

# Earthquake Risk Reduction and Recovery Preparedness Programme for Nepal (UNDP/ERRRP Project:NEP/07/010)



Presented By

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Presented on

National Symposium on Building Code Implementation System

Jointly Organized By

DUDBC, ERRRP-UNDP, UNCRD, NSET

24th. May, 2008 : Kathmandu

# Project Design

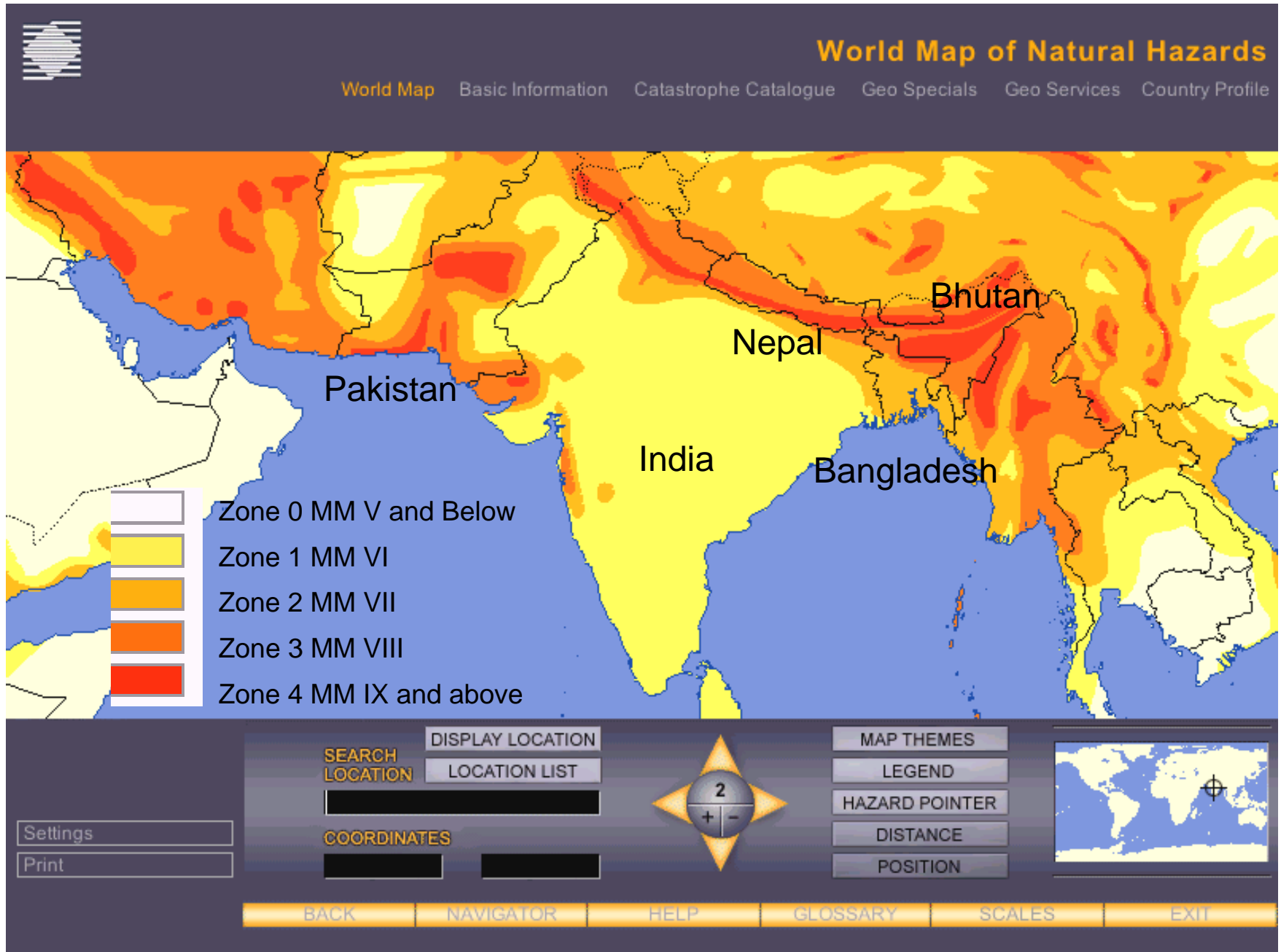
The program is designed in the context of the International Recovery Platform (IRP) for the fulfillment of the Hyogo Framework for Action (HFA) 2005-2015: (*World Conference on Disaster Reduction : Jan. 2005 Kobe, Japan*)

