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CONGRATULATION

Mandira Rajbahak Honored

NEW PUBLICATION

DO YOU KNOW?

ANNOUNCEMENTS - 2005

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NEWS

1. Weather, Climate and Water in the Information Age

World Meteorology Day 2004 was celebrated on 23rd March with the theme Weather, Climate and Water in the Information Age. This year, the program was organized jointly by SOHAM, Department of Hydrology and Meteorology (DHM) and Central Department of Hydrology and Meteorology (CDHM) of Tribhuvan University (TU). During the inaugural session, chaired by Prof. Suresh Raj Chalise, the first Issue of Journal of Hydrology and Meteorology published by SOHAM-Nepal was released by Mr. Swoyambhu Man Amatya, Secretary, Ministry of Science and Technology (MOST). Distinguished guests from various organizations, Mr. Adarsha Pd. Pokhrel, then Chairman, SOHAM, Mr. Bhakta Lal Manandhar, Deputy Director General, DHM, Prof. Dr. Bidur Prashad Upadhyaya, Chairman, University Grant Commission (UGC), and Prof. Khadga Bdr. Thapa, Head, CDHM, TU delivered the speech on the importance of meteorology and hydrology and their development in the information age. During the technical session, chaired by Dr. Janak Lal Nayava, then Vice-President, SOHAM, five papers on hydrology and meteorology were presented. The financial support for the program was provided by DHM and UGC.

2. Second Election of Executive Committee of SOHAM - Nepal

After the successful completion of two-year tenure of the first executive committee (EC) of SOHAM-Nepal, three-member election committee chaired by Mr. Nirmal Hari Rajbhandari had performed the election for new EC. The election results were issued on 2 July 2004. The structure of new EC for the next two years (2004-2006) is as follows:

NEWLY ELECTED EC

<ul style="list-style-type: none"> • Chairman Dr. Janak Lal Nayava Freelance consultant • Vice Chairman Prof. Khadga Bdr Thapa Head, CDHM, TU • General Secretary Mr. Jagat K. Bhusal Senior Divisional Hydrologist, DHM • Secretary Mr. Suresh Marahatta Consultant, RECHAM Consult • Treasurer Mr. Dhiraj Pradhananga Head, Dept. of Meteorology (DoM), Tri-Chandra Multiple Campus (TC) 	<ul style="list-style-type: none"> • Ms. Archana Shrestha Meteorologist, DHM • Mr. Damodar Bhakta Shrestha Nepal Electricity Authority (NEA) • Dr. Laxmi Pd. Devkota Consultant, Nepal Development Research Institute • Mr. Rupak Rajbhandari Assoc. Prof., DoM, TC
<p>EX-OFFICIO MEMBERS</p> <ul style="list-style-type: none"> • Mr. Adarsha Pd. Pokhrel (Ex-Chairman, SOHAM) • Dr. Arun Bhakta Shrestha Hydrologist, DHM (Ex-General Secretary, SOHAM) 	

3. Third General Assembly of SOHAM- Nepal

The third general assembly of the Society was held on 23 July 2004. During the assembly, the second annual report of the Society was presented and discussed. Further, the annual program of the society for 2004/05 was presented, which was followed by introduction of newly elected EC. According to the record, till November 2004, the total number of members has increased by 32 and life members by 23 (Fig. 1).

