



**UNRCC**

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# **“Challenges and Potentials of Place Based Information Management in Nepal”**

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# Presentation Outline

- The Country Context
- Geospatial Information Management: Changing roles
- Place based information.. Why it matters?
- Survey Department and its role
- Prevailing Geospatial Information Management Policy
- Challenges
- Opportunities
- 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).

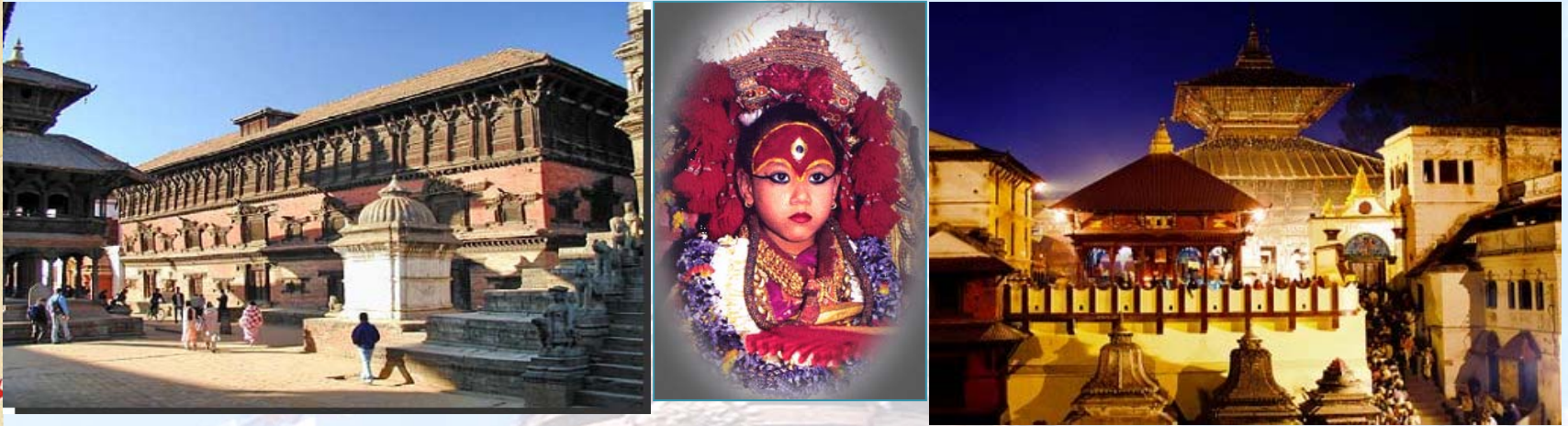


# Nepal... Home of Buddha



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 including Swambhunath and Bhaktapur Durbar Square .

