

*The Study on Earthquake Disaster Mitigation
in the Kathmandu Valley, Kingdom of Nepal*

Outline of Database System



JICA Study Team

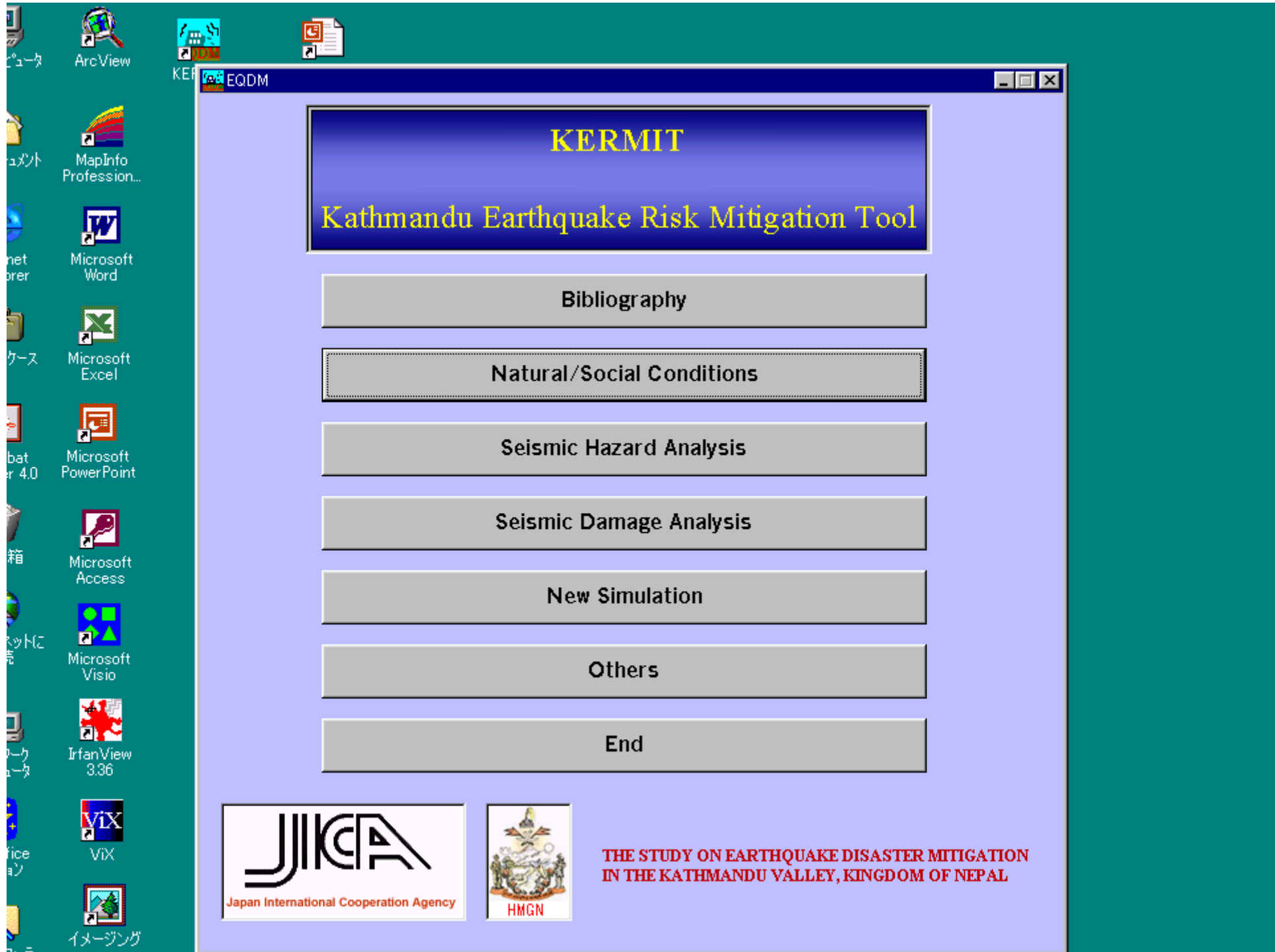
N.Toyama
(GIS)

Purpose of Database System

- To evaluate and display the spatial distribution of seismic disaster.

The final products : maps & tables showing current condition and analyzed results.