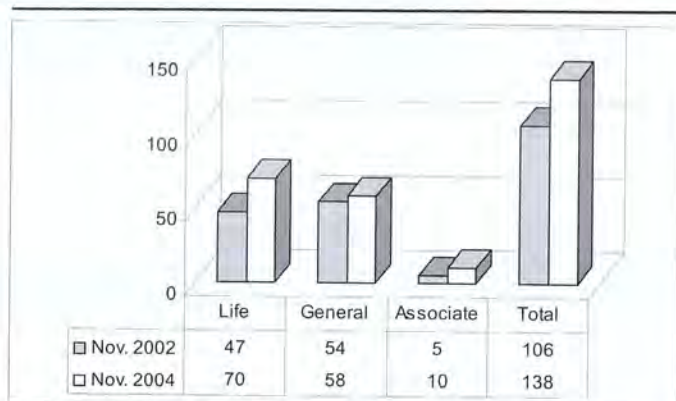


Figure. 1: Member Status of SOHAM

4. Nomination of SOHAM Chairman in Landslide Symposium

The Chairman of SOHAM, Dr. Janak Lal Nayava, has been nominated as a member in the organizing committee of International Symposium on Landslide Hazards in Orogenic Zones from the Himalaya to Island Arcs in Asia. The symposium will be held in Kathmandu from 25-26 September 2005.

5. Meteorology should be Publicized: MOST

Hon. Minister, Mr. Bala Ram Ghartimagar, State Minister, Ms. Pratibha Rana, Secretary, Mr. Swoyambhu Man Amatya and Joint Secretary Purna Bhadra Adiga of MOST along with Director General of DHM, Dr. Madan Lal Shrestha, visited Meteorological Forecasting Division (MFD) of DHM at the Tribhuvan International Airport on 24 August 2004. They emphasized the need in the improvement of dissemination and publicity of meteorological information and its importance to the public through various media.

6. Nepal-India Bilateral Cooperation on Weather Forecasting

A Memorandum of Understanding for cooperation in weather forecasting has been signed between Nepal and India, during the Prime Minister's visit to India in September 2004. According to the agreement, an INSAT ground receiving facility will be set up in Nepal under the grant assistance from the government of India. This facility is expected to be useful in improving weather forecasting in Nepal.

7. Finally the Kyoto Protocol!!

The 90-day countdown to the Kyoto Protocol's entry into force was triggered on 18th November by the receipt of the Russian Federation's instrument of ratification by the United Nations Secretary-General. Russia held the key to Protocol's success with its 17 % share of emissions by developed nations after US, the biggest polluter with a 36% share, pulled out in 2001. The Kyoto Protocol will enter into force on 16th February 2005, 90 days after Russia's instrument of ratification.

At least 55 nations, representing at least 55% of developed countries' CO₂ emissions, should ratify the Protocol to bring it in effect. The protocol will enforce the developed countries (Annex I of the protocol) to reduce the greenhouse gases emissions by 5.2 % of 1990 levels during the period 2008-2012. It is of note that Nepal has not ratified the protocol yet. (Source: UNFCC website, 28 Oct, <http://unfccc.int/2860.php> and <http://www.alertnet.org/>, 22 Oct and 22 Nov 2004)

8. The Day After Tomorrow: Climate Change Entertainment

While US politicians are yet to be convinced about the global climate change issues, Hollywood has sent a strong message through the movie *The Day After Tomorrow*. The movie, based

on global climate change impacts, was shown at DHM in September. The movie demonstrates the climate change issue and indifferent behavior of developed countries about it, and also warns the possible impact due to their negligence. It has also tried to clarify the problems in prediction in climate science and the understanding of climate change that it is not just the global warming but might also be the global cooling.

ACTIVITIES

1. The SAGARMATHA Workshop

SOHAM facilitated the Kali Gandaki stakeholders' consultation workshop, SAGARMATHA (Snow and Glacier Aspects of Water Resources Management in The Himalayas), held on 21 April 2004 in Pokhara. The workshop was jointly organized by International Centre for Integrated Mountain Development (ICIMOD) and Center for Ecology and Hydrology (CEH), UK and was supported by Department for International Development (DFID), UK. All together 46 participants, stakeholders from Kali Gandaki and Modi basins and experts from water related government organizations and working in these regions participated in the workshop. The speakers of the workshop highlighted the importance of seasonal and long term water resources in snow and glacier fed Himalayan Rivers and the necessity of strategies for coping with impacts of climate change induced de-glaciation on the livelihood of people in the region. Four working papers were presented in the technical session.

