

2<sup>nd</sup> High Level Forum on Global Geospatial Information Management, Qatar  
National Convention Centre, Doha, Qatar,  
4 -6 February, 2013

# Towards National Geographic Information System in Nepal

Krishna Raj B.C.

Joint Secretary

**Ministry of Land Reform and Management, Nepal**

4 February, 2013

Email: [krishnabc@hotmail.com](mailto:krishnabc@hotmail.com)



# Presentation Outline

- The Country Context
- NGIS initiatives in Nepal
- Major Geospatial Information Producers in Nepal
- Geospatial Information in Nepal
- Driving Forces for NGIS
- Few success stories
- Challenges
- Conclusion

# Nepal



Nepal, the Federal Democratic Republic Country nestled between India & China rests at the foot of the mighty Himalayas.

# Nepal... Home of Mount Everest



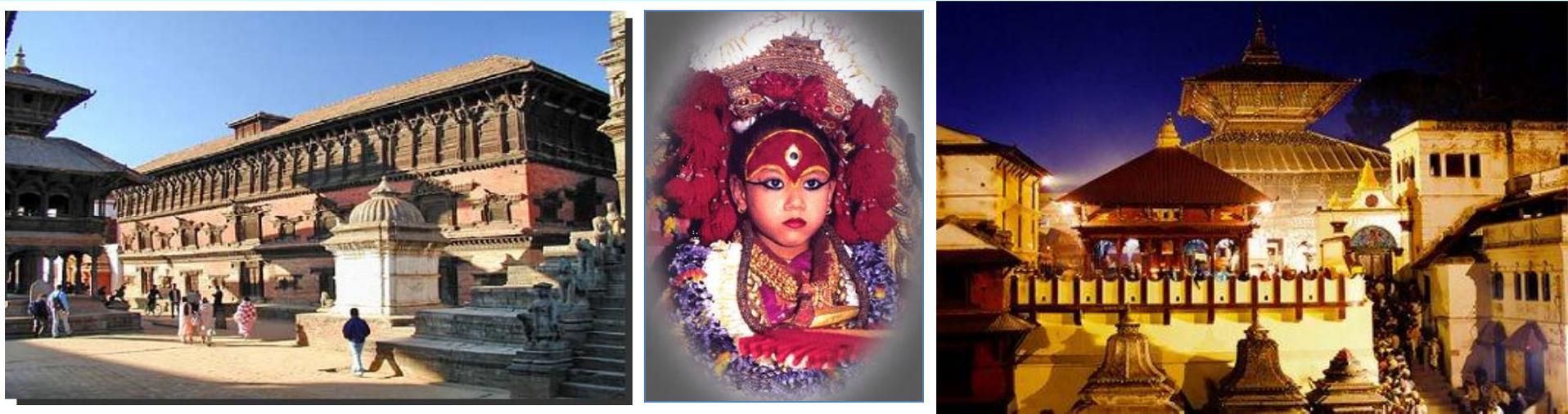
Nepal is home to some of the world's highest mountain peaks, including Mt. Everest (8848 meters)

# Nepal... Home of Buddha



Lumbini- Birthplace of Buddha

# Kathmandu, the Capital... is the city of Temples



Kathmandu is the home to living goddess “Kumari”, city of the temples, city of the festivals, city of the traditional architecture and famous for the world’s heritage sites.