Development of a earthquake disaster mitigation planning



KERMIT

Kathmandu Earthquake Risk Mitigation Tool

Bibliography

Natural/Social Conditions

Seismic Hazard Analysis

Seismic Damage Analysis

New Simulation

Others

End



THE STUDY ON EARTHQUAKE DISASTER MITIGATION
IN THE KATHMANDU VALLEY, KINGDOM OF NEPAL

Natural/Social Condition

Natural Conditions

- Topography(Heavy)
- Slope Gradient(Heavy)
- Geology
- Geomorphology

Go

Social Conditions

- Population
- Population Density
- Land Use
- Land Capability

Go

Building Distribution

- Total
- Stone
- Adobe
- Brick with mud mortar(regular)

Go

Public Facility

- Public Facility (Hospitals)
- Facility Accessibility (Hospitals)
- Public Facility (Government Schools)
- Facility Accessibility (Schools)

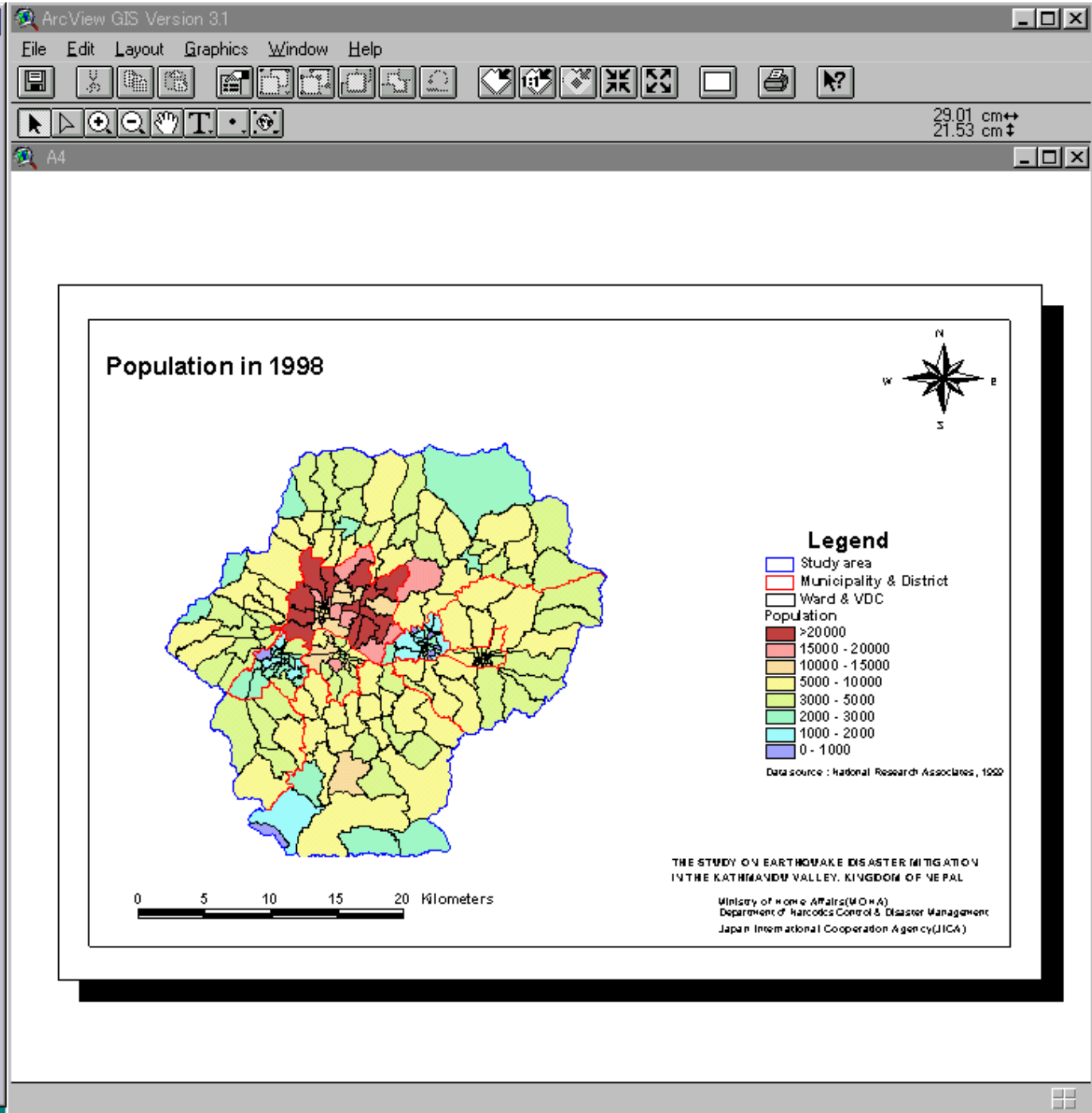
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Infrastructure

