Integrated Approach to Climate Change Adaptation

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Outline of presentation

- Changing climate
- Impacts of climate change
- Need for Integrated Approach for Adaptation
- Challenges ahead

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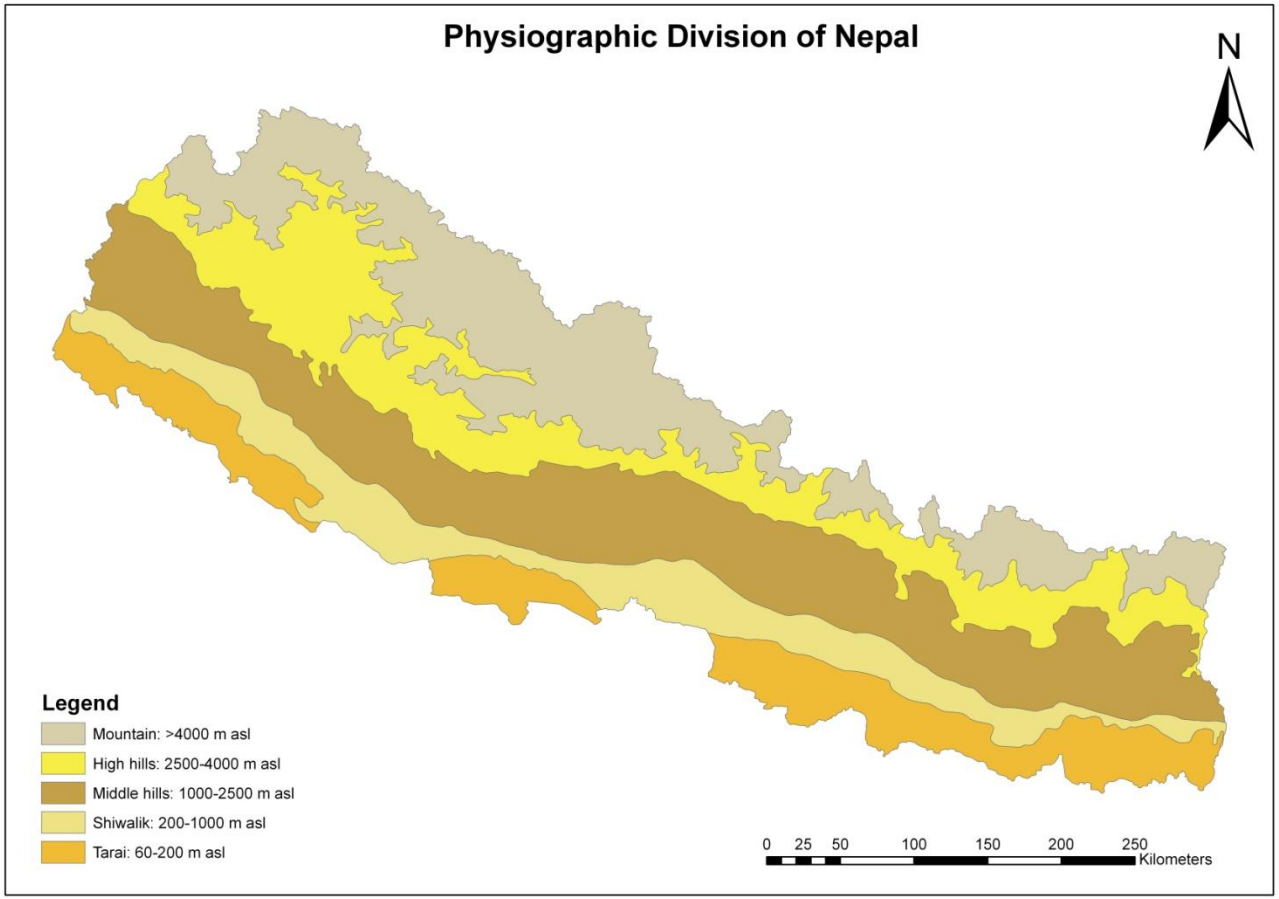
Nepal

- Around 85% of the geographical area under mountains and hills
- Located between China in the north and India in the south
- Agrarian economy that depends on natural climate