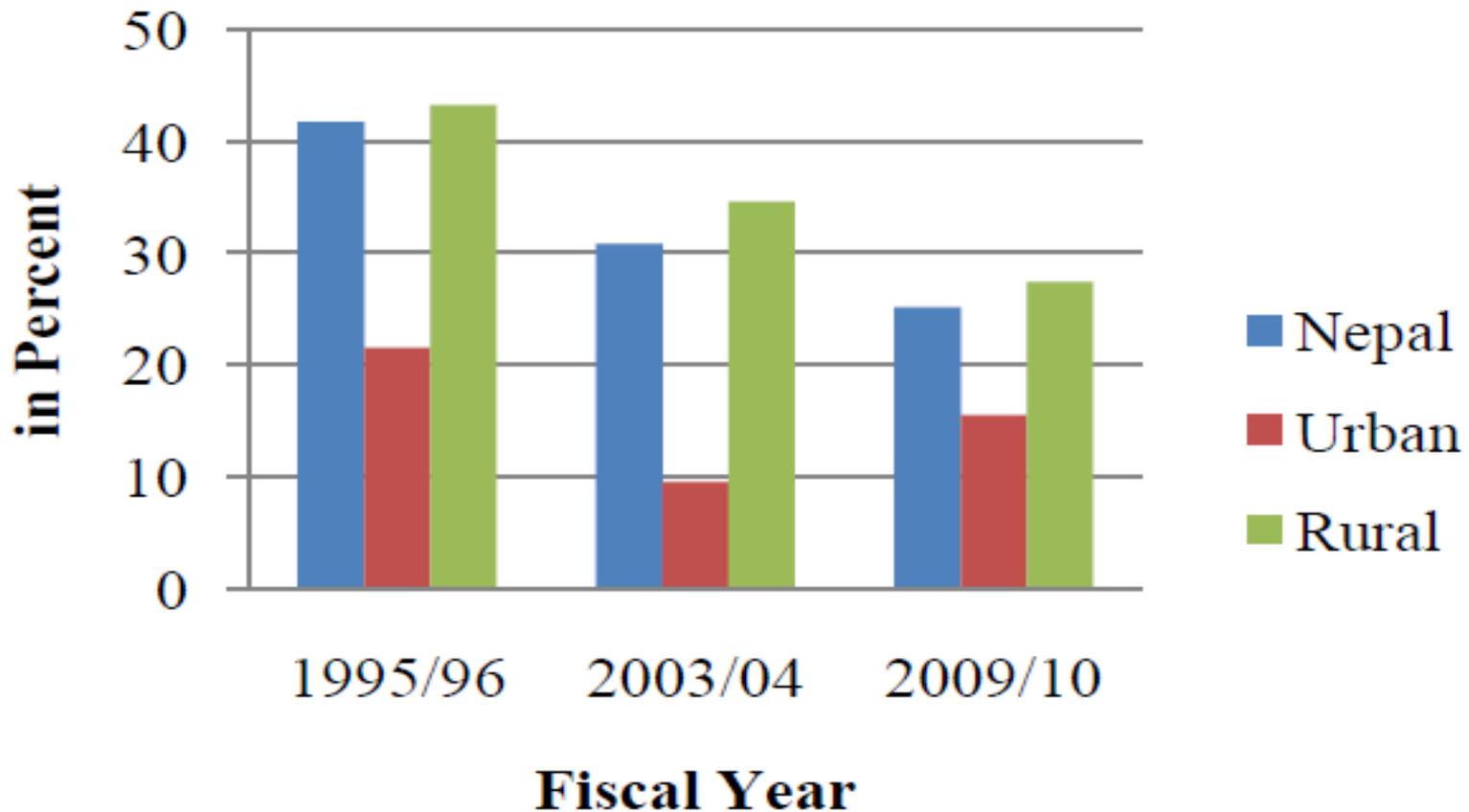


# Nepal.....Heavenly country side



# Nepal.. Poverty Measure Index