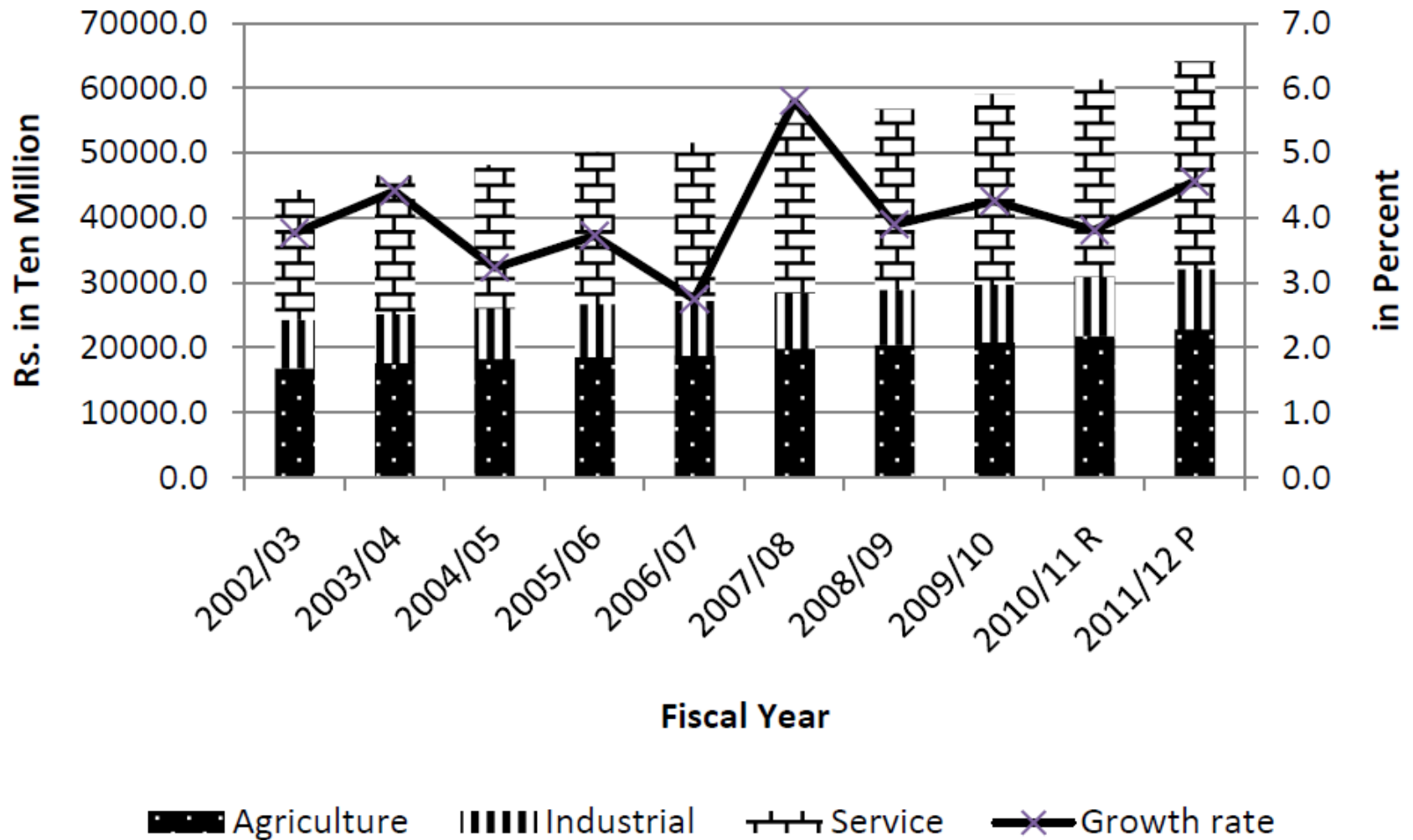


# Nepal.....Heavenly country side



# Nepal...Economic Growth rate

Chart 1 (a): Sectorwise GDP & Growth Rate

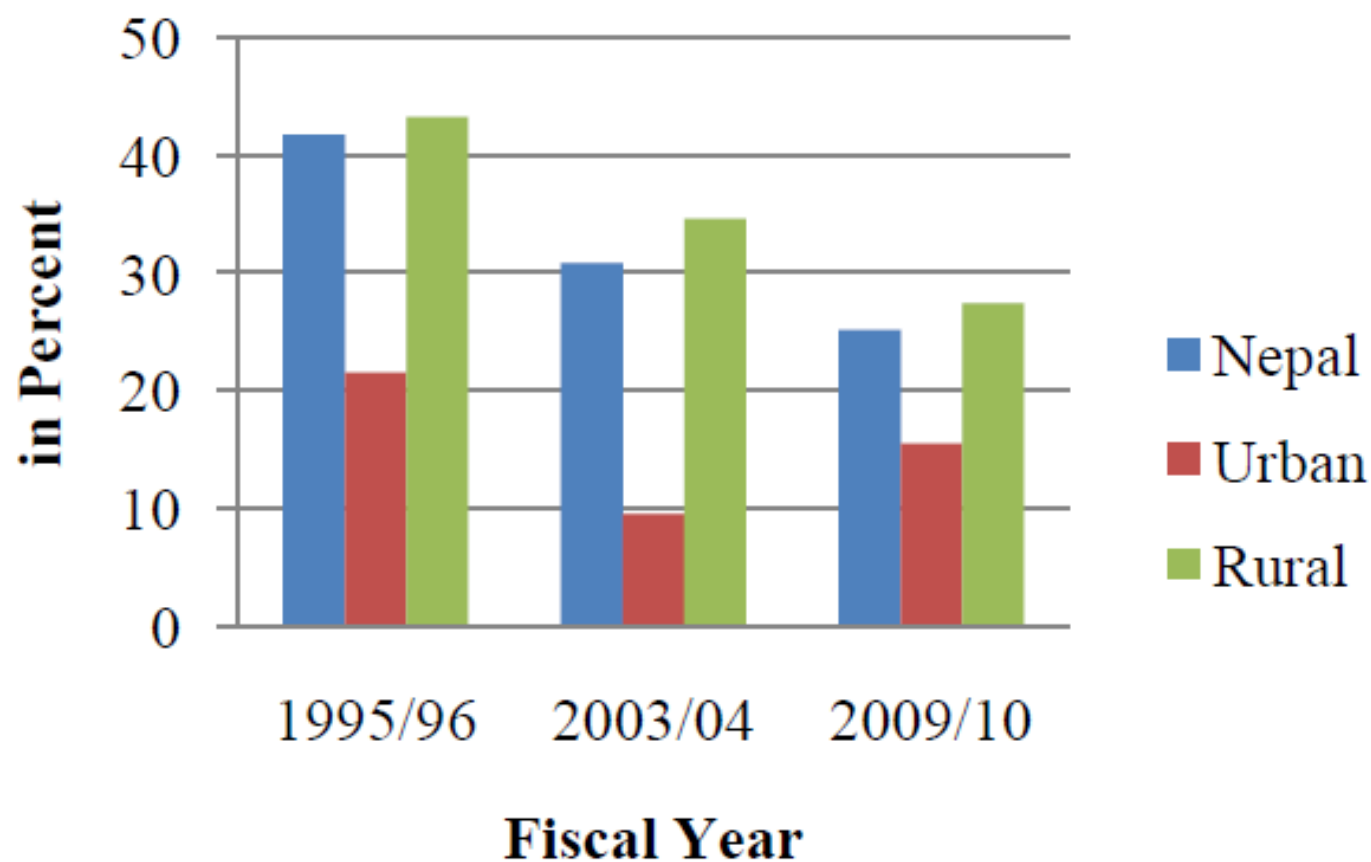


Source: Central bureau of statistics



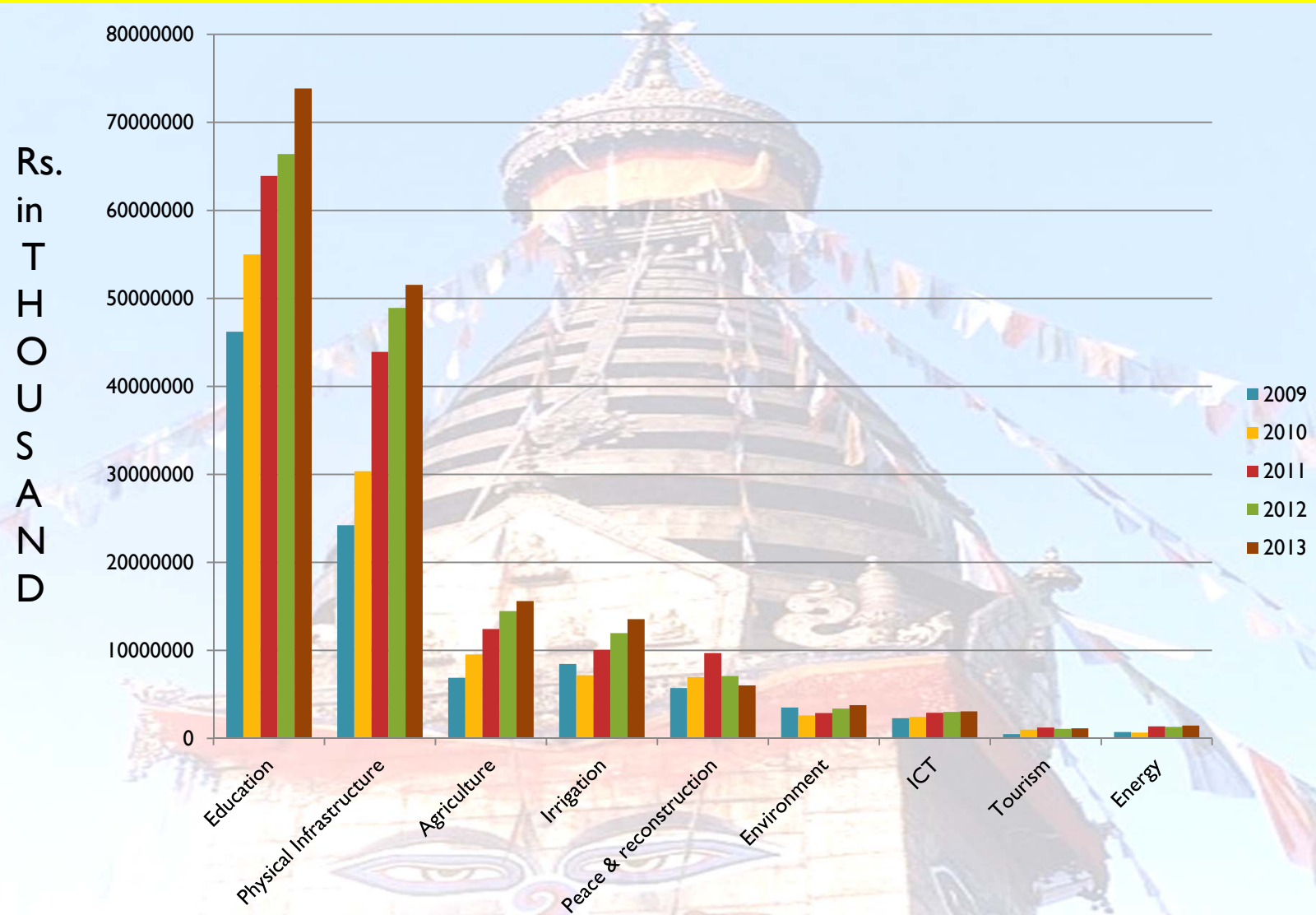
# Nepal.. Poverty Index

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



*Source: Central Bureau of Statistics*

# Nepal.. Investment scenario (2009-2013)



Source: Ministry of Finance



# Geospatial information Management..

## Changing roles

### Changing roles:

National Mapping and Cadastral Agency  
National Geospatial Authority  
National SDI  
....