2. Consulting Service

The Society has provided consulting service in the study of low and high flows of 2003 for the Melamchi Drinking Water Project, routine investigation of Tsho Rolpa Glacier Lake, low flow studies of western Terai and installation of rain gauge stations at Repeni, Saptari district.

3. Talk Forum

Dr. Laxmi Pd. Devkota presented his research on "Water Availability in the Kathmandu Valley" on 23 September 2004. He highlighted various sources of water in the valley and quantified them. He showed that water available in the valley is more than enough for its dwellers if proper management of surface and groundwater is done. The Society has planned three more talk programs in 2004/05, under this Forum.

4. Interaction Program

One day Interaction Program to media persons is planned to be launched in the early 2005 in Kathmandu. The main aim of this program is to familiarize terminologies of meteorology and hydrology and works of professional hydrologists and meteorologists to the media professionals for development activities in Nepal.

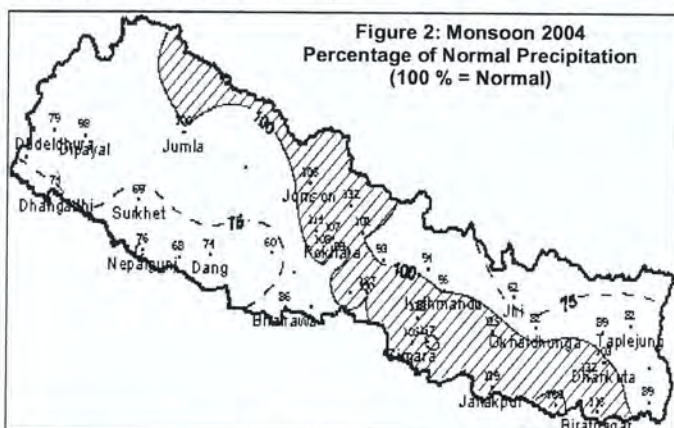
FEATURES

1. New WMO Codes for Data Exchange

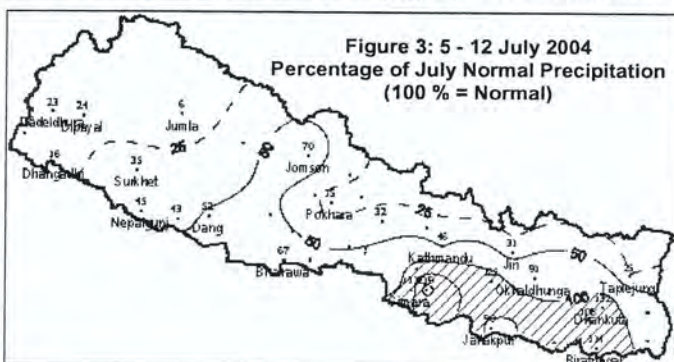
WMO is going to implement new data code *Table Driven Code Form (TDCF)* instead of *Traditional Alphanumeric Code (TAC)* for operational data exchange. The deadline for the beginning of the new code for SYNOP and CLIMAT is Nov. 2005 and for TAF and METAR is 2008. The TDCF are BUFR (Binary Universal Form for the Representation of meteorological data), CREX (Character form for the Representation and Exchange of data) and GRIB (process data in the form of Grid point values expressed in Binary form). (Contributed by: Mr. Suman K. Regmi, MFD)

2. Monsoon 2004 in Nepal

Monsoon in Nepal remained quite feeble this year. Most places received below normal rainfall. Mainly southern plains of far and mid western regions experienced deficit in rainfall, less than 75% of the normal (Fig. 2: Isohyetal map based on preliminary data). In contrary, central Nepal and eastern Terai experienced above normal monsoon rainfall.