# Project Initiation

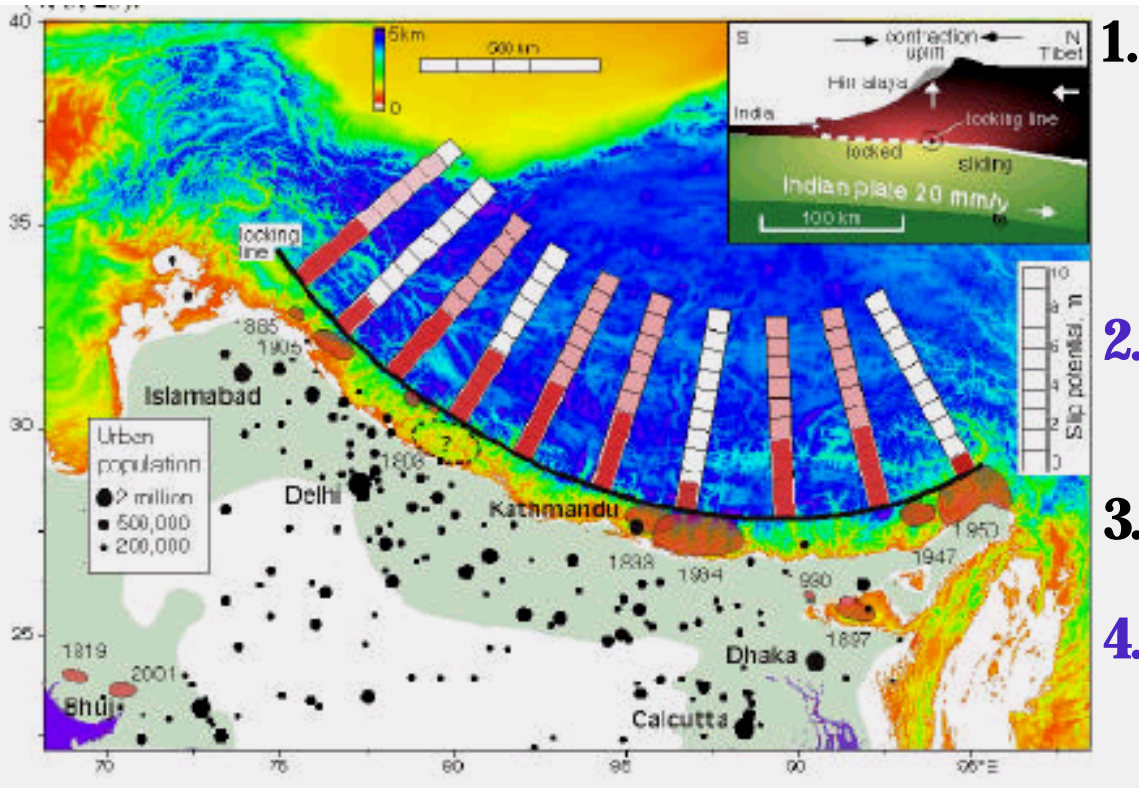
UNDP/BCPR (Bureau of Crisis Prevention and Recovery) with the support of Government of Japan initiated "Earthquake Risk Reduction and Recovery Preparedness (ERRRP) program" in five high risk South Asian countries :

- Nepal
- Bhutan
- Bangladesh
- India
- Pakistan.

# Project is Design for 5 South Asian Countries



# SEISMIC HAZARD OF THE HIMALAYAS: 5 POINTS OF ROGER BILHAM et al



1. Northern edge of Indian subcontinent has been sliding beneath the Himalayas for mil. Years. Requires EQ to happen
2. 4 m of potential slip accumulated every 200 years @ 2 cm/yr
3. This potential slip as elastic strain
4. <45% of Himalayan arc ruptured in major EQ in last 200 years
5. Average slip : few m to 10 m during large EQ

**VERY LARGE EARTHQUAKE (M>8) OVERDUE IN THE HIMALAYAS**

# Project Milestone

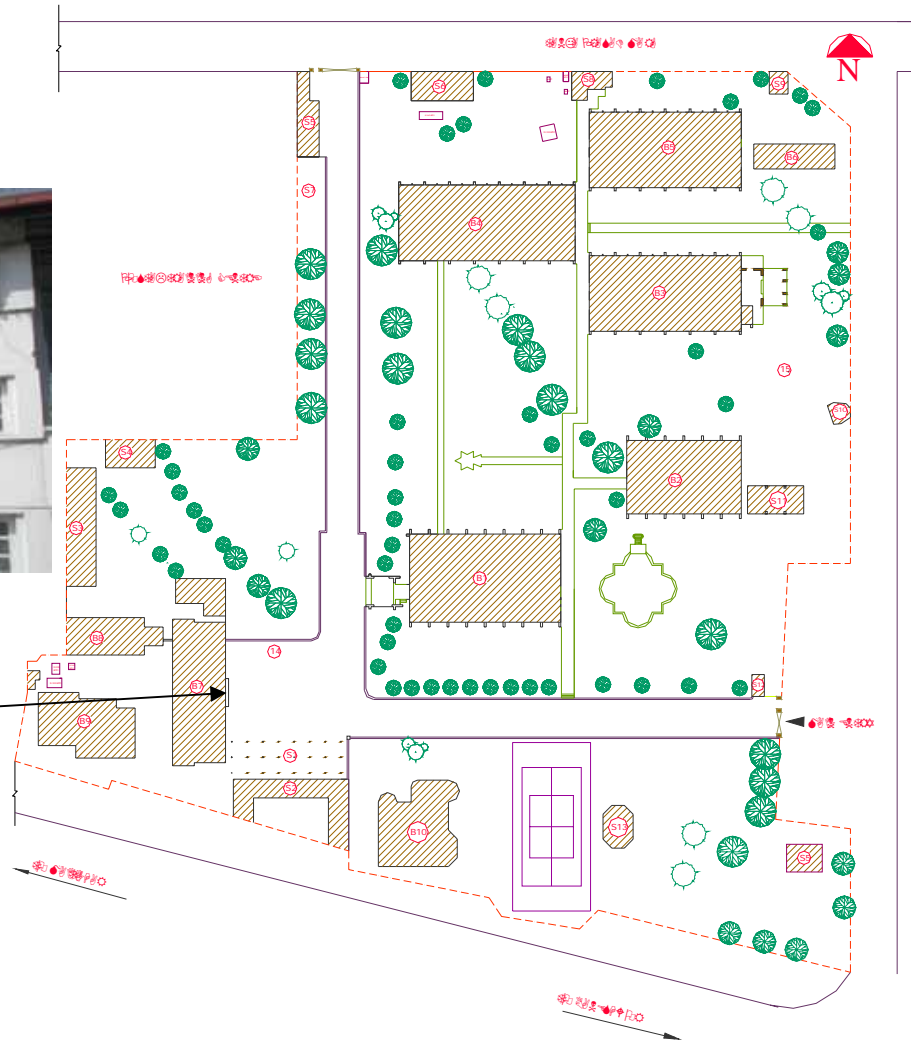
ERRRP Project is a means to enable local governments for systemically implementation of Earthquake Risk Reduction Management