### Creating

- Challenges for NMAs
- Growing capabilities of private sectors in geospatial information development and location based services
- Opportunity for Geospatial business

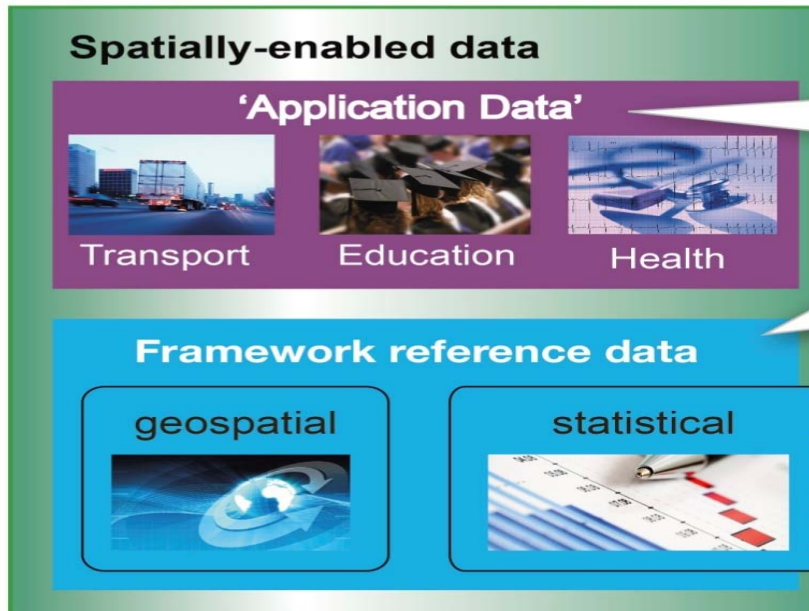
- Rapid advancement in Geospatial technology
- Business model is changing:
  - The value of geospatial information is more widely recognizing
  - Customers are demanding more diversified products
  - Customers are demanding greater access to the geospatial data.

### ▪ Collaboration and sharing

- For effective use and management of geospatial information and place based information to solve geographic problems in a smart way.



# Place based information.. Why it matters?



Spatial box with definitions: (Source: Lawrence, 2011)

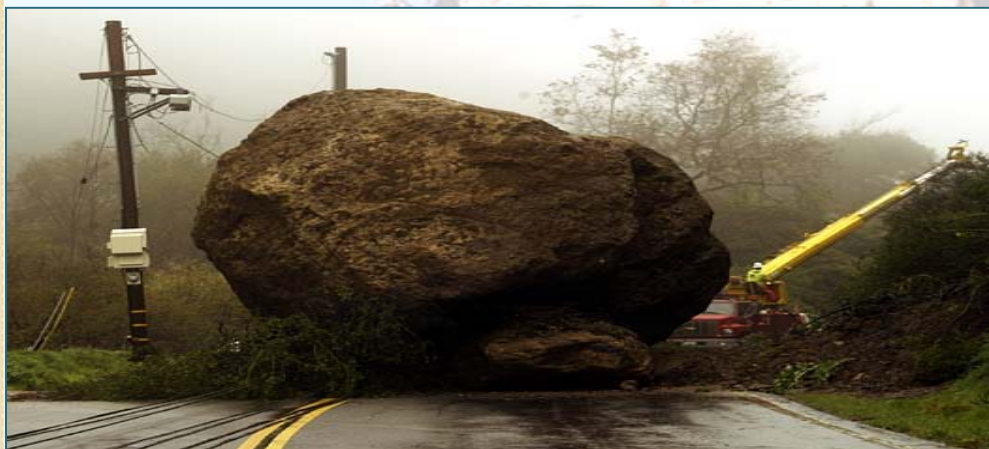
## Place-based data

Data relating to a locality which is created and used for specific purposes

Definitive public data which is maintained and published in order to fulfil a variety of uses and applications

Not all statistical data is spatially-enabled

## Framework/ Fundamental Data



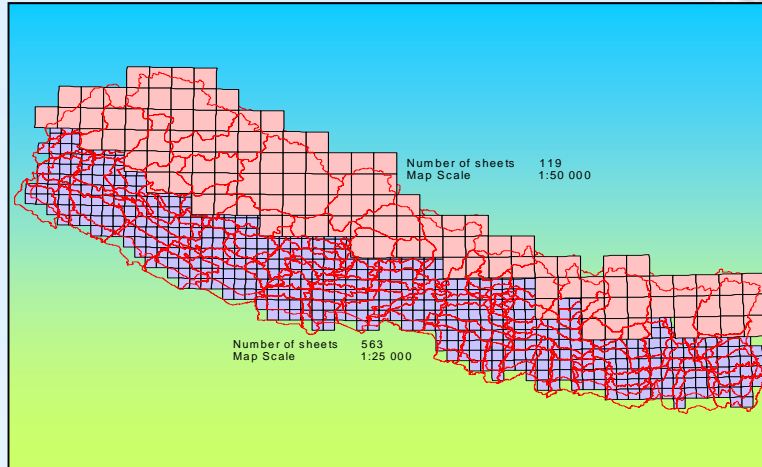
Such place based information are more useful to understand where problems are and how to provide a quick response?