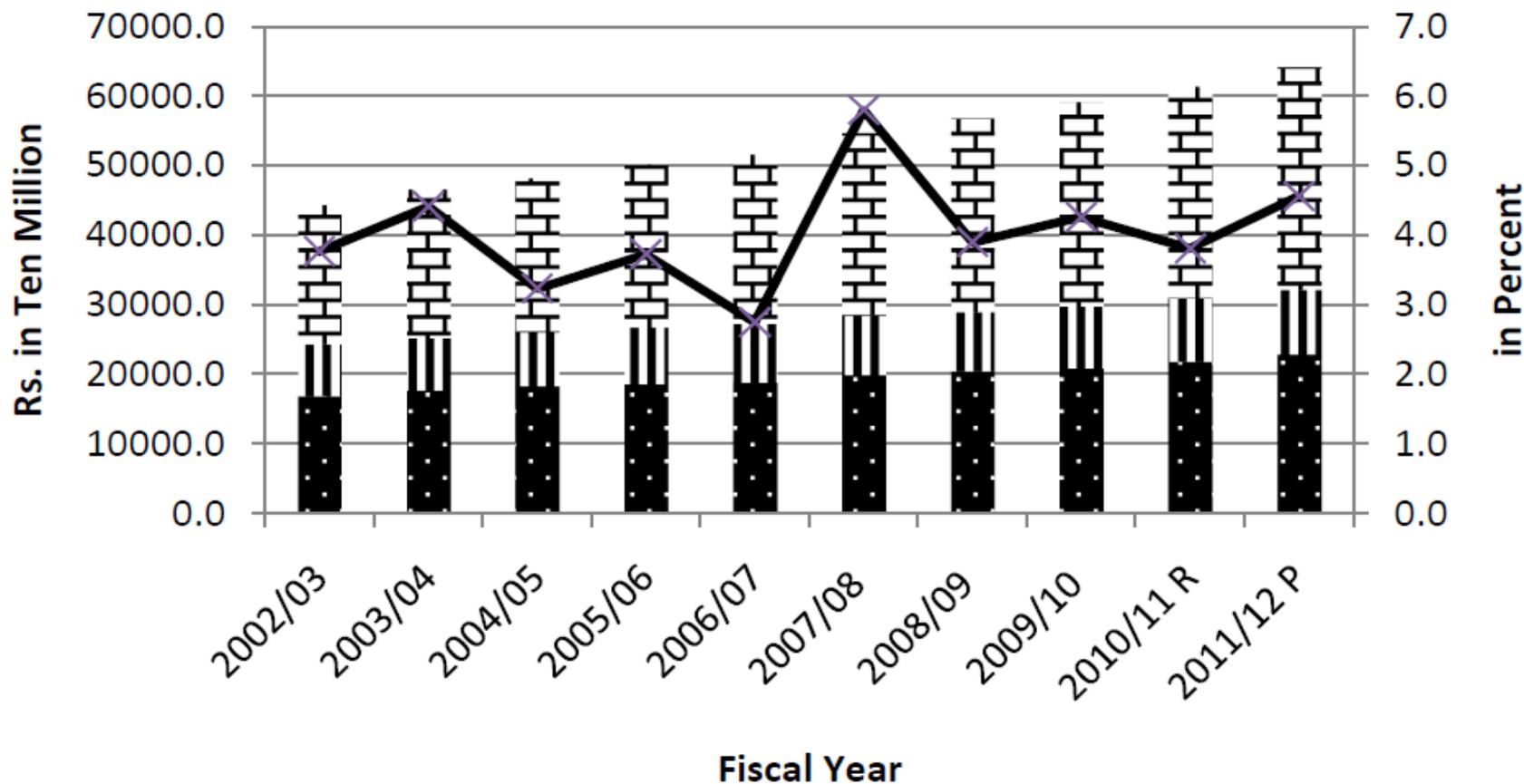
**Chart 7 (a) : Poverty Measure Index**



*Source: Central Bureau of Statistics*