- Project Duration Oct. 2007 to May 2009
- Project Period 2007 to 2010
- Source of Fund: Government of Japan
- Award ID : 00047754-NEP/07/010 (00057599)

## Goal:

*To reduce the impact of potential earthquakes on seismically vulnerable communities in Nepal*

# Project office at DUDBC:



**Project Office**

- The project office is located in the Department of Urban Development and Building Construction (DUDBC) premises, Babar Mahal, Kathmandu.

# Implementing Organizations and it's roles

- **Ministry of Physical Planning and Works (MOPPW)**  
Department of Urban Development and Building Construction (DUDBC) and related Division Offices : **Responsible for the overall implementation of the project**
- **Ministry of Home Affairs:** Responsible for inter-ministerial coordination
- **Ministry of Local Development:** Responsible for inter-municipality coordination as the focal agency
- **Selected Municipalities:** Responsible for the municipality level activities of the project



# Selected municipalities for the project implementation

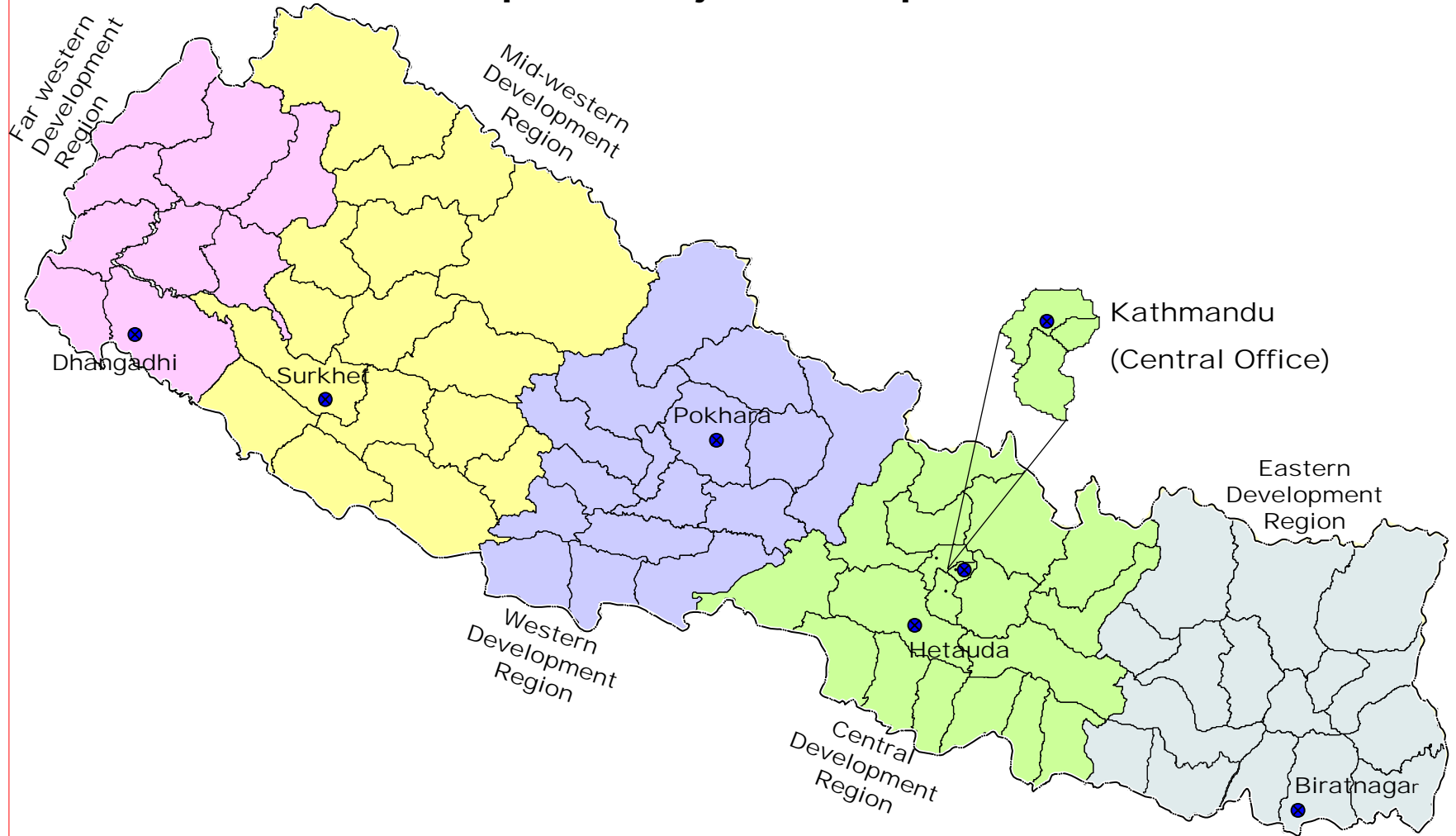
- Central Region Hetauda Municipality
- Eastern Region Biratnagar Sub-metropolitan City
- Western Region Pokhara Sub-Metropolitan City
- Mid-western Region Birendranagar Municipality
- Far-western Region Dhangadhi Municipality