# Survey Department .. National Mapping Agency

- National Mapping Agency
  - Regulating, Monitoring and Coordinating Mapping and Geospatial information activities in the country
- About 2,480 permanent staff nationwide
- Topographical Surveying Activities
- Geodetic Surveying Activities
- Cadastral Surveying Activities
  - First Registration / Cadastral Resurveying
- International Boundary Surveys and Maintenance

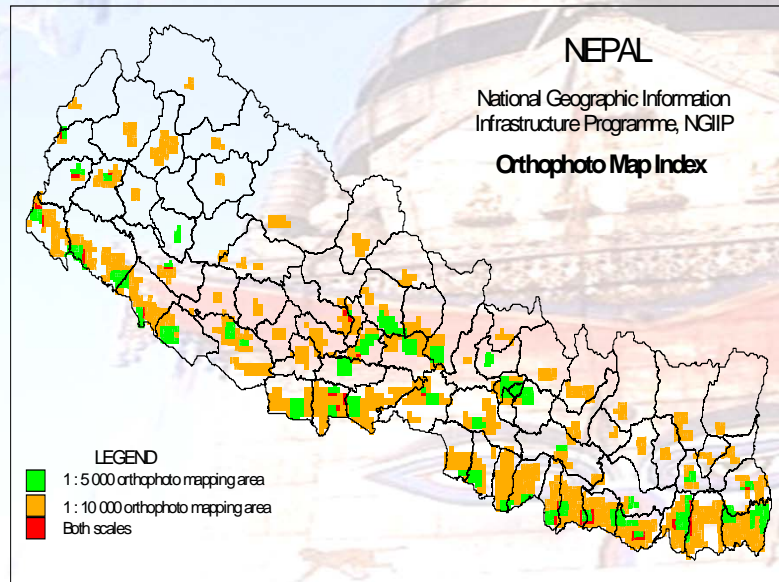
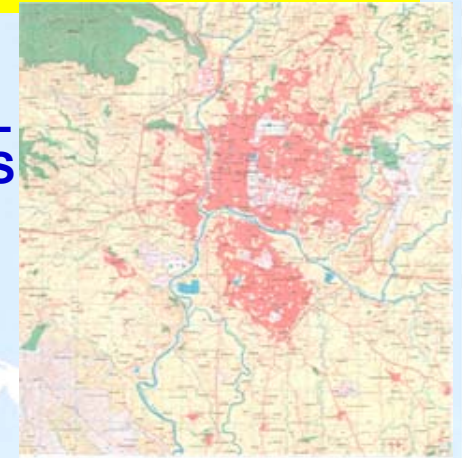


# Survey Department.. available datasets



## NATIONAL TOPOGRAPHICAL DATABASE /MAPS

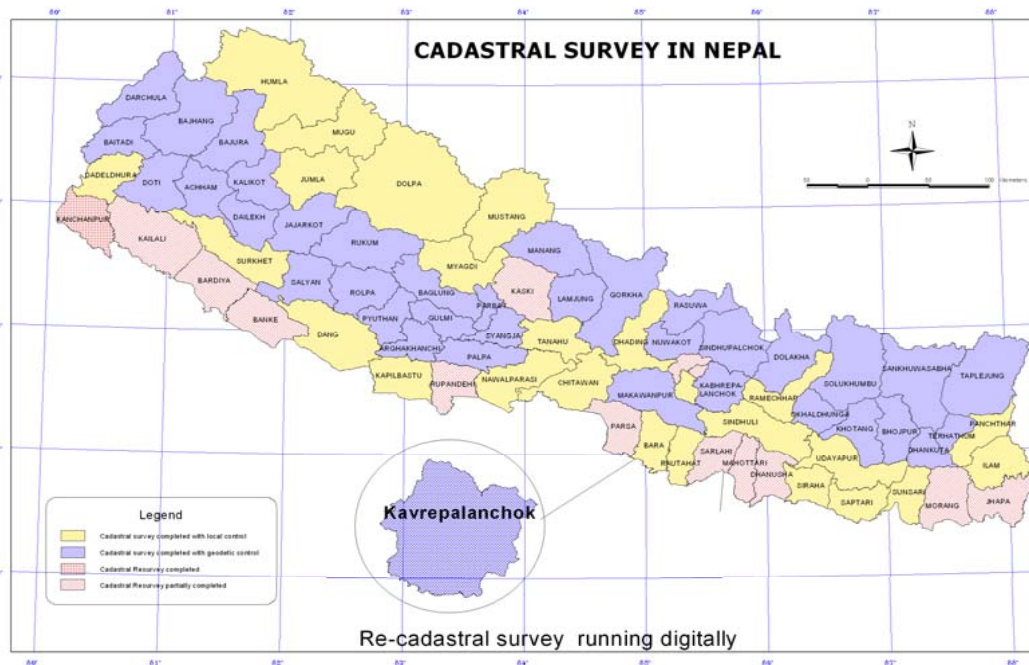
- Terai and Middle hills (scale 1:25000)
- High hills and Himalayas (scale 1:50000)