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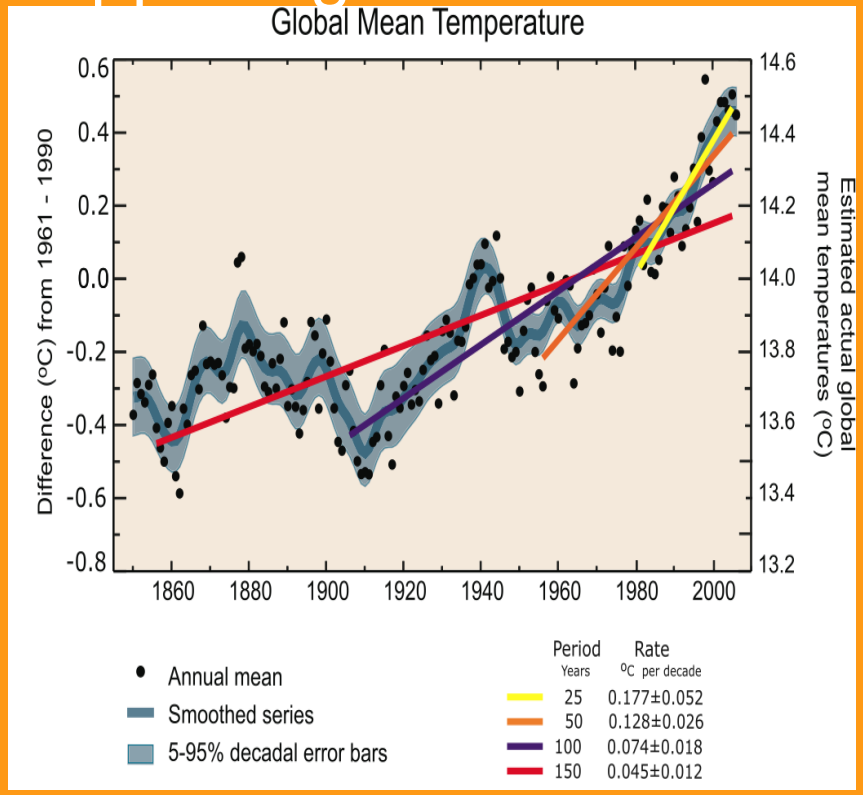
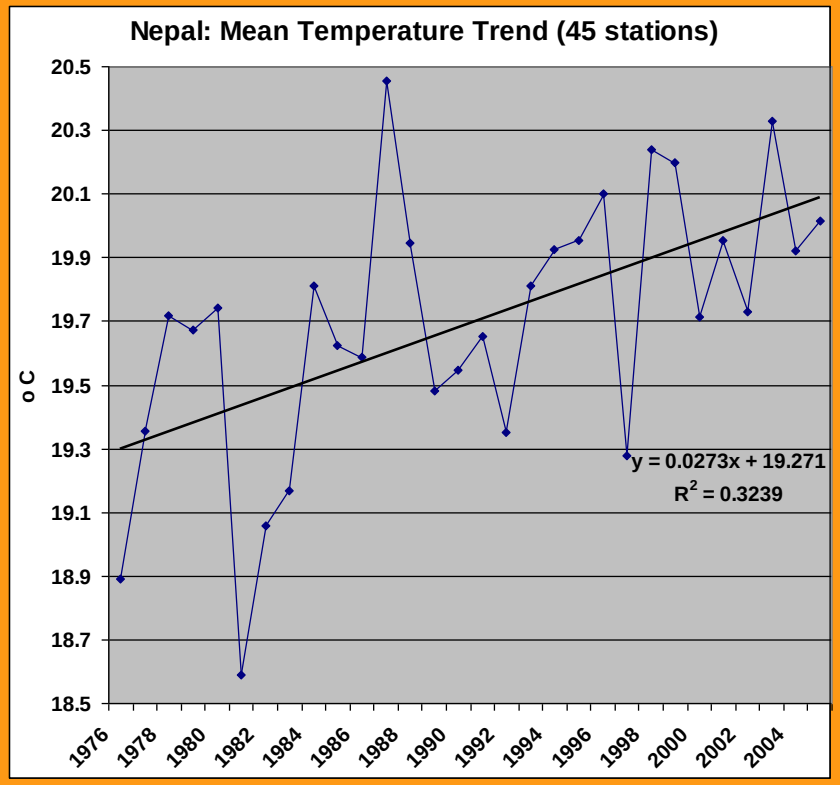
There is no doubt on Climate Change happening