# Municipality Selection Criteria

- One municipality from each of the Development Region
- Municipality located in high vulnerability zone from a seismological perspective
- Municipality with faster population growth and higher urban density
- Municipality possessing demonstrative effect for replication of the project results

# Earthquake Risk Reduction and Recovery Preparedness Programme for Nepal

## Proposed Project Municipalities



Scale 1:3,500,000

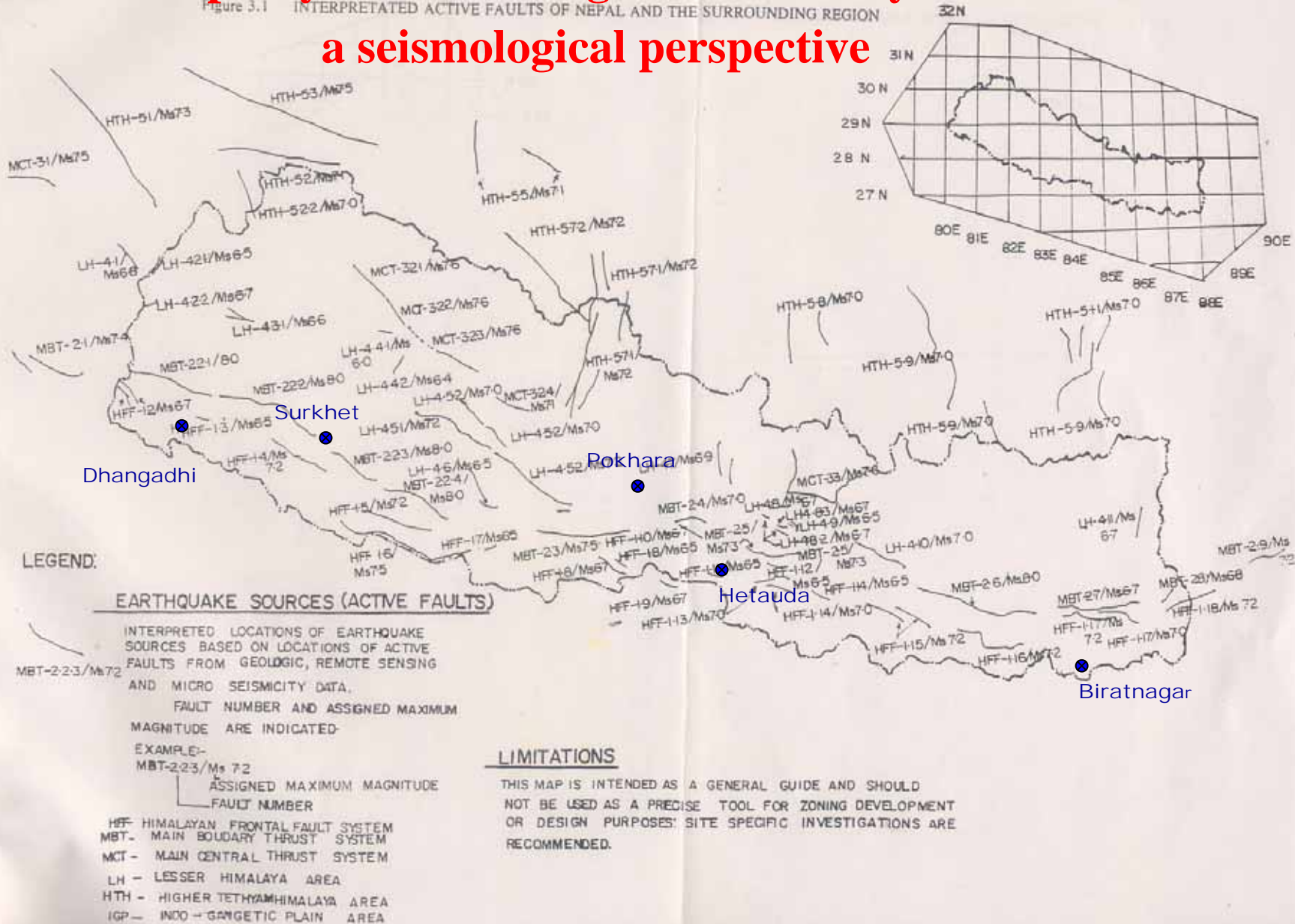
0 12.5 25 50 75 100



Kilometres

# Municipality located in high vulnerability zone from a seismological perspective

Figure 3.1 INTERPRETED ACTIVE FAULTS OF NEPAL AND THE SURROUNDING REGION

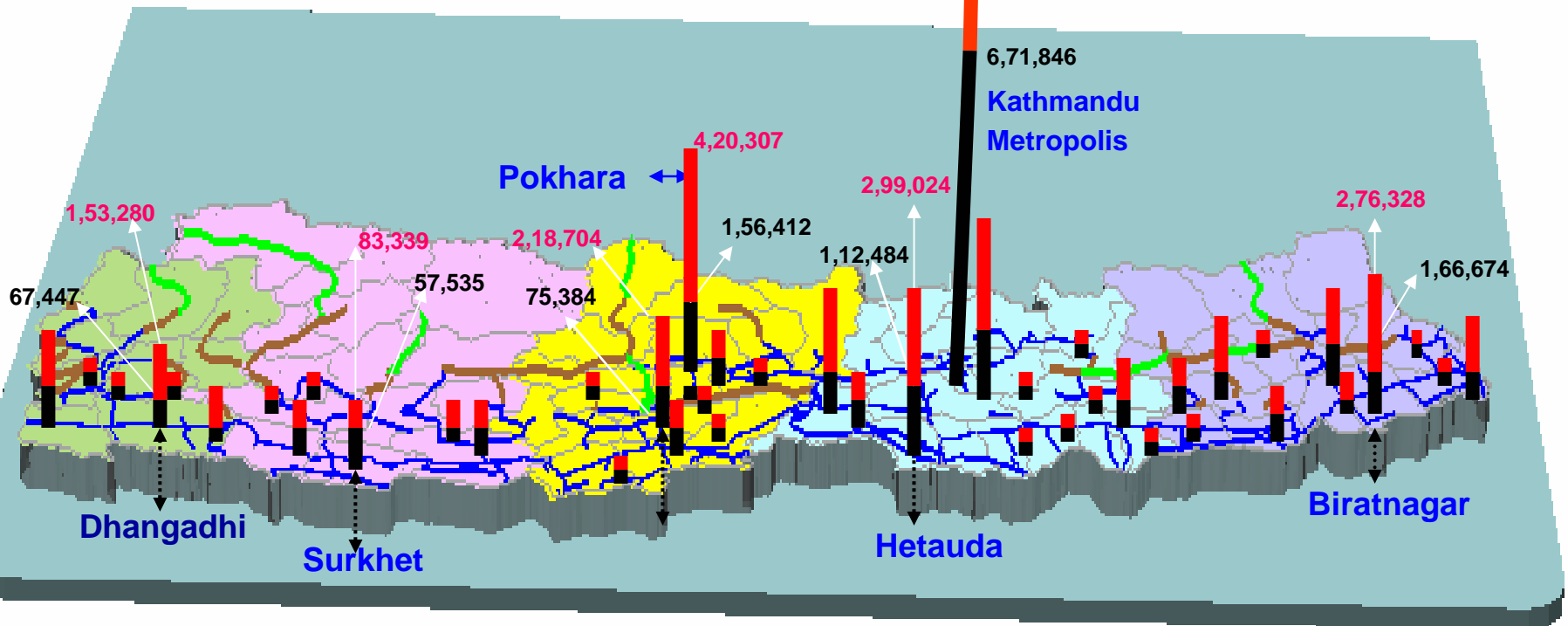


# Population Growth Scenario

(Based on municipal population projection until 2021)

- Existing Road
- Under Construction Road
- Proposed Road

- Projected Population until 2021
- Population in 2001



# Organization Setup of ERRRP

<i>Project Executive Board</i>		
<i>Senior Supplier</i>	<i>Executive</i>	<i>Senior Beneficiary</i>
Representative, Government of Japan ARR (Environment, Energy and DRR Unit) : UNDP	Joint Secretary, Ministry of Physical Planning and Works	Joint Secretaries of Ministries of Home Affairs, Physical Planning and Works and Local Development; CEOs of five earthquake prone municipalities of Nepal

