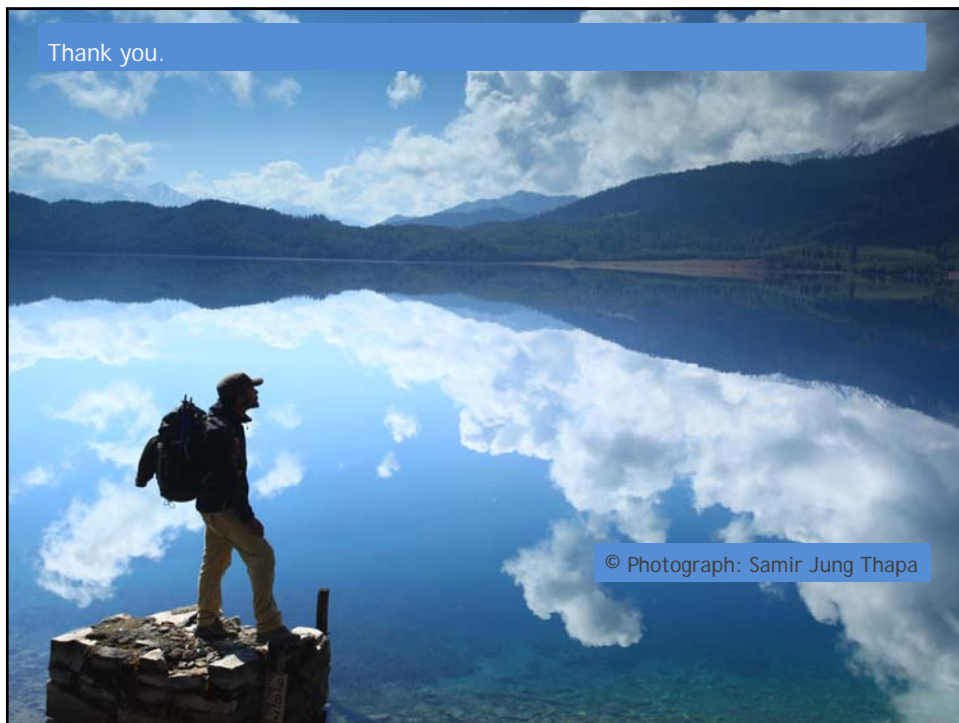


Next Step...



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Thank you.



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