# Nepal..Economic Growth rate

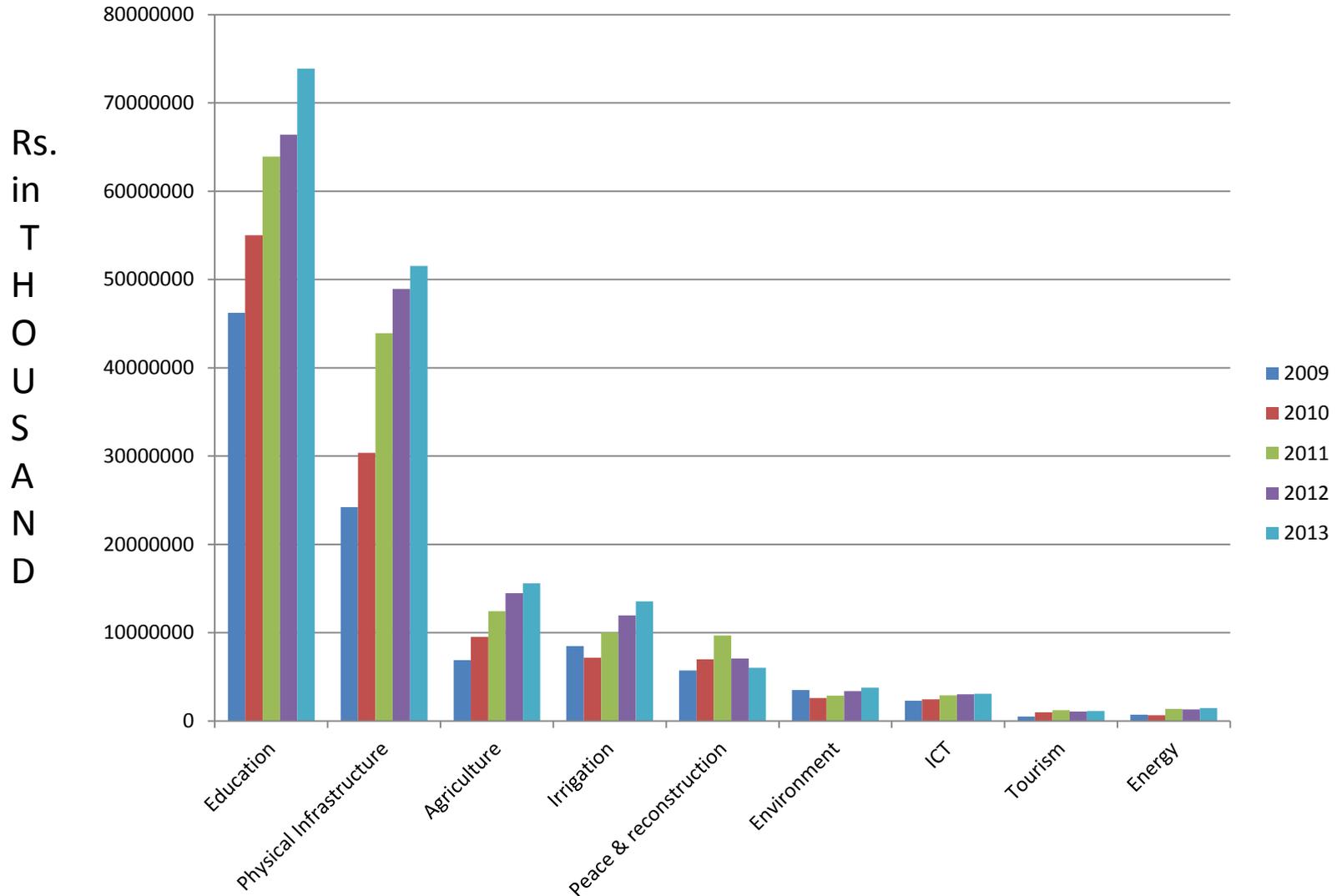
Chart 1 (a): Sectorwise GDP & Growth Rate