<i>Project Assurance</i>
Disaster Management Specialist, UNDP

<i>Project Manager</i>
National Project Manager

<i>Project Support</i>
Admin & Finance Associate (AFA), Messenger, Driver

<i>Project Team A (at the central level)</i>	<i>Project Team B (in Project Mun. 1)</i>	<i>Project Team C (in Project Mun. 2)</i>	<i>Project Team D (in Project Mun. 3)</i>	<i>Project Team E (in Project Mun. 4)</i>	<i>Project Team F (in Project Mun. 5)</i>
1 Project Engineer (Str), 1 Project Engineer (Training), 1 Field Coordination Project Associate, and Japanese & Local technical consultants	Municipality focal point <b>Dhangadhi</b>	Municipality focal point <b>Surkhet</b>	Municipality focal point <b>Pokhara</b>	Municipality focal point <b>Hetauda</b>	Municipality focal point <b>Biratnagar</b>

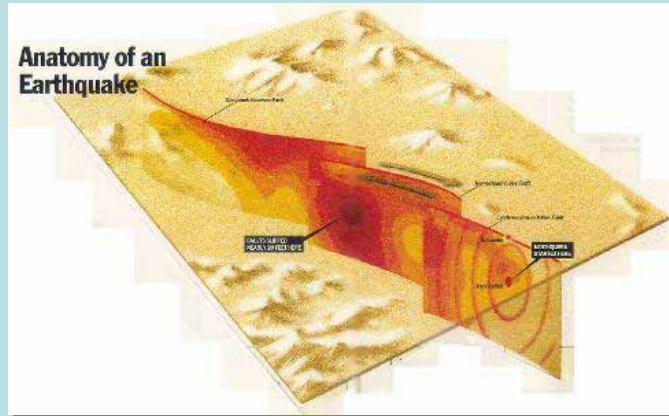
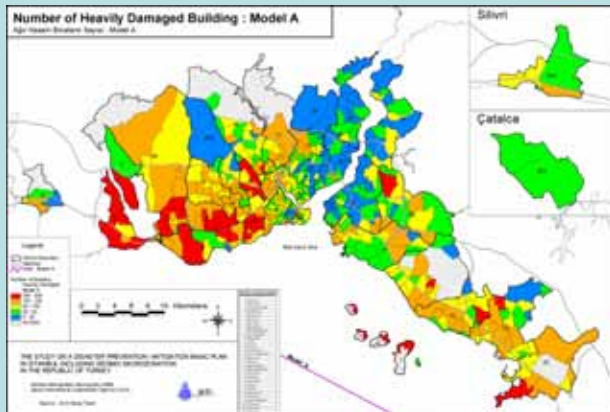
# Key Activities

- Earthquake risk, vulnerability and capacity assessment conducted in the project areas
- To implement earthquake preparedness planning and safe construction practice.
- Disaster recovery preparedness and recovery operations in post-disaster situations
- To implement disaster management framework by supporting locally appropriate solutions for Earthquake Risk Reduction.