July 5-12 event was the heaviest rainfall event of this monsoon. The rainfall during the period was more than normal of the July total in central and eastern Terai (Fig. 3). As consequences



floods were observed in these areas. For example, maximum discharge of about 6850 cubic meters per second (cumecs) in Bagmati River at Padheradovan (in central Nepal) was recorded on 9 July and this is the second largest flood observed since 1979 (source: DHM).

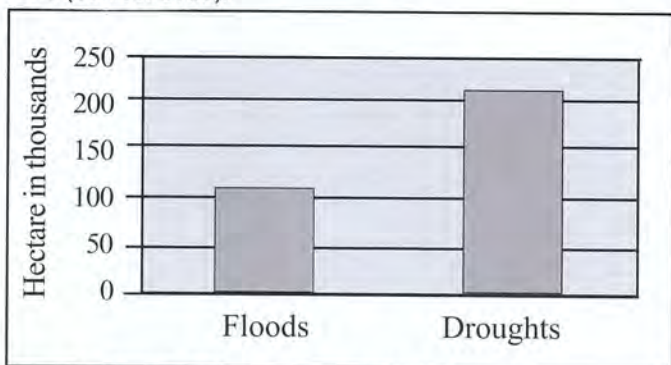


Figure 4: Damage to Agriculture land in 2004 Monsoon (Based on The Kathmandu Post Daily, 27 Oct, 2004)

The agriculture sector was affected both by floods and drought during this monsoon. However, the effect of drought was almost double than that of the floods (Fig. 4). About 111 thousand hectares agriculture land was affected by floods, mainly in the Terai plains of eastern and central regions. The Rautahat district in central Nepal was most affected by floods. Similarly, Sarlahi, Dhanusha and Mahotari were the topmost districts affected by floods. About 215 thousand hectares agriculture land in 10

districts, mainly in western and mid western regions were affected by the deficit rainfall. Kailali, Banke, Dang, Kapilbastu, Rupandehi, Nawalparasi, Myagdi, Baglung, Tanahu and one district- Terhathum of eastern region were those 10 districts reported to be highly affected by deficit in rain. (Contribution of isohyetal maps by Mrs Mandira Rajbahak, DHM)

3. Floods in Asia-2004

In addition to Nepal, storms and floods affected India, Bangladesh and China from June to September. However, Bangladesh and China were most affected by the floods in July and September. Flood in some parts of Bangladesh in July was the worst flood observed for more than a decade. Flood in mid September in Dhaka was also the worst flood of the decade. Similarly, more than 160 people died in China as a result of heavy rains, which also put the massive Three Gorges hydroelectric system on flood alert. The Three Gorges dam project was closed to shipping for the first time since it began operation earlier this year. Water flow at the dam has surpassed the warning levels of 45,000 cumecs and was expected to reach 60,000 cumecs. Local officials described the rain as the heaviest in years. The China Daily reported that more than 450,000 people were evacuated and 127,000 homes destroyed or damaged. The Chinese authorities put an initial estimate of the cost of flood damage in the region at hundreds of millions of dollars. Similarly, about 100 people died in India in the second week of July and millions left their homes as the annual rains caused chaos.

4. Hurricanes in Atlantic

This summer, United States and Caribbean countries were severely affected by North Atlantic Hurricanes. Out of total 13 tropical storms, 7 developed into hurricanes from 31 July to end of September in the North Atlantic Hurricanes. In August, the frequency of tropical cyclone of storm intensity was double (8) than normal (4). Based on preliminary report of National Hurricane Centre of NOAA, the duration, affected cities, intensity of the Atlantic tropical storms that developed into hurricane this summer (July-September) are shown in Table 1. (Contributed by Dhiraj Pradhananga, Head, DoM, TC).