Agriculture
  Industrial
  Service
  Growth rate

Source: Central bureau of statistics

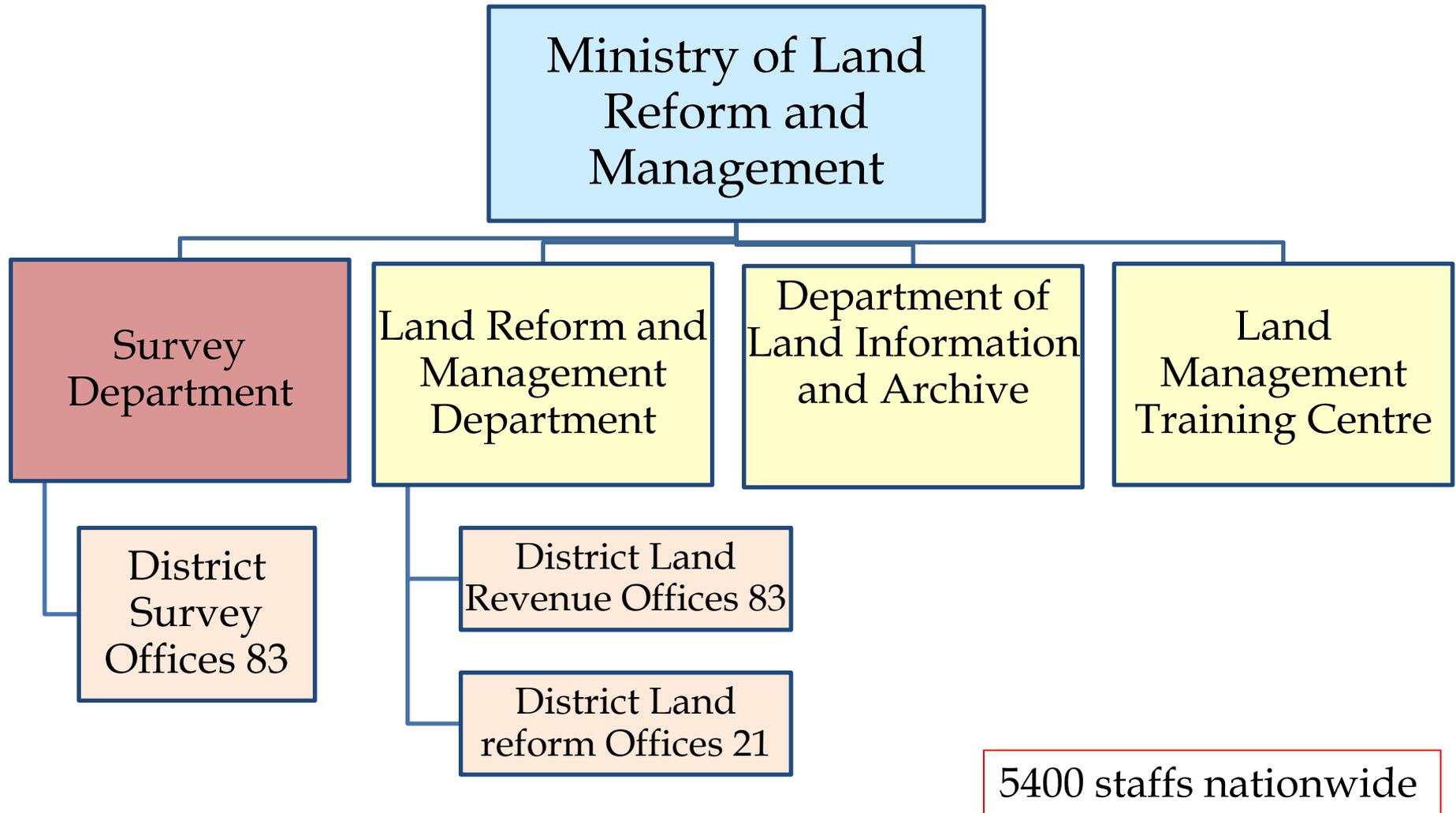
# Nepal.. Investment scenario (2009-2013) and Govt. Prioritized sector



