



IN THE NAME OF GOD



**DISASTER MANAGEMENT  
USING  
SPATIAL INFORMATION  
TECHNOLOGY**

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Client



# Iranian Red Crescent Society



# Project Steps(1999-2002)



## RUP Methodology

- Business Modeling
- Requirements
- Analysis & Design
- Software Development
- Data Preparation
- Test
- Installation & Training
- Support



# General Software Specification



- Windows Based
- Network Environment
- Multi Scale GIS Component
- RDBMS
- Programming
- User Friendly (Multilingual, Intuitive Menus, Etc.)
- Expandable / Customizable



## Data Gathering & Preparation



- IRAN 1:250,000 scale Base Maps (NGO)
- IRAN 1:25,000 scale Maps (NCC)
- Villages -120,000 Points (Ministry of Jihad Agriculture)
- IRAN Roads Maps (Ministry of Road & Transportation)
- IRAN BASIN Maps (JAMAB Consultant Engineers Co.)
- IRAN Fault Maps (Geological Consultant)
- IRAN Census Database (Iran Center of Statistics)
- RS/ Satellite Imagery (Future Plan)
- Etc.



# Capabilities (I)



## Disaster Data Registration

- Type of disaster : Earthquake (Default)
- Specify Disaster Location : Province (State) , City ,village , Lat. & Long ., or Direct Pointing
- Specify Time, Date, Reporting Source, Intensity (Earthquake), Etc.



# Capabilities (II)



## **Determination of the Geographic Extent**

- Identify the Effective Fault
- Determine the Effective Length of the Fault
- Determine and Display Different Intensity Zones

## **Estimation of the Affected Population**

- Age Categories (Under 2, 2-15, 15-64, Above 64)

## **Response / Mitigation Decision Support**

- Possibility to Query about all Important Features Affecting Response / Mitigation Decisions such as: Meteorological Information, Man-Made Structures (Dams, Bridges, Silos, Mines, Etc.) , Agricultural Information, Global Heritage / Historical Places, Etc.



# Capabilities (III)



**Output A  
Variety of  
Reports  
& Maps**

## Requirements Calculation

### FOOD

- First 72 hours Food Requirements: Bread, Dates, Canned food, Etc.
- Monthly Food Requirements: Bread, Rice, Oil, Etc.

### Camp & Utilities

- Suitable Camping Area
- Tents
- Water Tank
- Health Care Staff
- Sanitary, Etc.



# Capabilities (IV)



## Response Decision Making Based on:

- Nearest Iranian Red Crescent Society Installations (Pharmacies, Cultural Centers, Human Resources Bases, Warehouses, Depots, Equipment Bases, Etc.)
- Health Care Centers
- Police and Military Centers
- Etc



# Capabilities (V)



## AVL & Tracking

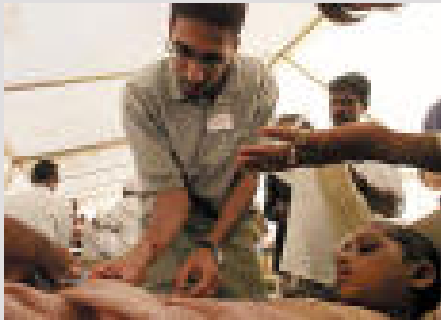
- Direct Input of GPS Position Data of Emergency Groups