## ORTHO-PHOTO MAPS /AERIAL PHOTOGRAPHS



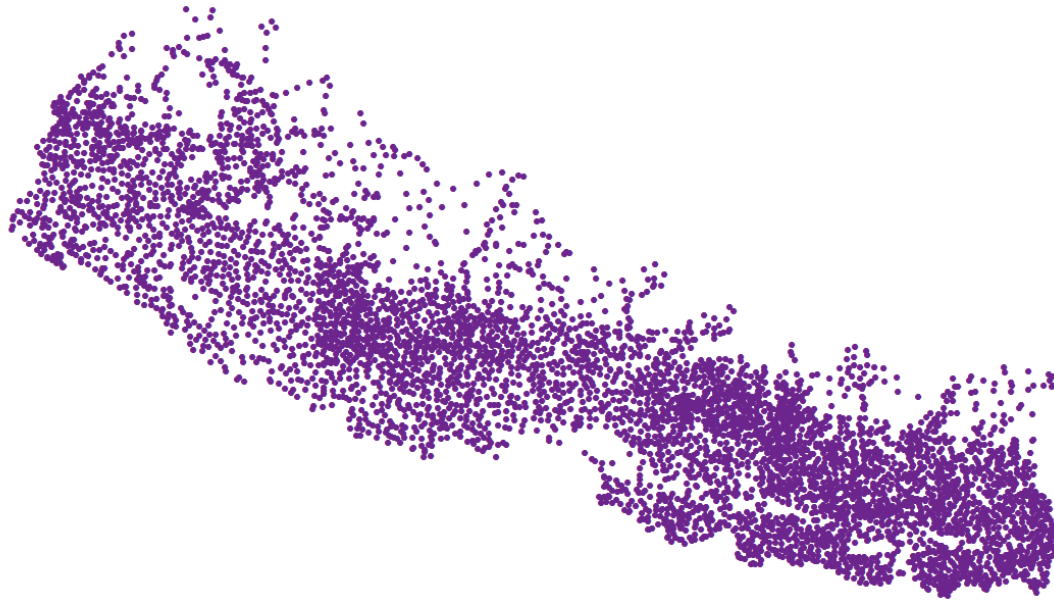
# Survey Department.. available datasets



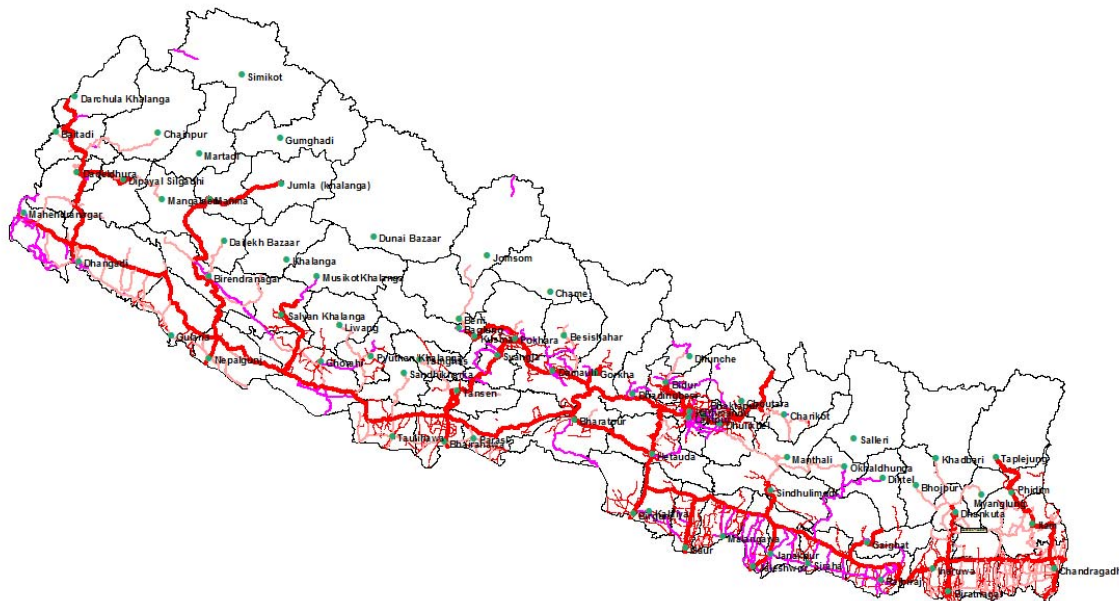
**NATIONWIDE COVERAGE OF CADASTRAL MAP**