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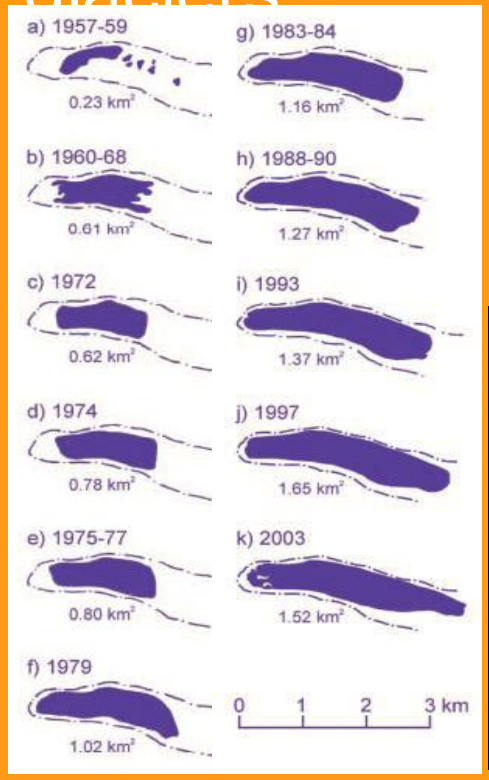
Impacts of temperature rise on snow and glaciers



- Increase in size and number of glacier lakes
- Permafrost melt and debris flow

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Impacts on water resources

- Reduction in water availability
- Fluctuation in perennial water sources

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Impacts of erratic precipitation on assets and resources

- Landslides in the Hills
- Flash floods and debris flow in the plains

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Impacts on agriculture

- Too little and Too much water for agriculture
- Pests and diseases in agriculture, both crops and livestock

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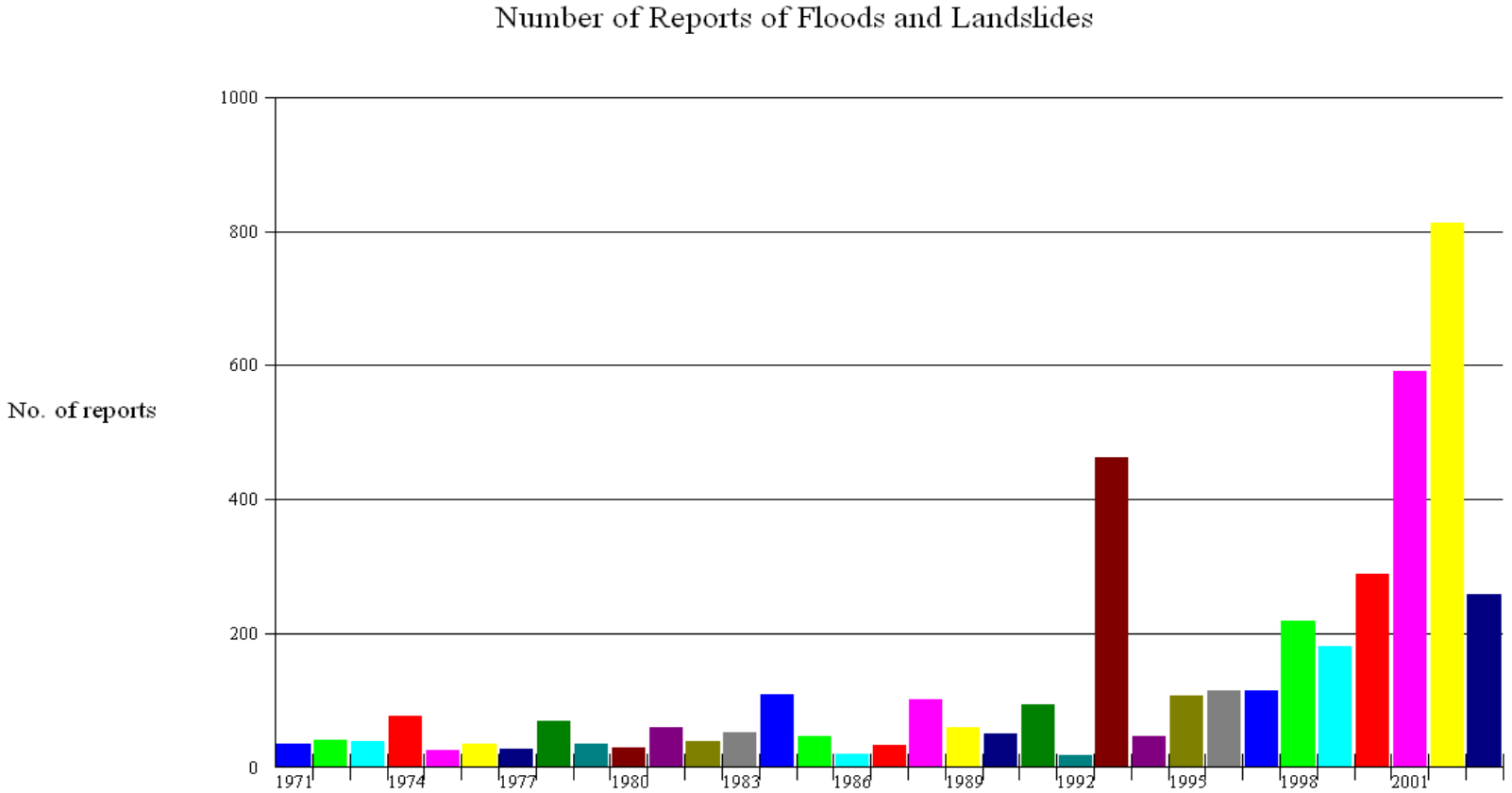
Rising incidences of disasters