Table 1: Hurricanes in Atlantic (2004)

Name	Dates	Max wind (Km/h)	Deaths	Damage (US\$ in millions)	Affected Cities
Alex	31 Jul – 6 Aug	193	0	N/A	North Carolina, US
Charley	9-14 Aug	233	15	14,000 (in US)	Jamaica, Cuba, Florida
Danielle	13-21 Aug	169	0	No damage	Over Ocean
Frances	24 Aug – 9 Sep	233	23	N/A	Bahamas, Florida (2.5 million people evacuated in Florida-largest evacuation)
Ivan	2-24 Sep (longest)	266	90	N/A	Granada, Jamaica, Grand Cayman Island, Western Cuba, Alabama, Delmarva Peninsula, South Florida, Louisiana
Jeanne	13-29 Sep	193	2000+	N/A	Virgin Islands, Puerto Rico, Dominican Republic, Haiti, Bahamas, Florida
Karl	16-24 Sep	225	140	No damage	Over Ocean

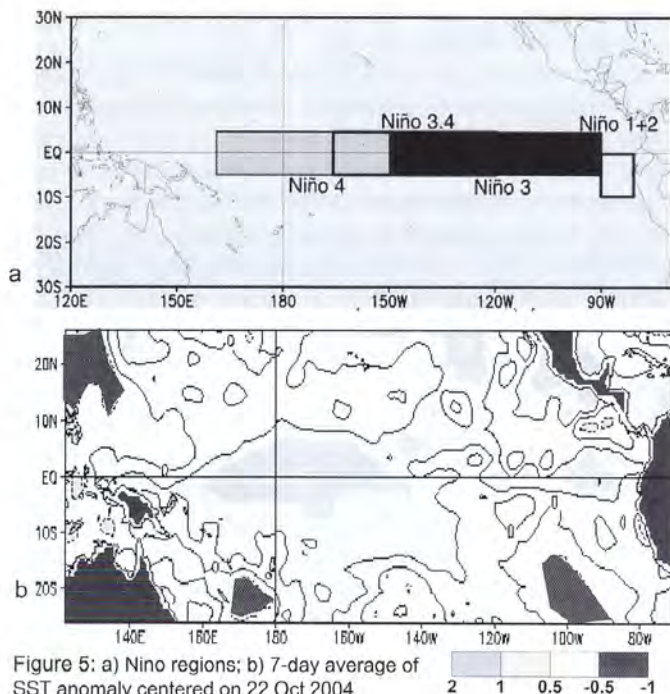
Source: <http://www.nhc.noaa.gov/archive/2004/tws/> (14 October)

5. ENSO (El Niño/Southern Oscillation) Outlook

The eastern equatorial Pacific, the Niño 3 region (Fig. 5a), which was cooler than normal during the period May to July depicted

positive Sea Surface Temperature (SST) anomaly since August, while the Niño 3.4 and Niño 4 regions have depicted El Niño like characteristic since May and January respectively.

Positive SST anomalies greater than $+0.5^{\circ}\text{C}$ persisted in the central and western equatorial Pacific (Niño 3 region) with anomalies



greater than $+1^{\circ}\text{C}$ extending from 160°E eastward to 120°W by the end of September. This warming and its eastward expansion during July-September indicated the early stages of a warm (El Niño) episode. Experts were little bit doubtful about a basin-wide El Niño because of the presence of below-average SSTs in the far eastern equatorial Pacific between 95°W and South American coast by the end of September. However, the recent development (Fig. 5b) of positive SST anomaly of greater than 0.5°C in far eastern equatorial Pacific indicates the possibility of a basin-wide El Niño. Based on the recent evolution of oceanic and atmospheric conditions and on a majority of the statistical and coupled model forecasts, NOAA (7 Oct 2004) predicts much possibility of continuation of positive SST anomalies in the Niño 3.4 region, at or above $+0.5^{\circ}\text{C}$ through early 2005. (Extracted from NOAA website www.noaa.gov)

In general, El Niño weakens southwest monsoon; however there is spatial variation of this relationship over the Indian Subcontinent. Studies on impact of El Niño on monsoon rainfall in Nepal indicated that during El Niño years Nepal receives below normal rainfall (Shrestha, 2000). The below normal rainfall during this monsoon, particularly in the western parts may be the signal of El Niño.