Source: Ministry of Finance

# Ministry of Land Reform and Management..

## Organizational Structure



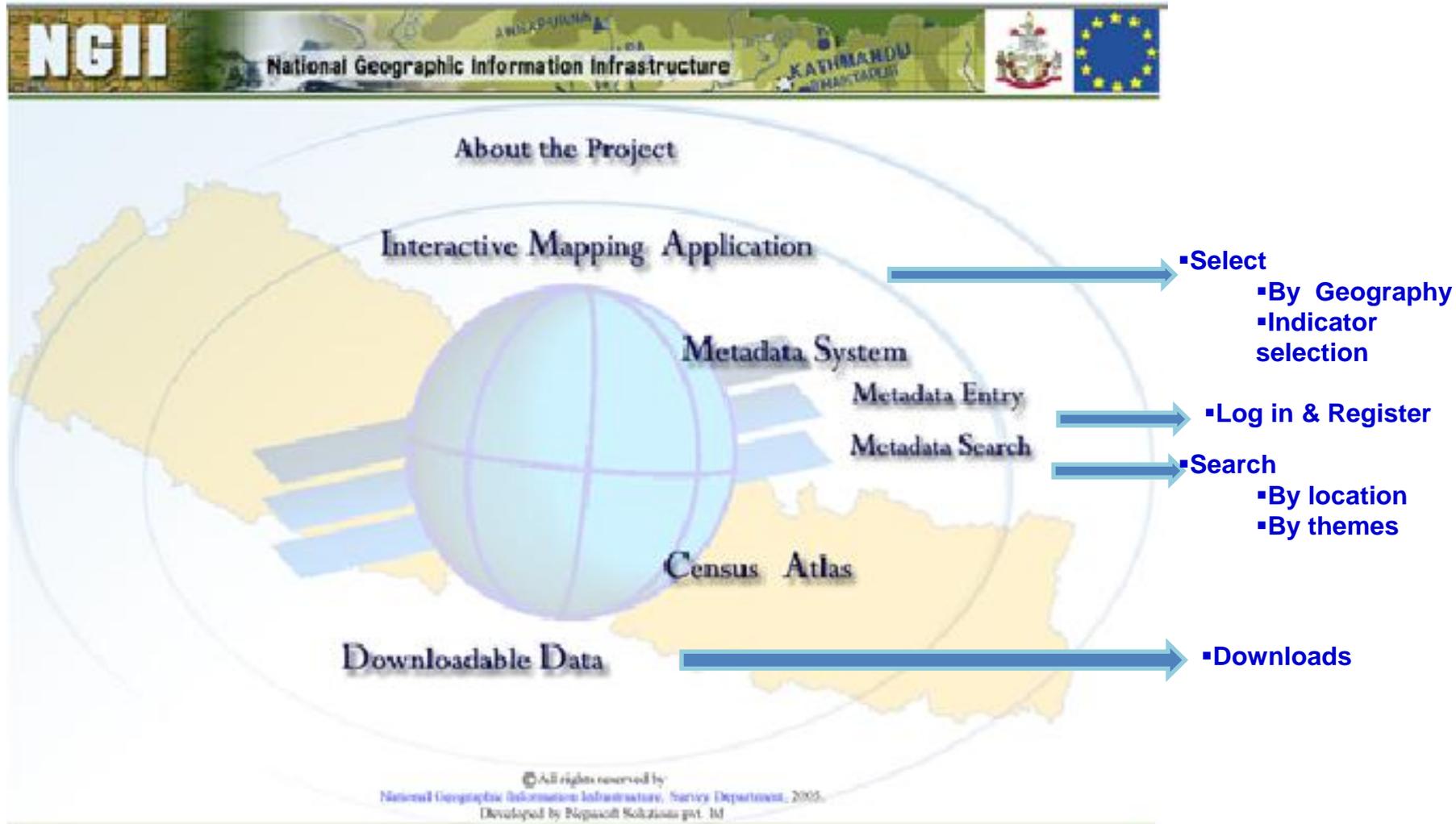
# NGIS initiative in Nepal

- National Geographic Information Infrastructure Project (NGIIP), as an NSDI initiative, established in 2000
- NGII was envisioned as a way of enhancing the accessibility, communication, and use of geospatial information through adoption of a common architecture and best practices to support a wide variety of decisions at all levels of society.
- For better planning and policy making, effective mobilization of resources and making geospatial information sharable by maintaining consistency and standards in the country

# NGIS initiative in Nepal..

- Survey Department (NMO) is the nodal agency for developing NSDI.
- Efforts are underway in its development and expansion.
- LIS is under development
  - Open Source Based System is also being developed
- Cadastral Information System
  - Being Transformed to Digital System

# NGII portal.. access to Geospatial information



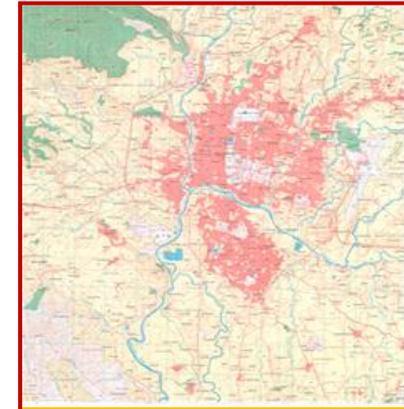
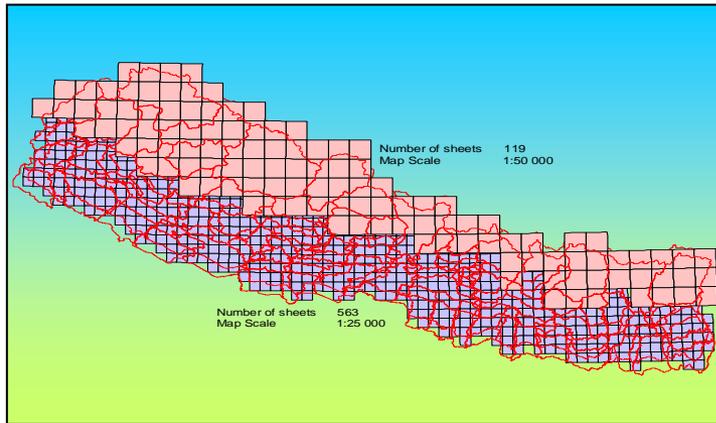
# Major Geospatial Information Producers in Nepal