# Survey Department.. available datasets



**SETTLEMENT  
DATABASE**

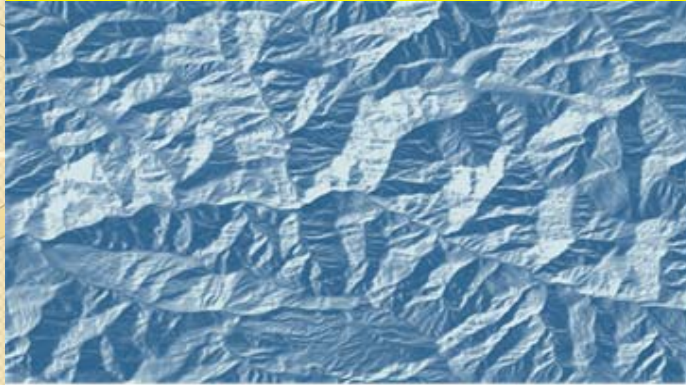


**ROAD NETWORK  
DATABASE**

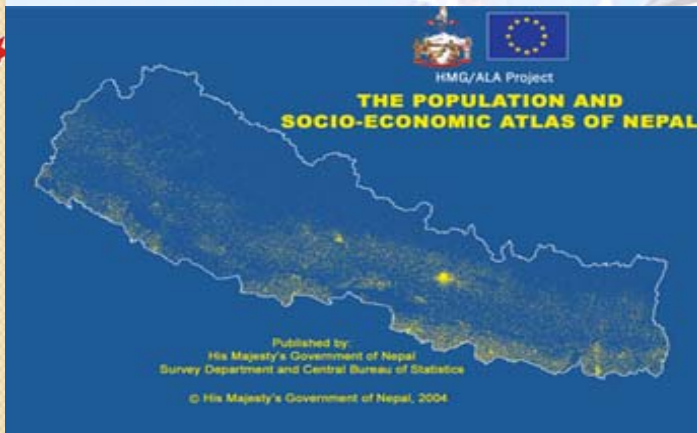




# Survey Department.. available datasets



**DIGITAL  
ELEVATION MODEL**



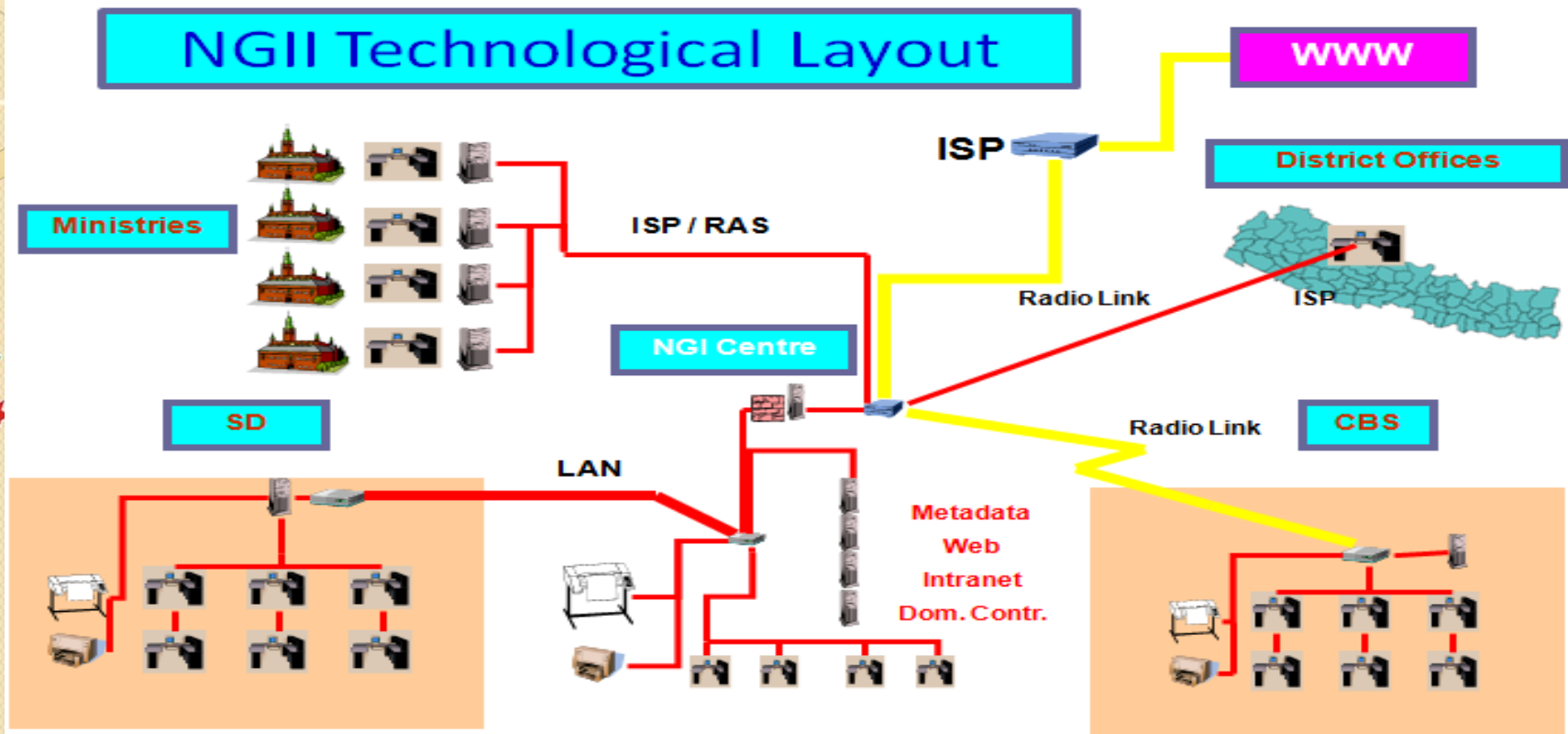
**SOCIO ECONOMIC  
ATLAS**

- **NATIONWIDE COVERAGE OF GEODETIC CONTROL NETWORKS**
  - HORIZONTAL,
  - VERTICAL,
  - AIRBORNE GRAVITY

- **LAND RESOURCE MAPS**
- **ADMINISTRATIVE MAPS**
- **GEOLOGICAL MAPS**
- **SOIL MAPS**
- **PHYSIOLOGICAL MAPS**
- **GEOGRAPHICAL NAMES**



# Survey Department.. Nodal Agency for NSDI



- National Geographic Information Infrastructure (NGII) has been established under NMO in 2000 and making its continued effort is establishing functional NSDI.
- Working in the direction of establishing data sharing mechanism.

# NGII portal.. access to Geospatial information



About the Project

Interactive Mapping Application

Metadata System

Metadata Entry

Metadata Search

Census Atlas

Downloadable Data

- Select
  - By Geography
  - Indicator selection
- Log in & Register
- Search
  - By location
  - By themes
- Downloads

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National Geographic Information Infrastructure, Survey Department, 2005.  
Developed by Nepalsoft Solutions Pvt. Ltd



# Survey Department.. as a regulatory body

- The Department is gradually changing its role of providing surveying and mapping services in the country to assuming a lead role in regulating the national surveying and mapping , and geospatial activities.
  - Any geospatial information produced with public fund should be based on the standard and specifications set by the Survey Department
  - Any geospatial information produced by any public or private organization should be approved by National Mapping Committee/ technical sub committee constituted under the National Mapping Committee.



## Prevailing Geospatial Information Management Policy..

- No integrated Policy for geospatial information management,
- Pricing policy
  - Every data is charged but the price is determined case by case and agency by agency
  - Free of charge only with the government's cabinet decision even for a public organization
- No data restriction except that of international boundary .
- Human Resource Development policy
  - Land Management Training Center (a public organization)
  - Kathmandu University for undergraduate (BE Geomatics ) course
  - Tribhuwan University has recently started undergraduate (BE Geomatics )



# Emerging Trend – third sector production of placed-information

**OpenStreetMap**  
The Free Wiki World Map

Search

examples: 'Alkmaar', 'Regent Street, Cambridge', 'GB2 5AQ', or 'post offices near Lünen' [more examples...](#) [Where am I?](#)