## In short:

- Municipality Profile related to earthquake vulnerability
- Various Trainings,
- Awareness camping (publication of booklets, posters etc. )
- Retrofitting works
- Recovery Preparedness
- NBC Implementation

# What is Risk ?



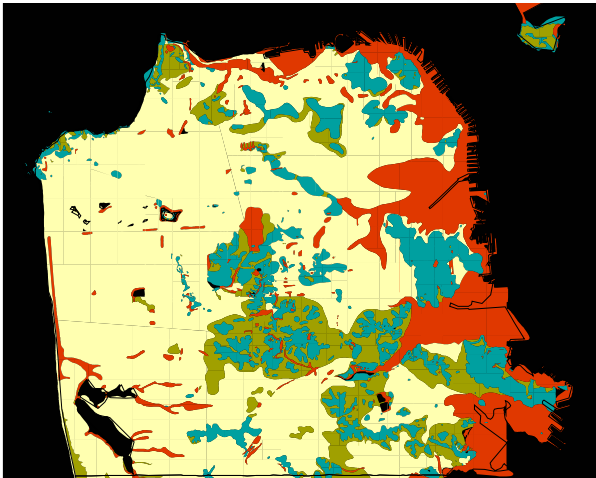
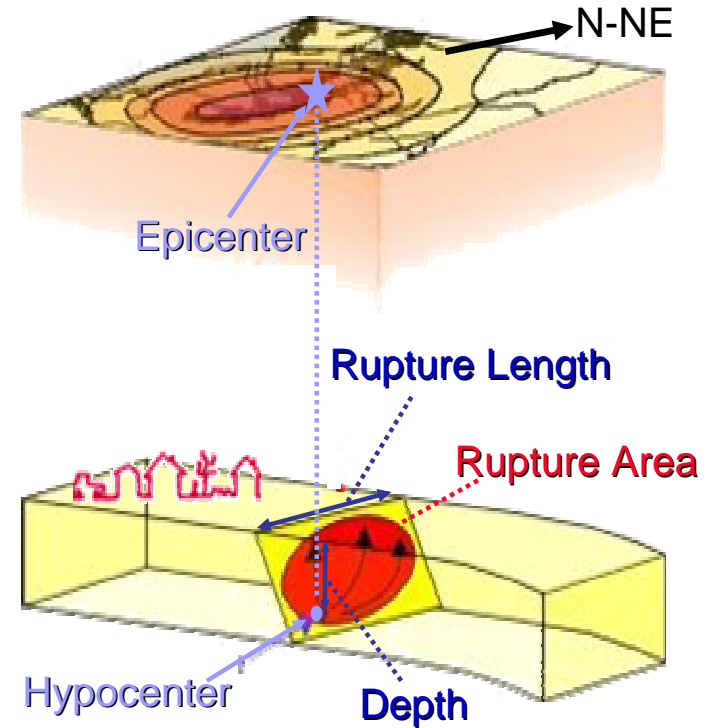
$$\text{Risk} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Preparedness}}$$



# Key Definition: Hazards

## Local Hazard

- Soil Characteristics
- Liquefaction
- Fault Lines
- Epicenters



Canada



# Risk Assessment of Municipalities

*Identify  
Hazards  
and  
Vulnerability*

*Determine  
Hazard  
Parameter*

*Develop  
an  
Inventory  
of  
Vulnerability*

*Preparedness  
Awareness  
and  
Mitigation*

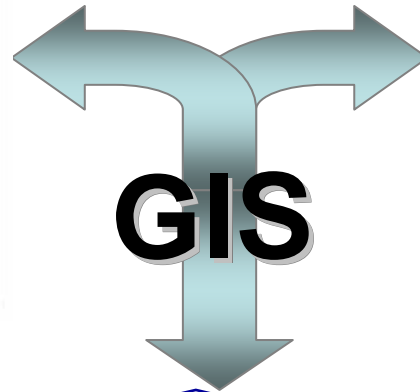
*Risk  
Reduction  
Recovery  
Preparedness*



