SUMMER MONSOON AND RELATED DISASTERS IN NEPAL

A

Dissertation submitted in partial fulfillment of the Master's
Degree of Science to the
Central Department of Hydrology and Meteorology
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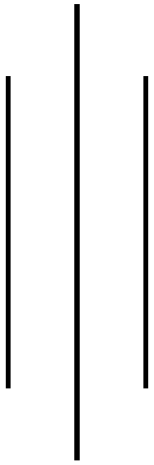

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September, 2007

16 September 2007

Letter of Recommendation

This dissertation entitled **'SUMMER MONSOON AND RELATED DISASTERS IN NEPAL'** has been completed by Ms. Bibhuti Pokharel under my supervision. I certify that she had carried out all her work sincerely with keen interest. I hereby recommend this thesis for approval.

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Abstract

Monsoon and its related disasters for 2005 were studied using the rainfall, temperature and the weather maps. It has been believed that the monsoon 2005 was the study of typical monsoon period affected by climate change, with erratic pattern of rainfall. It has been observed that in June 2005 when extreme temperature was higher compared to extreme temperature in June 2003 and 2004, rainfall was less. Similar pattern were observed throughout the nation.

Rainfall in June and September was less compared to July and August. First onset of monsoon in eastern Nepal was on 20 June and monsoon covered the entire country on 22 June which was slightly behind the schedule. The arrival of monsoon in eastern Nepal was delayed by 10 days. In all, one cyclonic storm and four depressions over the Arabian Sea and Bay of Bengal and one land depression was formed during the season. The extreme temperature in June was extremely high and in stations like Dipayal, the highest in history.

Mainly the western Nepal received less rainfall than normal value. The central region got more rain and the hilly areas had the normal values. Maximum rainfall was observed in the monsoon season when the temperature was highest. The winter season received the minimum rainfall and minimum temperature.

Disasters in monsoon season affected the lives of people and caused loss of millions of property and infrastructures in Nepal. In July and August the eastern Terai was affected by floods while landslides occurred in hilly areas. In September rainfall activity became more intense in far western region under the influence of the cyclonic storm. Life in the far western region was paralyzed due to incessant downpour of rainfall. Intense rainfalls even of short duration caused quick landslides and floods whereas prolonged rainfall caused slow landslides and floods.

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Abbreviations

Amsl-	**Above mean sea level**
DHM	**Department of Hydrology and Meteorology**
GOALS	**Global Ocean Atmosphere Land System**
GDP	**Gross Domestic Product**
ITCZ	**Inter Tropical Convergence Zone**
Kms	**Kilometers**
MOHPREX	**Monsoon Himalayan Precipitation Experiment**
MM5	**Fifth Mesoscale Model**
NCEP	**National Center for Environmental Prediction**
NCAR	**National Center of Atmospheric Research**
NOAA	**National Oceanic and Atmospheric Agency**
SAARC	**South Asian Association for Regional Cooperation**
TOGA	**Tropical Ocean Global Atmosphere**
TRMM-	**Tropical Rainfall Measuring Mission**
TU	**Tribhuvan University**
US	**United States**
UTC	**Coordinated Universal Time**
VDC-	**Village Development Committee**
WCRP-	**World Climate Research Programme**
WMO-	**World Meteorological Organization**