

**Government of Nepal
Ministry of Home Affairs
Disaster Management Division**



Use of Space Technology For Water Management

**PRAMOD GAUTAM
ASSISTANT SUB INSPECTOR**

PARTICIPANT INFORMATION

Name : PRAMOD GAUTAM

Country : NEPAL

Organization : Disaster Management
Division

Samakhushi, Kathmandu, Nepal

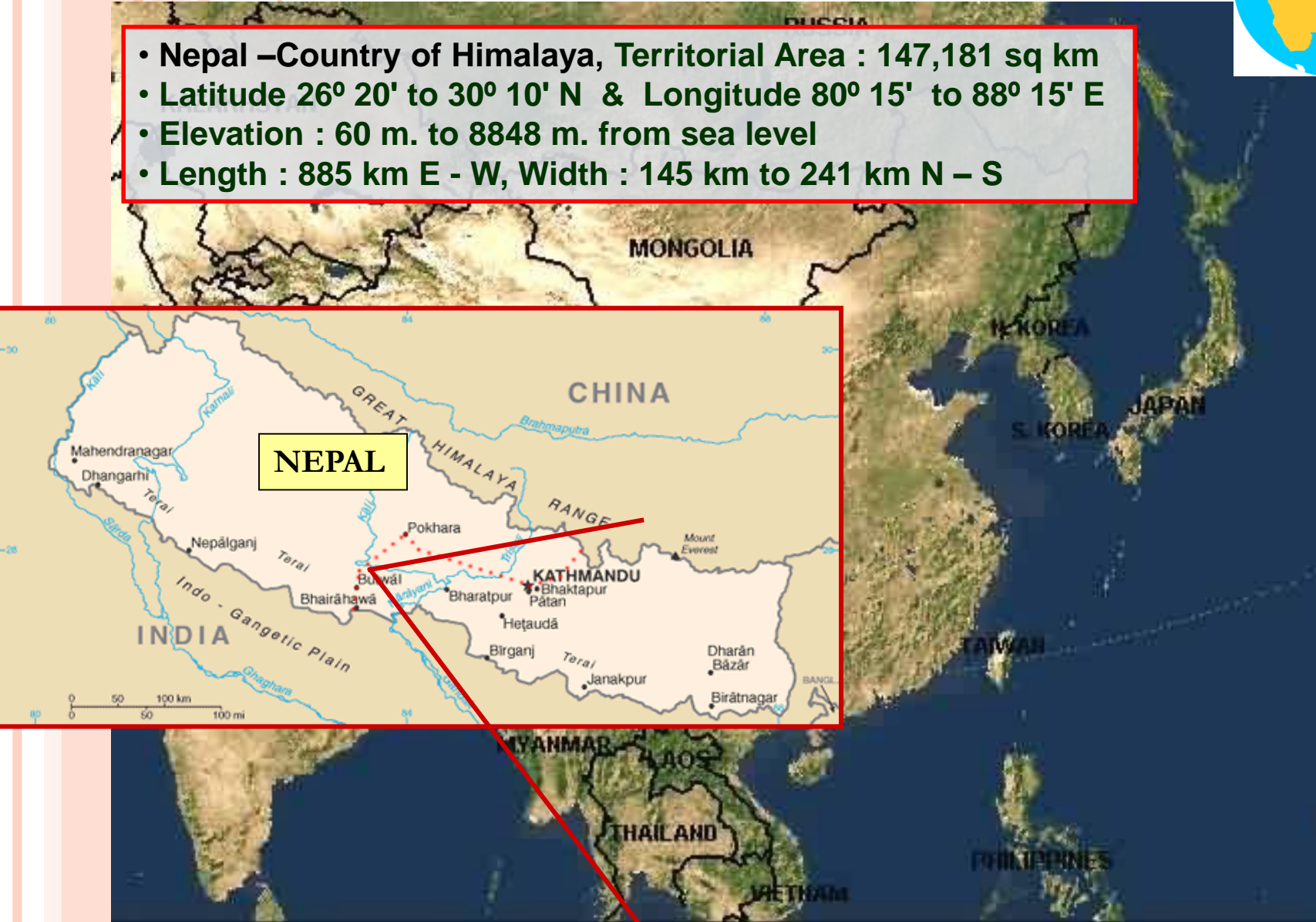
Position : Assistant Sub Inspector

Responsibility : Disaster Responder , Assist in
implementation of the Disaster Risk Reduction and
Response Plan