# Information of 5 Municipalities Needed

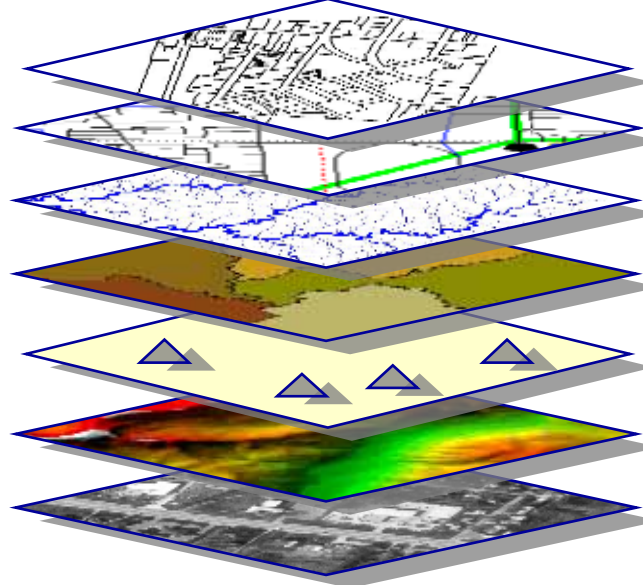


Name	ADDRESS	CITY	NUMBER OF BEDS	SHAPE_FILE	Status
ST. JOSEPH'S HOSPITAL	75 10TH HONOLULU STREET	HONOLULU	75		1 Floor
STONIA HOSPITAL	54 963 HOSPITAL ROAD	KAHALA	30		2 Floor
PAAC HOSPITAL	1 KANANI STREET	PANAMA	25		3 Floor
HAWAIIAN HEALTH CENTER INC	45 KALIPLUMIA ROAD, P.O. BOX 508	HONOLULU	30		4 Floor
HOLI MEDICAL CENTER	1781 WAIKANELE AVENUE	WAILOA	274		8 Floor
VAHA HOSPITAL	19 2281 HOLEI WALKER ROAD	KAHALA BEACH	60		8 Floor
KARER FOUNDATION HOSPITAL	2208 MOANALUA ROAD	HONOLULU	190		7 Floor
KAPULANUI MED. CTR FOR WOMEN	1235 KAPULANUI STREET	HONOLULU	276		8 Floor
KAHUNA HOSPITAL OF THE PACIFIC	228 NORTH KALANIA STREET	HONOLULU	80		9 Floor
KAHUNA MEDICAL CENTER	187 NORTH KALANIA STREET	HONOLULU	188		10 Floor
LEANA HOSPITAL	3615 KALANIA AVENUE	HONOLULU	182		11 Floor
KAHEKA'S MEDICAL CENTER	708 PUNAHONA STREET	HONOLULU	476		12 Floor
ST FRANKS MEDICAL CENTER	2230 LEIHA STREET	HONOLULU	223		13 Floor
KAHUNA HOSPITAL FOR CHILDREN	1785 PUNAHONA STREET	HONOLULU	40		14 Floor
ST PAUL'S CLINIC AND HOSPITAL	888 SOUTH KING STREET	HONOLULU	170		16 Floor
TRAPLER ARMY MEDICAL CENTER	1 JARRETT WHITE ROAD	HONOLULU	204		16 Floor
KAWAII HOSPITAL	30 113 PUNAHONA	KAHALA	34		17 Floor
CASTLE MEDICAL CENTER	340 ALAKAHI STREET	KAHALA	190		18 Floor
KAHUNA STATE HOSPITAL	801 WAIKANELE ROAD	KAHANEHE	103		18 Floor
HONOLULU GENERAL HOSPITAL	1301 HUALA STREET	HONOLULU	142		20 Floor
KAPULANUI MED. CTR AT PAUL MOA	26 10TH HONOLULU ROAD	KAHALA	75		21 Floor
ST FRANCIS MEDICAL CENTER WEST	79 2481 HOLEI WALKER ROAD	KAHALA BEACH	87		22 Floor



