An Assessment of Historical and Contemporary Livelihood Strategies of the People in Changing Climate: A case of Nepal Himalaya.

Sharad P. Adhikary
Himalayan Climate Centre
P. O. Box 10872
Kathmandu, Nepal
E-mail: himac@mos.com.np

Nepal

- Nepal is situated within the central Himalayan region, with a complex system of high peaks, deep valleys and low lands having great vertical divisions and a great variety of microclimates in short distances.
- This is a highly agricultural country with entrenched rural economy
Himalayan region
Himalayan Range

- World’s highest range in the tropics.
- A life support base to almost half a billion people.
- Provides goods and services.
  - water supply (including irrigation use and energy generation)
  - forest products, food, fibers, etc
- Characterized as a high energy environment with fragile ecosystem.
- Has a tremendous impact on the atmospheric General Circulation.

Climate

- As such the Himalayan range dominates the regional weather and climate of the Indian subcontinent, more importantly the Monsoon.
- The monsoon is highly variable
- Tremendous effort has been placed to understand the monsoon variability.
- Climate Change has added new dimension to the existing research.
- Summer Monsoon dominates the weather and climate of Nepal.
Local weather & climate

- The strong vertical gradients cause the meteorological conditions to differ in short distances that causes marked spatial differences in local hydrological regimes and resource flow to the downstream plains.
- The mean rainfall map shows marked spots of dry valleys.
- Highest annual total of 6.2Metres to lowest 0.25 M in short distance.

Rainfall Distribution
• Transportation has been greatest problem.
• Road building in mountainous terrain is much more difficult.
• Even those that were built become unusable due to frequent extreme events.
In many areas journeys in the interior are still made on foot.
The tracks are too bad and too steep
Many rivers have no bridges or too dangerous to be used by beasts of burden.

Thus during rainy season when the rivers are swollen many villages are completely isolated from the outside world.
Livelihood Pattern

- The region presents particularly complex resource use in fragmented and diverse socio-economic and environmental units.
- For centuries people have learned to use these resources with their intimate social system and less dynamic economic activities.
- The settlements in this region were developed in isolated patches dictated mainly by the availability of natural resources.
- They have struck a delicate balance with the surrounding fragile 'ecosystems'.

- Land, labor and climate are the main resources.
- Livelihood pattern dependent mainly on subsistence agriculture with entrenched rural economy.
- Mountain agriculture is mainly labor intensive.
- Extent of terracing - a manifestation of traditional human driving force to resource mobilization.
• Modernization and development processes is changing the livelihood pattern.
• Most of the rural population are not aware of climate change issue.
• But it is effecting them too.
• It is still too early to point the warming trend scientifically. But few early indicators have been observed.

**Few Observed Indicators**

• Early blooming of highland plants.
• Shift in habitats of small insects to higher elevation -e.g., mosquitoes in Jomosom.
• New vector borne tropical disease experienced in higher elevation.
• Reduction of winter cash crops.
• Increased frequency of localized extreme events, floods, landslides, natural hazards.
• Retreat of glaciers.
Need for further research

• Study the perception of local people about past and contemporary changes in climate;
• Study the perception about the impact of climate change in different sectors – land cover and land use; water resources, human health and infrastructures;
• Identify and quantify the different elements at risk;
• Assess adaptation strategies as perceived by local people and its feasibility and effectiveness; and
• Recommend adaptive strategies, which are economically and environmentally viable and acceptable to the local people.

THANK YOU