Geographical Location of Nepal



- Nepal –Country of Himalaya, Territorial Area : 147,181 sq km
- Latitude $26^{\circ} 20'$ to $30^{\circ} 10'$ N & Longitude $80^{\circ} 15'$ to $88^{\circ} 15'$ E
- Elevation : 60 m. to 8848 m. from sea level
- Length : 885 km E - W, Width : 145 km to 241 km N – S



NEPAL – COUNTRY OF HIMALAYA

- Landlocked Country in South Asia
- Population : 2011 – 26494504 / 2021 – 30,526,143 (Projected)
- 3 Geographical Region (Himal/Mountain/Tarai)
- 7 Province
- 77 district
- Capital City: **Kathmandu**
- Other Major cities: Pokhara, Biratnagar, Birgunj, Nepalgunj and Butwal

NEPAL'S VULNERABILITY TO NATURAL HAZARDS; ...THE REALITY .

- Nepal Ranks 11th- in terms of Earthquake
- 4th to climatic hazards
- 30th in terms of floods: (UNDP / Bureau for Crisis Prevention & Recovery-BCPR, 2004)
- Kathmandu, 21st most vulnerable city of the world;
- Natural Disaster HOT SPOT: (World Bank 2005)
- Nepal lies on Seismic Active Zone

MAJOR WATER RELATED DISASTER IN NEPAL

- Flood
- Landslide and Debris Flow
- Glacier Lake Outburst Flood (GLOF)
- Windstorm, Thunderbolt and Hailstorm
- Drought

Use of space technology

- Vulnerability and risk assessment
- Early Warning

EMERGENCY RESPONSE

- Specific event
- Rapid provision
- Information about the map
- Support crisis management