- Water supply
- Electricity
- Electricity (Branch office Coverage)
- Electricity (Sub-station Coverage)

Go

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Seismic Hazard Analysis

Ground Model

Location Map of Boreholes
Ground Model for Seismic Analysis

Go

Scenario Earthquake

Source Fault Models

Go

Peak Ground Acceleration

Distribution Map I (Mid Nepal Eq)
Distribution Map II (North Bagmati Eq)
Distribution Map III (KV Local Eq)

Go

Seismic Intensity

Distribution Map I (Mid Nepal Eq)
Distribution Map II (North Bagmati Eq)
Distribution Map III (KV Local Eq)

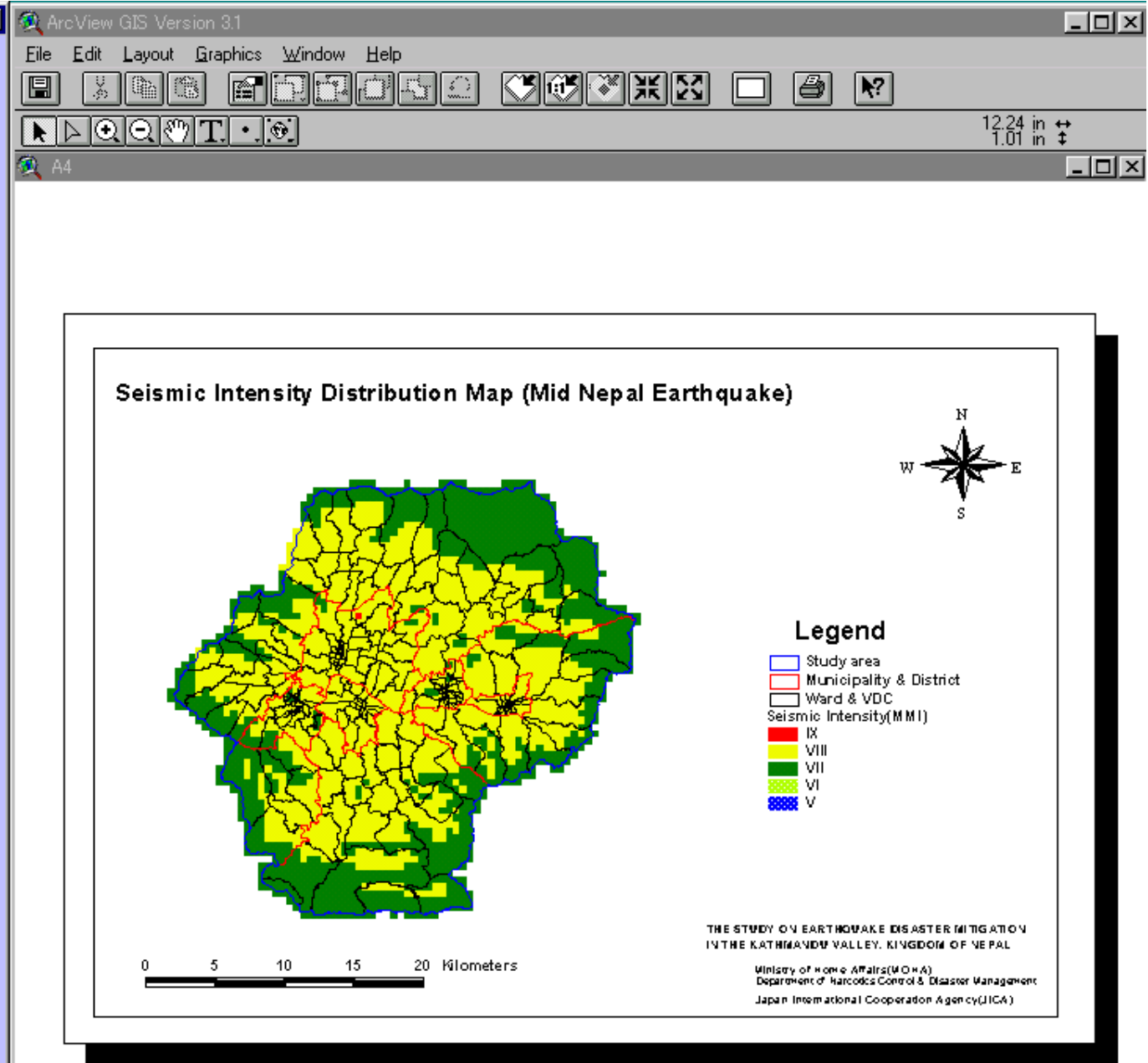
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Liquefaction and Slope Stability