**Maps and Profiles of five Municipalities**

**Database**



**Geo-Admin Boundary files**

**Soil and Surficial Geology**

**Building Inventory**

**Critical Facilities**

**Lifelines and Transportation**

**Hazards**

**Population at Risk and property loss**

# Inventories to be develop for the municipalities

Population Growth Rate

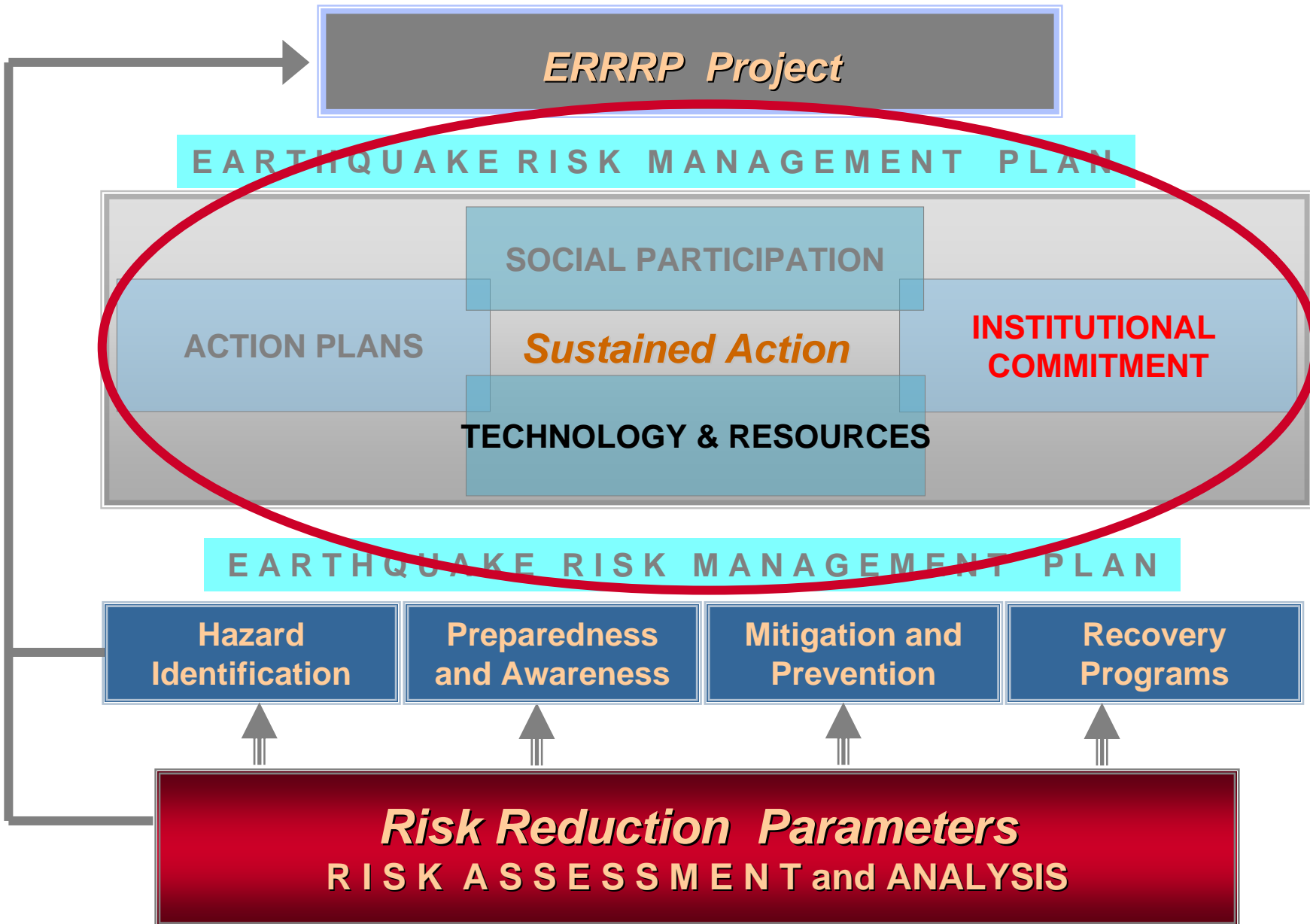
Buildings Construction Pattern

Infrastructure Development

High Risk Areas

Recovery Preparedness Plan





# Name of the Focal Persons Nominated from the Selected Municipalities

**Biratnagar Sub-Metropolitan City : Er. Dilendra Pradhan**

**Pokhara Sub-Metropolitan City : Er. Shyamji Bastola**

**Hetauda Municipality : Er. Satya Narayan Shaha**

**Birendra Nagar Municipality : Er. Janak Bahadur Shahi**

**Dhanagadhi Municipality : Er. Deej Raj Bhatta**

# Current Activities of ERRRP Project

- Establishment of Project Office at DUDBC premises
- Nomination of Focal Persons & Establishment of Focal Desk in Selected Municipalities
- Municipal Level meeting already conducted at

Birendranagar Municipality (30th. April, 2008)

Dhangadhi Municipality (2nd. May, 2008)

# Current Activities of ERRRP Project at Birendra Nagar Municipality



Visit to Birendranagar  
Municipality



Municipal level meeting in  
Birendranagar Municipality

30th. April, 2008



# Municipality Level Meeting at Birendra Nagar Municipality



# Current Activities of ERRRP Project at Dhangadhi Municipality



Visit to Dhanagadhi  
Municipality



Municipal level meeting in  
Dhanagadhi Municipality

2nd. May 2008

# Municipality Level Meeting at Dhangadhi Municipality



# Municipality Level Meeting Conducted

Biratnagar : 12th. May, 2008 (2065 Baishakh  
30th.)

Hetauda : 14th. May, 2008 (2065 Jeshtha 1st.)

Pokhara : 16th. May, 2008 (2065 Jeshtha 3rd.)

# Field Visit to **Biratnagar** Sub-Metropolitan City



# Conduction of Municipal Level Meeting



# Need Assessment Form Fill Up by Focal Person



# Field Visit to Hetauda Municipality





# Conduction of Municipal Level Meeting



# Descriptive Presentation of ERRRP



# Need Assessment Form Fill Up by Focal Person



# Field Visit to Pokhara Sub-Metropolitan City



# Conduction of Meeting



# Training Need Assessment Form Fill Up by Focal Person



# Minute Reading By CEO

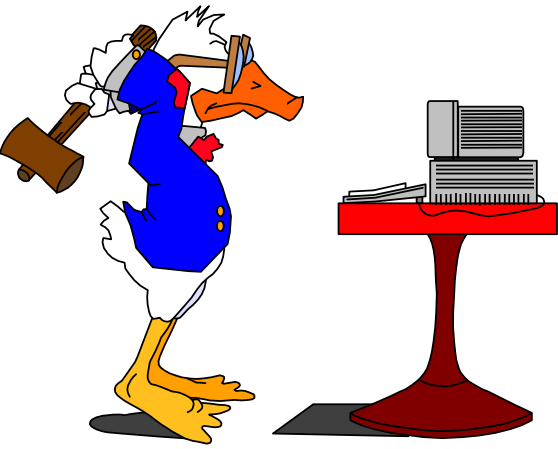


# After the visit of Municipalities

Minute :

- Data needed for Municipality Profile
- Need assessment for Trainings on Earthquake Risk and Recovery
- Need assessment for Logistic support to the Municipalities
- Need assessment for Retrofitting / Construction of demonstrative public buildings
- Commitment of NBC Implementation





Thank you for your attention !