- Government Organizations
  - Survey Department, the National Mapping Organization
  - National Land Use Project
  - Forest Resource Mapping Project
  - Department of Urban Development and Building Construction
  - among others
- Private Sector
- NGOs/INGOs
  - ICIMOD
  - WWF Nepal
  - IUCN

# Geospatial Information in Nepal

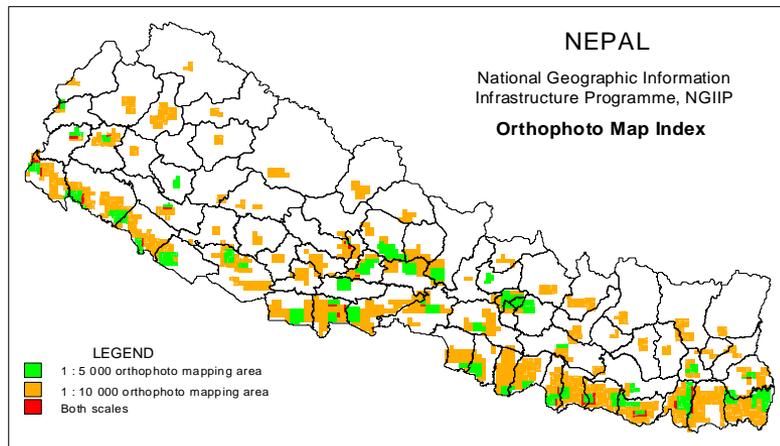
## 1. SERIES OF NATIONAL TOPOGRAPHICAL MAPS/ DATABASE

- Terai and Middle hills (scale 1:25000)
- High hills and Himalayas (scale 1:50000)



a topographical map sheet

## 2. ORTHO-PHOTO MAPS /AERIAL PHOTOGRAPHS

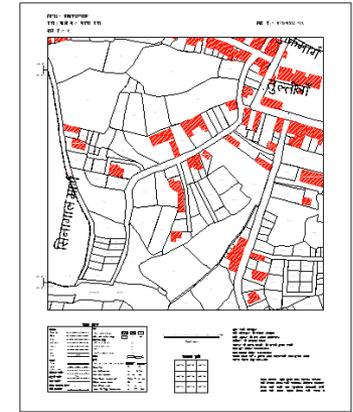
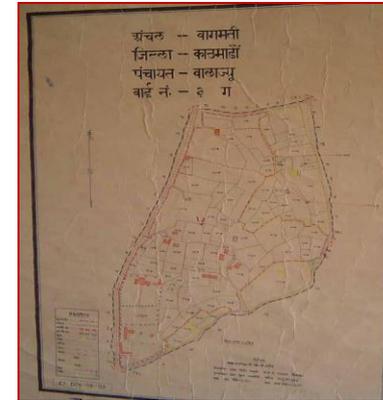
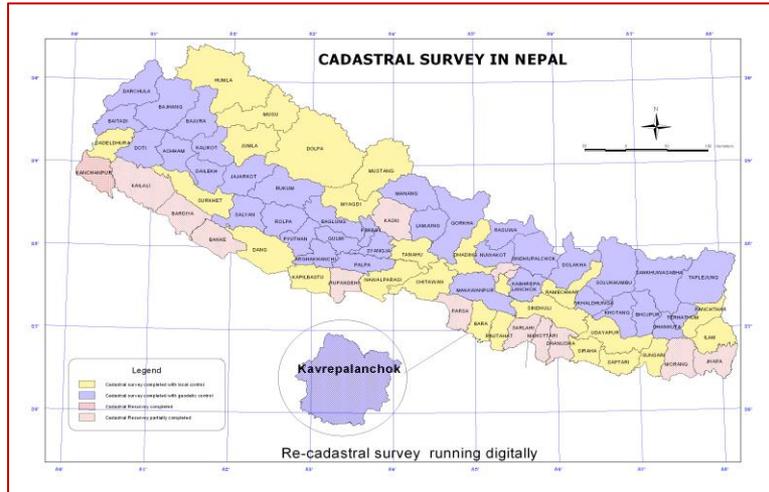