Water Tabale for Liquefaction Analysis
Liquefaction Potential Map I
Liquefaction Potential Map II
Liquefaction Potential Map III

Go

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Seismic Damage

Building Damage

- Heavily Damaged Building I
- Heavily Damaged Building II
- Heavily Damaged Building III
- Heavily Damaged Building Ratio I
- Heavily Damaged Building Ratio II

GO

Casualty

- Death Toll Density I
- Death Toll Density II
- Death Toll Density III
- Total Casualty Density I
- Total Casualty Density II

GO

Infrastructure

- Water Supply I
- Water Supply II
- Sewage I
- Sewage II
- Electricity I
- Electricity II
- Telecommunication I

Go

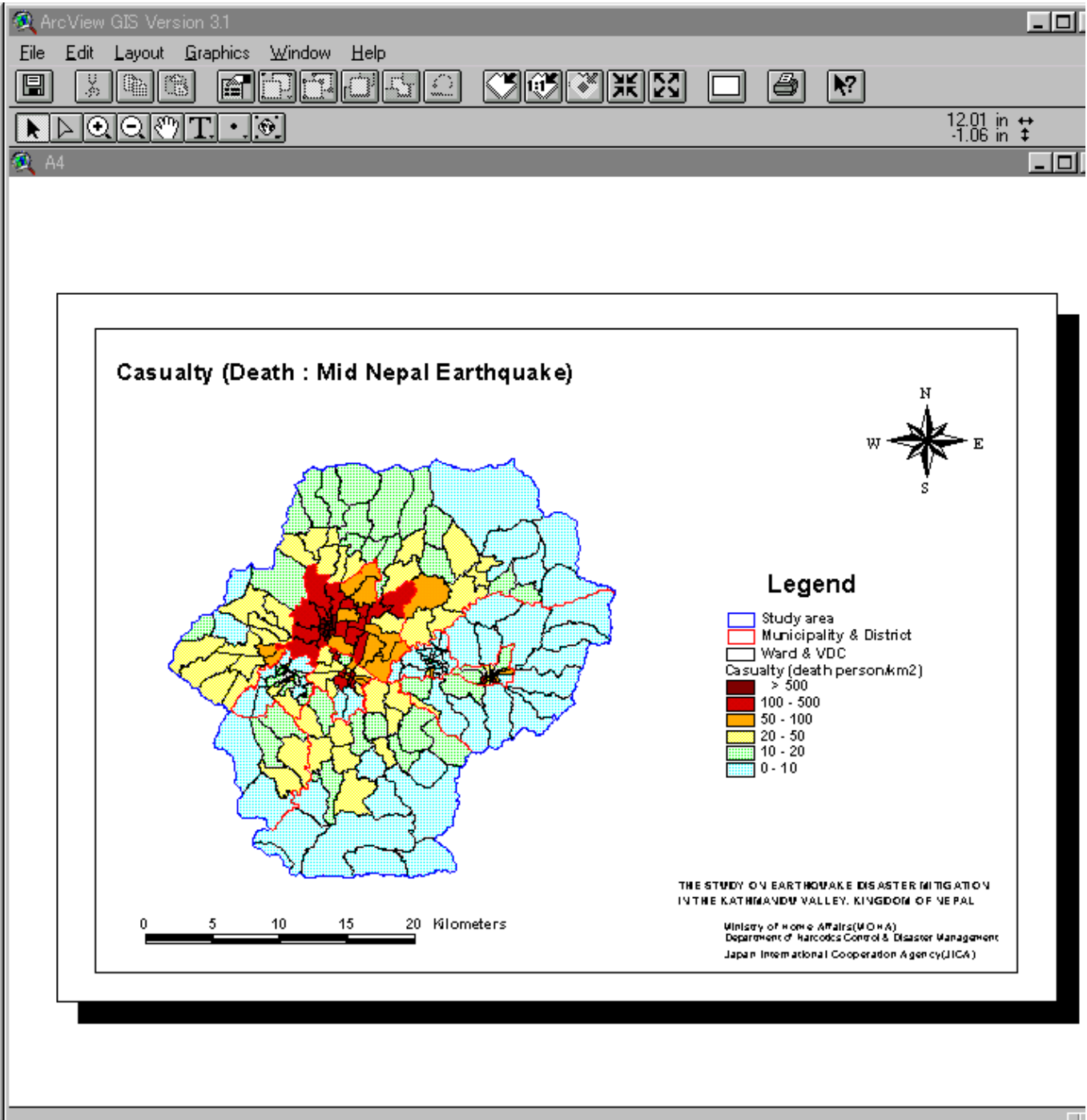
Fire Outbreak

- Fire Outbreak Rank I
- Fire Outbreak Rank II

Go

I: Mid Nepal Earthquake
 II: Noth Bagmati Earthquake
 III: KV Local Earthquake

Cancel (Back to Main)



New Simulation

ArcView GIS Version 3.1

File Edit Layout Graphics Window Help

12.19 in
6.97 in

A4

Step1

Calculate Seismic Hazard

Step2 Display Seismic Hazard

Display Ground Acceleration
Display Intensity
Display Liquefaction

Step3 Calculate Damage

Heavily Damaged Building
Heavily Damaged Building Ratio
Death Toll Number
Death Toll Density
Water Supply
Sewage
Electricity
Telecom
*

Go

Cancel (Back to Main)

Fault Parameters

Magnitude (Mw) 5.2

Longitude 84.2

Latitude 27.4

Length (km) 10

Width (km) 20

Azimuth 290

Type of Fault

Reverse