RECOVERY & REHABILITATION

- Situation Maps
- Time Series
- Monitoring

2017 FLOOD IN BANKHE DISTRICT

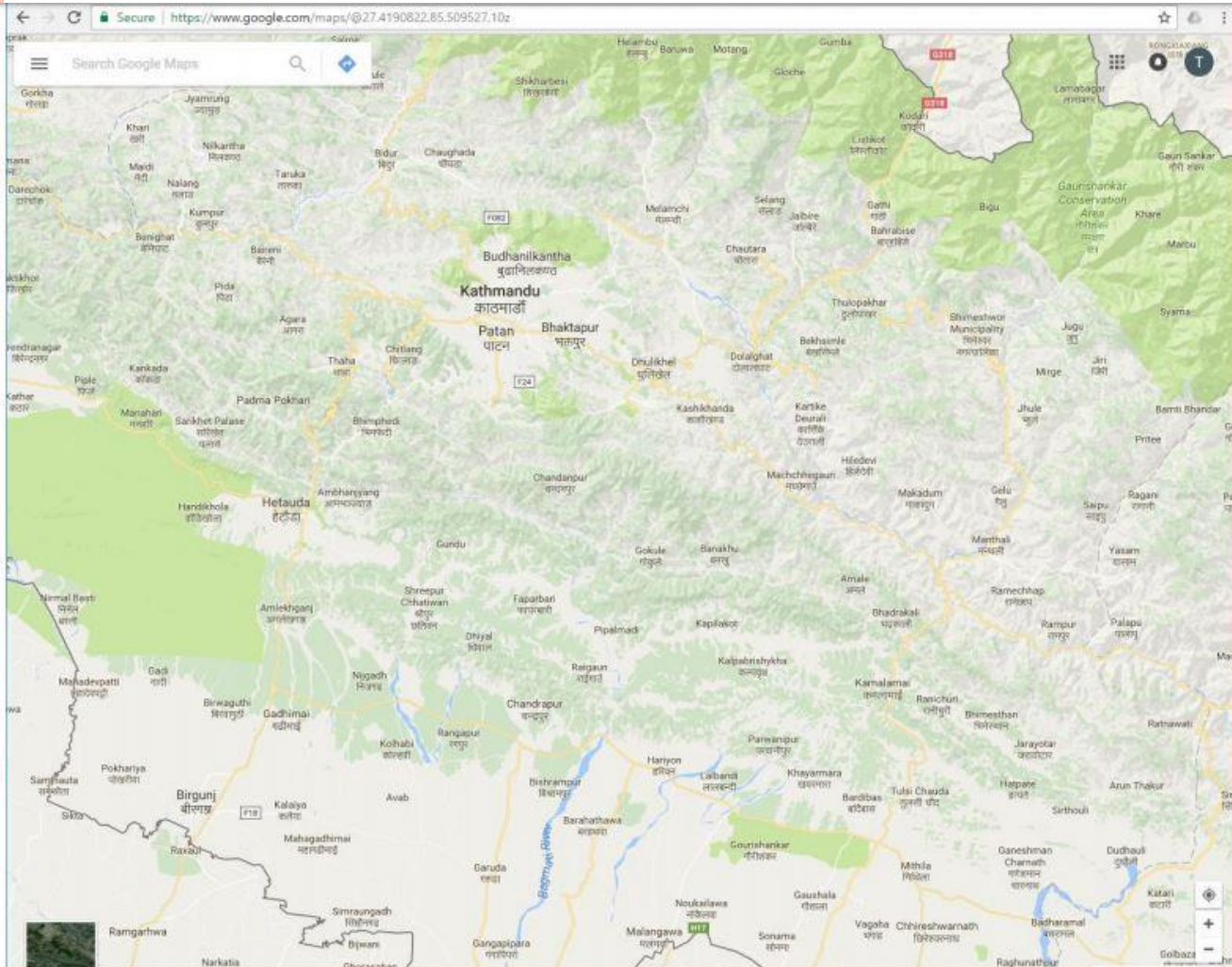


SPACE TECHNOLOGY FOR ALL

NATIONAL STAKEHOLDER FOR FLOOD DISASTER MANAGEMENT IN NEPAL

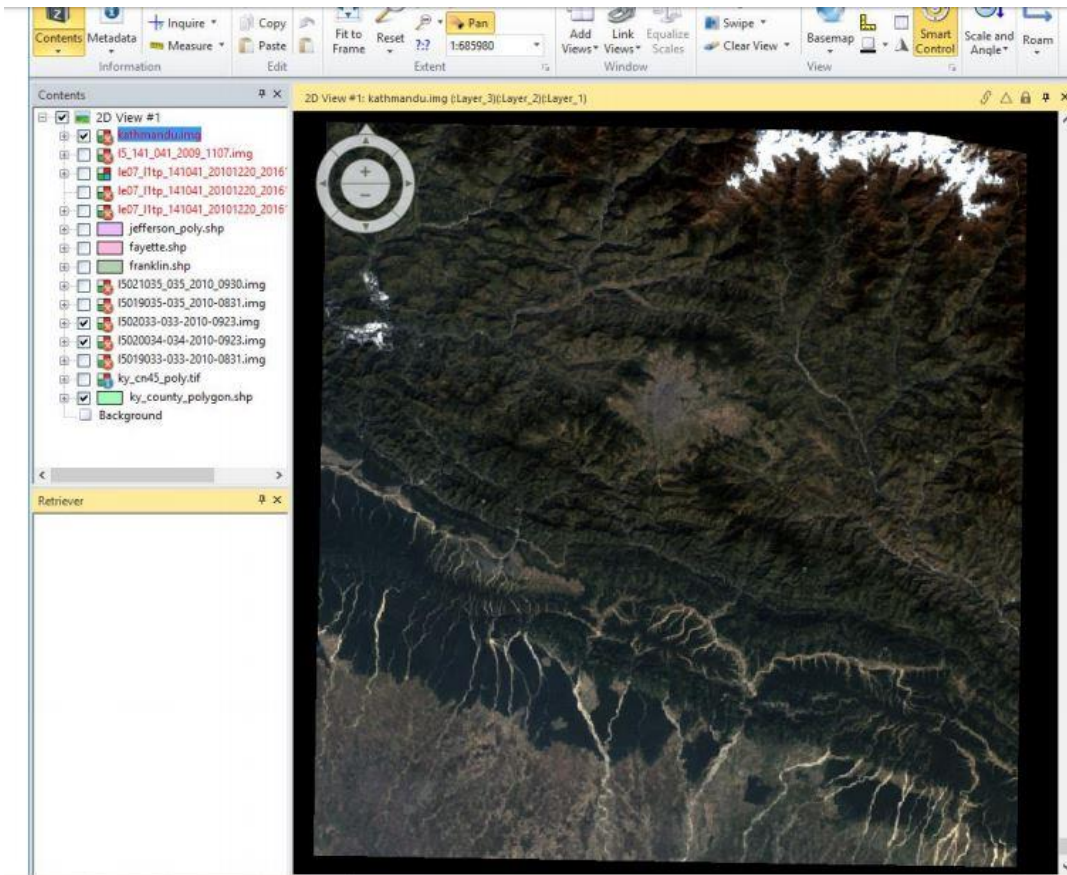
- NEOC (national Emergency Operating Committee) which is governed by ministry of home affairs
- Nepal Police
- Nepal Army
- Armed Police Force
- Other national non governmental organization