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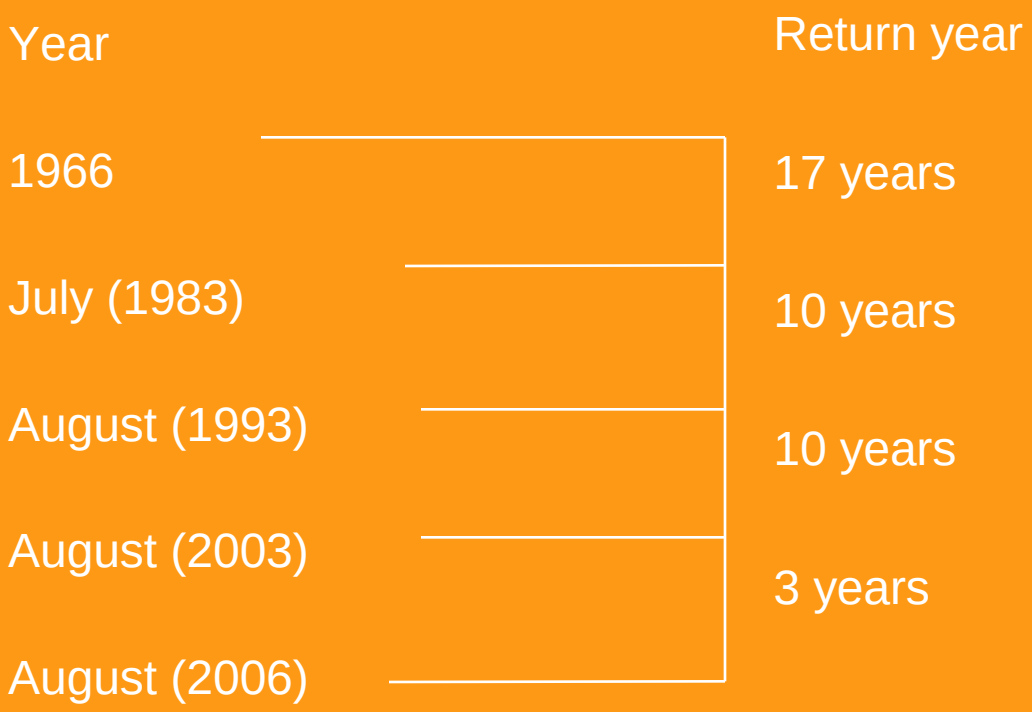
Increasing frequency of flash floods



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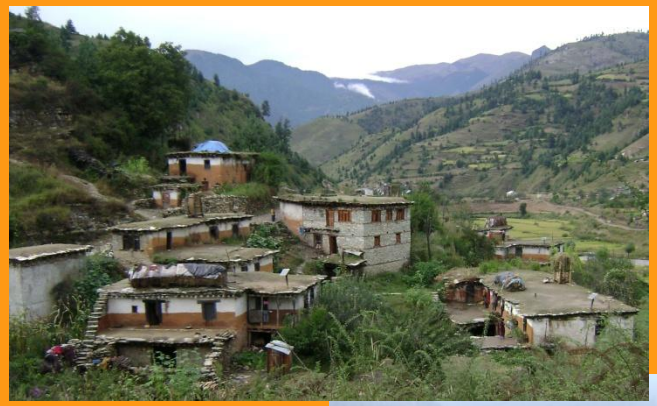
Overall impacts on assets and livelihood options



- Impacts on culture including architecture
- Impacts on economic and social sectors

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Impacts of Climate Change

Climate change (Change in temp change in precipitation, change in wind, etc.)