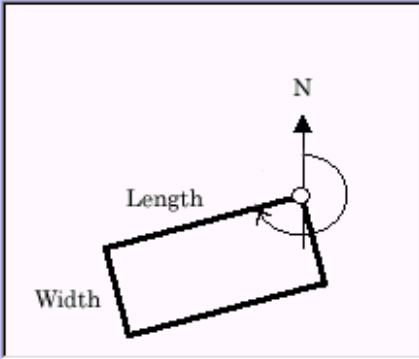

Not Specified

Set Mid Nepal Eq. parameters

Set North Bagmati Eq. parameters

Calculate

Cancel

Legend

Study area
Municipality & District
Hazard & VDC
Death Toll Density (death person/km2)

- > 500
- 100 - 500
- 50 - 100
- 10 - 50
- 0 - 10

EARTHQUAKE DISASTER MITIGATION
KATHMANDU VALLEY, KINGDOM OF NEPAL

Ministry of Home Affairs (MOHA)
Ministry of Narcotics Control & Disaster Management
International Cooperation Agency (JICA)

Others

Statistics of Past Disasters

Data source: MOHA
Data source: DPTC

Go

Meteorological Features

Meteorological Features

Go

Social Survey

Location Map

Land Development Sites
Newar Settlement

Go

Social Survey Result of EXCEL

Go

Building Inventory

Location Map

Go

**building

Go

Cancel (Back to Main)

ArcView GIS Version 3.1

File Edit Layout Graphics Window Help

13.40 cm ↔
-2.40 cm ↓

A4

Location of social survey

Legend

- Study area
- Municipality & District
- Ward & VDC
- Location of social survey
- Road network
 - National Highway
 - Ringroad
 - Feeder Road (Major)
 - Feeder Road (Minor)
 - Urban Road (Major)
 - District Road (Bituminous)
 - Urban Road (Minor)
 - Urban Road (Gravel)
 - District Road (Gravel)

0 5 10 15 20 Kilometers

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Ministry of Home Affairs (MOHA)
Department of Narcotics Control & Disaster Management
Japan International Cooperation Agency (JICA)

End