OpenStreetMap is a free worldwide map, created by people like you.  
The data is free to [download](#) and [use](#) under its [open license](#).  
Create a user account to improve the map.

**Help**  
[Help Centre](#)  
[Documentation](#)  
[Copyright & License](#)

**Community**  
[Community Blogs](#)  
[Foundation](#)  
[User Diaries](#)

**GPS Traces**  
**Map Key**

[Make a Donation](#)

log in | sign up

Standard

Permalink Shortlink

- Citizens' excitement in the production and use of place based information
- OpenStreetMap is more detailed than any other source available in Nepal
- Also creates issues such as privacy, data quality, standardization
- Closely observing this new trend and this new trend has policy implication.

# Challenges

- Updating of Framework and geospatial datasets to fulfill the customers need.
- Creating Policy/ Political awareness to the change process and the deeper utilization of Geo-ICTs policy in decision making.
- Capacity and capability development
  - Institutional (physical and technological infrastructure )
  - Human capacity and professional development



# Opportunities

- Nepal is in political transition, use of place-based information for restructuring and demarcation of federal states in terms of economic and geographic sustainability.
- Agriculture sector plays a critical role in the economy as this sector contributes about one third to GDP, and two-third of its population depend on it for their employment and livelihood, the place-based information will greatly help.
- Nepal is rich in cultural heritage, natural beauty, thus effective use of place based information will greatly help to promote tourism.
- Huge potentiality of hydropower and thus place based information will be useful to national development economic growth of the country.
- Land slides and Flooding is very common, thus place based information will greatly help in disaster management.





# Conclusion

- Nepal is still at an early stage of place based information management.
- Changing role of the Government and advancement in ICT and spatial technologies is leading towards public-private partnership for better geospatial information management.
- Government's emphasis on e-government development, Growing awareness to use of geospatial information in planning and decision making process and will greatly help in the promotion of tourism, hydro power etc for the future economic and sustainable development of the nation.
- Technology transfer with Capacity and professional development in terms of individual and institutional are the key phenomena for optimizing the place based information management.





**Thank You For Your Attention**