Impacts on **biophysical environment** (water resources, snow and glaciers, agriculture pests and diseases, etc

Impacts on **economic and social environment** (agriculture, architecture, economy, livelihoods, social structure, etc

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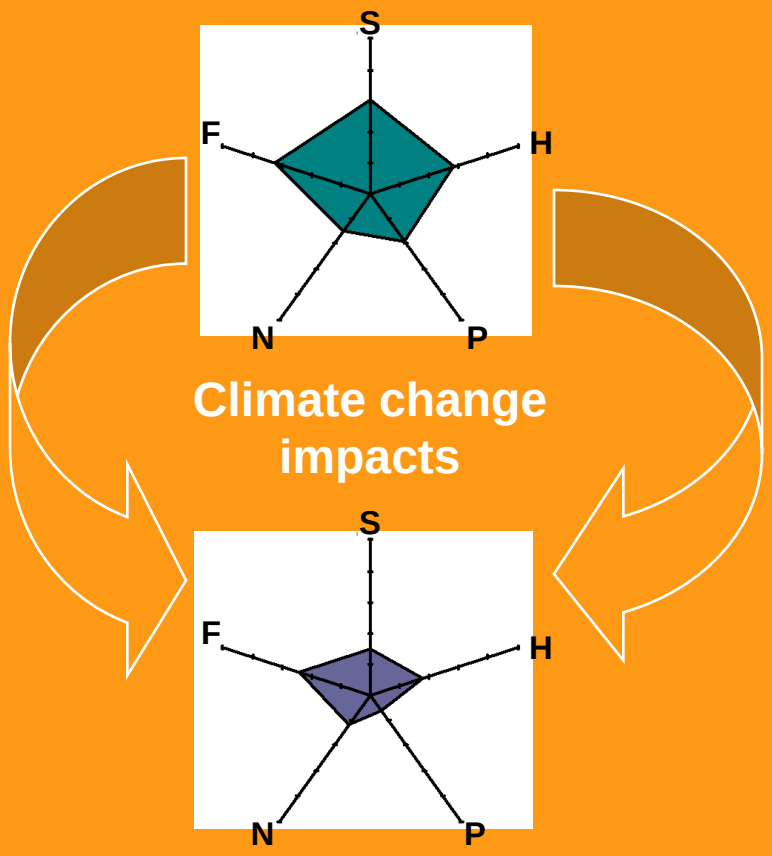
Overall Impact on Livelihood Assets of poor people



Erosion of assets

↓**N** – lower productivity

↓**F** – lower income

↓**P** – infrastructure damage

↓**H** – infectious diseases

↓**S** – migration

More vulnerable, less resilient

Deeper poverty

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Integrated Adaptation: The strategy to survive

- Protect and increasing the livelihood assets
- Diversify livelihood options
- Reduce the risk to disaster

Ultimately these leads to reduction of **VULNEABILITY** and improvement in **ADAPTIVE CAPACITY**

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Protect, Increase and Manage the Assets

Water resources management
- Protection and conservation of water sources
- Effective use of water resources

Forest and biodiversity conservation
- Forest as “carbon sink” and a livelihood support
- Community forestry

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Protect and Diversify Livelihood Options

Resilient Agriculture
- Crop species and varieties
- Cropping pattern, cultivation practices, pests and diseases management

Livelihood diversification
- Diversification of income
- Promotion of alternative livelihoods

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Reduce Risk to Disasters

- Disaster risk reduction
  - Understanding of climate change induced disasters
  - Awareness of hazards due to climate change
  - Micro watershed conservation and DRR

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Understand climate change and its impacts, Raise awareness and Formulate appropriate policy

- Research and studies
  - Climate change and its impacts at local level
  - Technology identification for community adaptation

- Awareness and education
  - Individual, community, organizations
  - Schools and higher education institutions