PHOTO OF BAGMATI RIVER



Kathmandu
Bagmati River

REMOTE SENSING IMAGE KATHMANDU AND BAGMATI RIVER



Remote Sensing Image
Kathmandu & Bagmati River
Natural Color

CONSIDERATION IN FLOOD DISASTER MANAGEMENT USE OF SPACE TECHNOLOGY

- Considering a mechanism for flood monitoring & warning
- Considering of application of previous experiences
- Considering a center of rapid warning reaction
- Consideration of a continuous prediction and warning management training
- Making well communication and advance technology with local and international organization

In Nepal it will be good to have remote sensing program with following issues put together

Application : meteorology , geology planning

Overlapping need based multistage imagery by season and location

Developing network of sample plots for various uses and location

Continuous process of application, evaluation and innovation

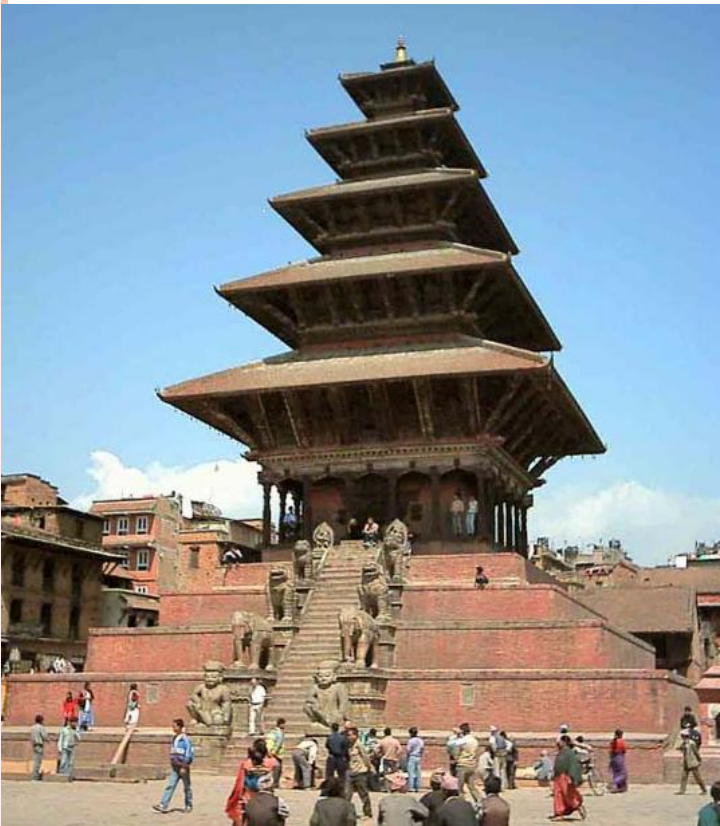
BENEFITS OF SPACE TECHNOLOGY IN FLOOD DISASTER MANAGEMENT

- Flood monitoring
- Damage assessment
- Mitigation
- Recovery in facts

CONCLUSION

- Space technology can help in disaster identification
- Response prioritization
- To find out damage assessment
- River course changes and identification of vulnerable zone
- Satellite images can be the best source of critical information

Thank you



DHANYABAD