a Ortho photo map sheet

# Geospatial Information in Nepal ..

## 3. CADASTRAL MAPS THROUGH THE COUNTRY

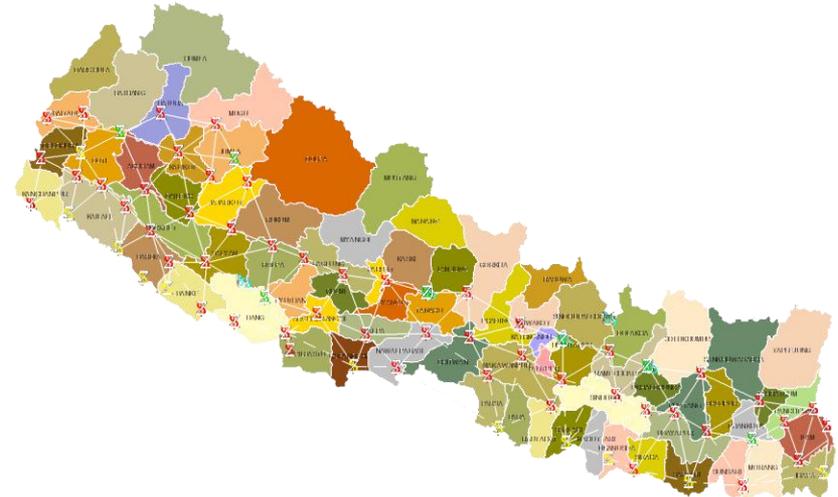
- Digitization and database development in 53 survey Offices is being done



a cadastral map sheet (paper map/digital)

## 4. NATIONWIDE COVERAGE OF GEODETIC CONTROL NETWORKS

- HORIZONTAL
- VERTICAL
- AIRBORNE GRAVITY



# Geospatial Information in Nepal..

## 5. DIGITAL ELEVATION MODEL

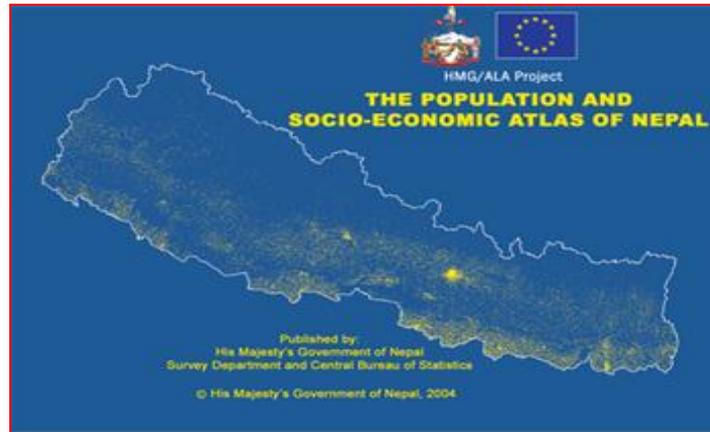


## 6. NATIONWIDE COVERAGE OF LAND RESOURCE MAPS/DATABASE

- LAND USE MAPS
- LAND CAPABILITY MAPS
- LAND SUITABILITY MAPS
- SOIL MAPS

# Geospatial Information in Nepal..

## 7. SOCIO ECONOMIC ATLAS BASED ON POPULATION CENSUS 2001



## 8. THEMATIC MAPS

- ADMINISTRATIVE MAPS
- GEOLOGICAL MAPS
- PHYSIOLOGICAL MAPS

## 9. GEOGRAPHICAL NAMES

# Driving Forces

- Development Activities
- Increasing user demand
- Societal Transformation - Spatially Enabled Society / Government
- Spatially enabled decision and policy making

# Success Stories

Nepal as being a land locked and mountainous country having altitude from 60m to 8848m. Geospatial data capturing is always being challenging. In this context;

- National Topographic Maps and Database- widely used by the professional communities
- Nationwide coverage of cadastre-widely used by public
- Geodetic Control Network throughout the country
- Land Information System
  - Solution on Land Administration (SOLA) Piloting
    - aims to provide support for a more comprehensive range of district survey and land administration office functions

# Challenges

- Technology Transformation
- Update-ness of the data
- Maintaining Consistencies and Standards of the data produced by various entities of the government and private sector
- Capacity Development
- Government Investment
- Availability of Infrastructure

# Conclusion

- Spatially enabled planning and decision making practices are growing in recent years
- Fully developed NGIS is required, efforts are put in this line, however, NGIS is still immature in the country
- Prevailing challenges have to be resolved for the betterment and advancement in NGIS

Thank You For Your  
Attention