- International and national policies
  - Imbedding climate change in all sectoral development programs
  - Timely formulation of appropriate policies at both national and global levels

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Challenges ahead

- Reduction of atmospheric GHG to their natural levels
- Future climate scenario and its impacts
- Sharing of technologies and good practices
- Development of technologies for adaptation
- Conducive international and national policies
- **Funding for adaptation**

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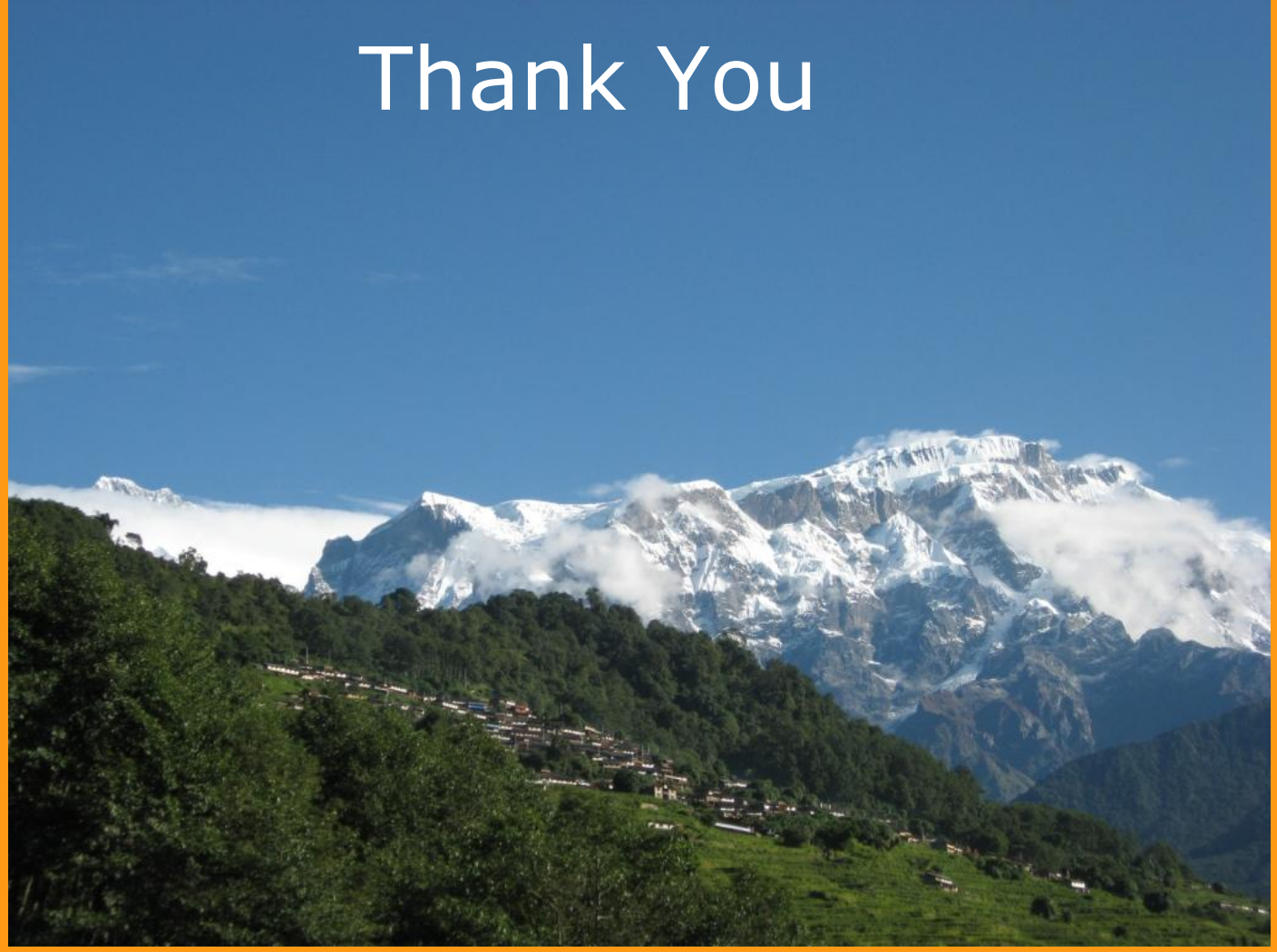
Thank You



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