CONGRATULATIONS

Mandira Rajbahak Honored



Mrs. Mandira Rajbahak, Senior Divisional Meteorologist, DHM and Member, SOHAM was honored by the Prime Minister with the Best Civil Service Award 2002/03 on the Civil Service Day-2004. The award was cash amount of Nepali Rupees one lakh. The Society expresses heartfelt congratulation to Mrs. Rajbahak.

NEW PUBLICATION

A new book "Elements of Practical Hydrology and Meteorology for Environmental Studies" was published by Dr. Binod Shakya, Lecturer, Central Department of Hydrology and Meteorology, TU and Member, SOHAM.

DO YOU KNOW?

- A warming trend of about $0.06^{\circ}\text{C}/\text{year}$ was found during the period 1977-1999 in the maximum annual temperature over the Himalayas and Middle Mountains of Nepal (Shrestha, et al., 1999).
- Maximum annual temperature over Siwaliks and Terai was found to be increasing at the rate of less than $0.03^{\circ}\text{C}/\text{year}$ during the same period 1977-1999 (Shrestha, et al., 1999).
- Annual rainfall was found to be in decreasing trend in far western Nepal. No significant trend was found in the rest of the country (Nayava, 2003).

ANNOUNCEMENTS-2005

Date	Venue	Events	Deadline
3/4-9 Apr	Foz do Iguacu, Brazil	7th IAHS Scientific Assembly "Freshwater: Sustainability within Uncertainty" Details: http://www.cig.ensmp.fr/~iahs/conferences/2005-foz-IAHS.htm	31 Dec 2004 (for some sessions and workshops only)
1-15 Apr	Beijing, China	CLIC First Science Conference "Cryosphere - The 'Frozen' Frontier of Climate Science: Theory, Observations, and Practical Applications" For details: www.clc2005.org	Abstract: 30 Nov 2004 Registration: 31 Jan 2005
3 - 5 May	Cadiz, Spain	ECOSUD 2005 "Fifth International Conference on Ecosystems and Sustainable Development" Related topics: Remote sensing, Water resources For details: www.wessex.ac.uk	Abstract: As soon as possible, but will be accepted till 3 Apr 2005
4-5 May	Singapore	Asia Pacific Water 2005 For senior level management executive: to participate as a speaker, contact Chock Fang: chockfang.wong@terrapinn.com	Not Applicable
20-24 Jun	Orange County, California, USA	5th International Scientific Conference on the "Global Energy and Water Cycle- Observing and predicting the Earth's water and energy cycle: current state of knowledge and future research requirements" Details: www.gewex.org/5thconf.htm	16 Jan 2005
2-11 Aug	Beijing, China	IAMAS 2005 "9th Scientific Assembly of the International Association of Meteorology and Atmospheric Sciences (IAMAS) of the International Union of Geodesy and Geophysics" For details: www.iamas2005.com	25 Feb 2005
27 Aug - 2 Sep	Grindelwald, Switzerland	4th International NCCR Climate Summer School "From the Holocene to the Anthropocene: Climate of the Last 1000 Years" Note: For young researchers (PhD students & Post-Docs). Small grant will be available for developing countries. Details: www.nccr-climate.unibe.ch	15 Dec 2004
1-3 Sep	Rhodes island, Greece	9th International Conference on Environmental Science and Technology - 2005 Some topics: Environmental dynamics, Global change Details: http://www.gnest.org/cest	15 Dec 2004
25-26 Sep	Kathmandu Nepal	International Symposium on Landslide Hazards in Orographic Zones from the Himalaya to Island Arcs in Asia. Details: Dr. Vishnu Dangol (symposium@nsls.org.np)	Abstract: 31 Jan. 2005

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Note: List includes the events with registration/abstract submission deadline after Nov 2004.