## Images

- Satellite Imagery / Aerial Photos Backdrop



# Capabilities (VI)



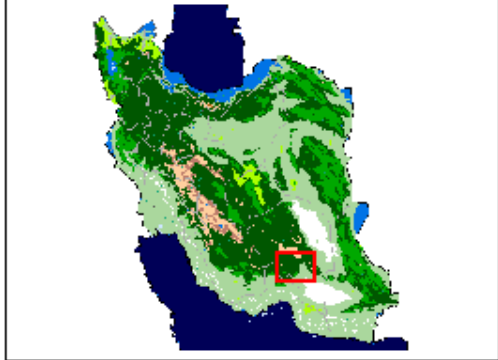
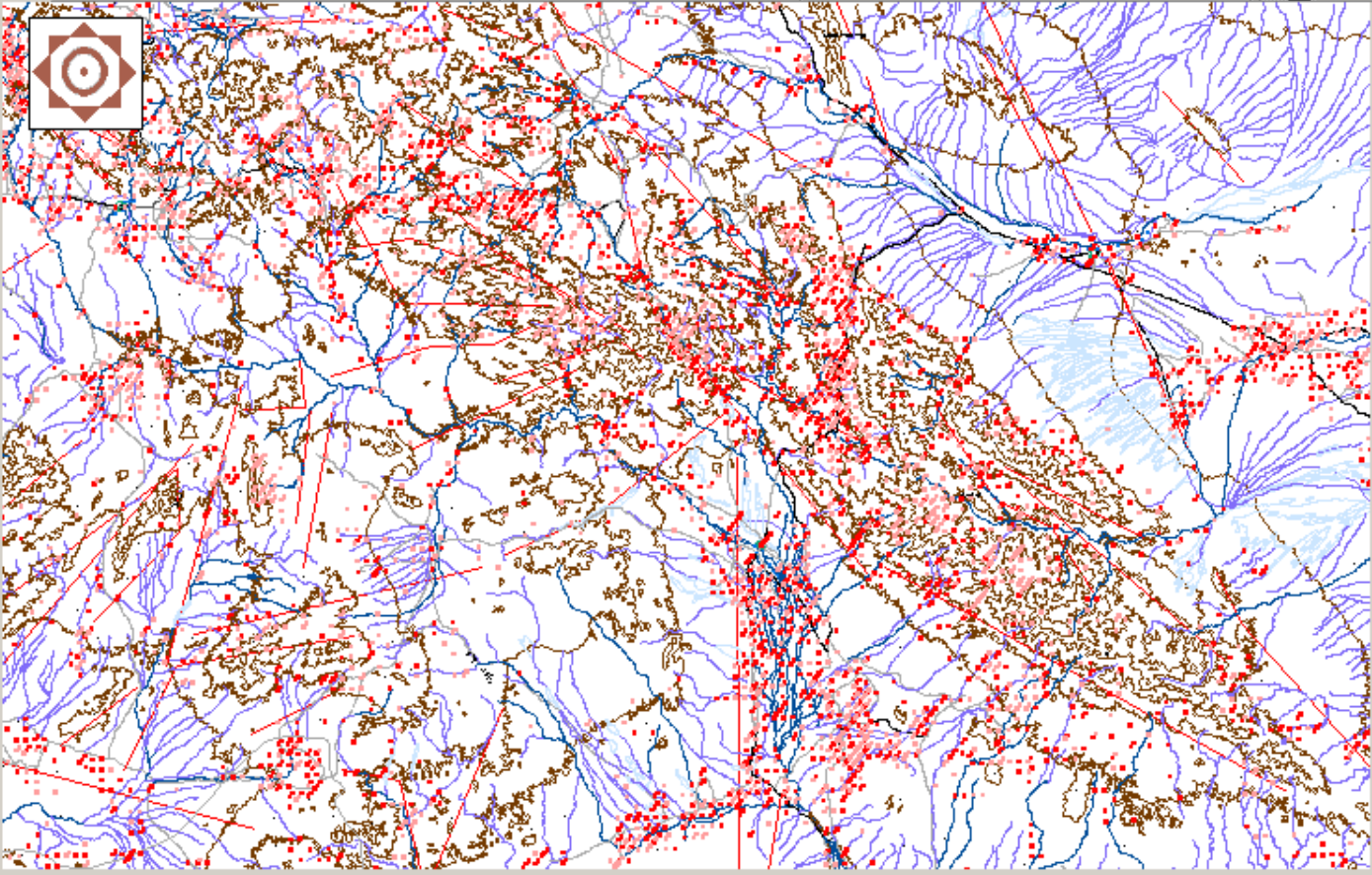
## General GIS Functionalities

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راهنمای نقشه

- عوارض نقشه
  - محدوده های نقشه
  - راه و راه آهن
  - زمین شناسی
  - سازه
  - عوارض آبی
  - عوارض طبیعی
  - محدوده
  - نام - نقاط جمعیتی
  - نقاط جمعیتی
  - نوشتاری
  - هیپسو متر
- نمایش    معکوس    شیخ    شمه



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# Present Situation



**Installed at the Headquarter in  
Tehran**

**Used in Bam and other Recent  
Earthquakes**

**Adding More Attribute Data**



**Thank You  
for  
Your Attention**

**INFO@Heler-Rayaneh.com**