



UNISDR

The United Nations Office for Disaster Risk Reduction

Development of National Disaster Inventories in Asia and Pacific Region

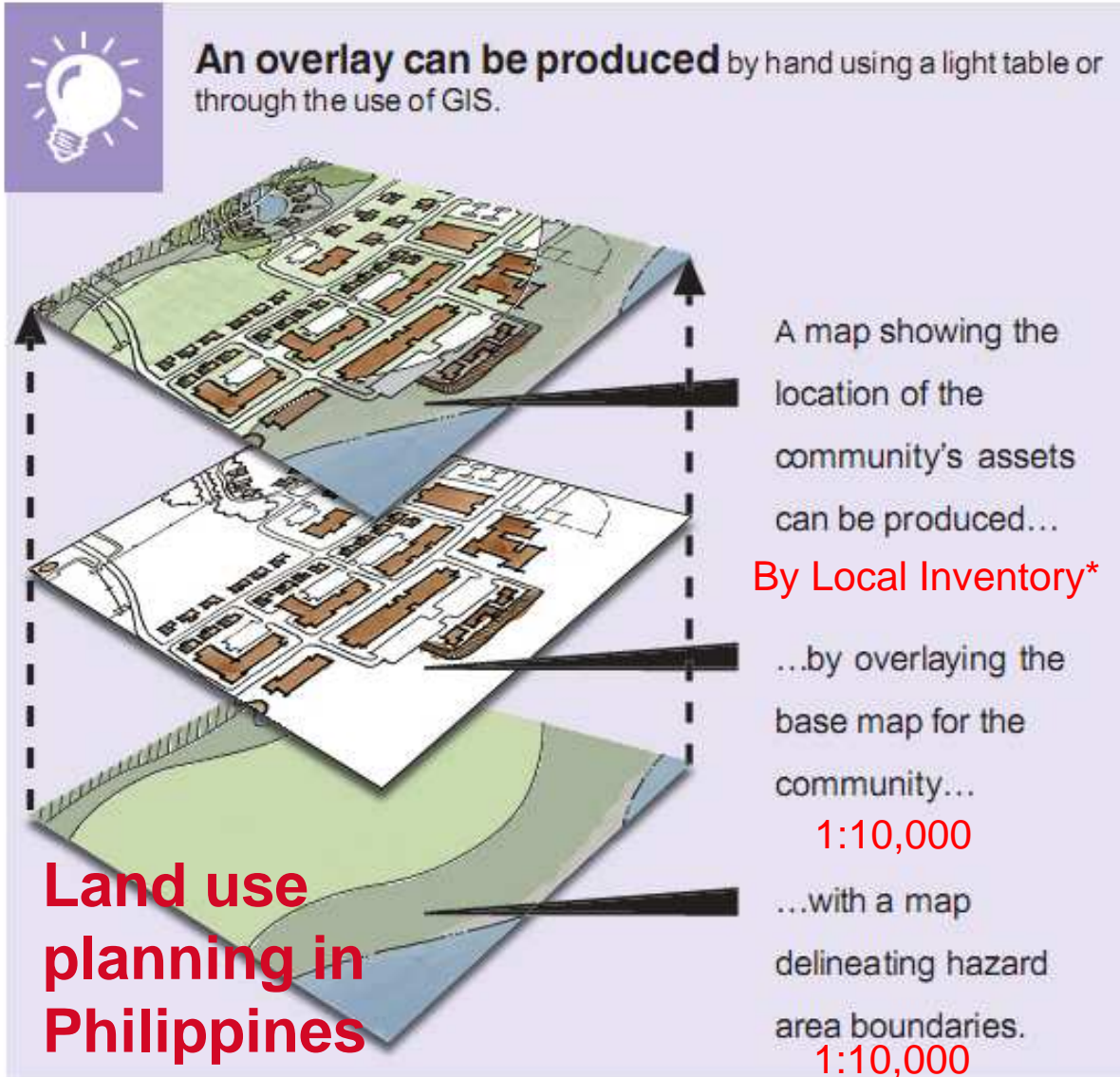
Workshop on “Meta-Guidelines” for Water and Climate Change Adaptation

*Jerry Velasquez, PH.D.
Senior Regional Coordinator
UNISDR Asia Pacific*

How do land use plans turn to investments?



Local risk estimation for planning



An “**exemplar**” approach

STEPS

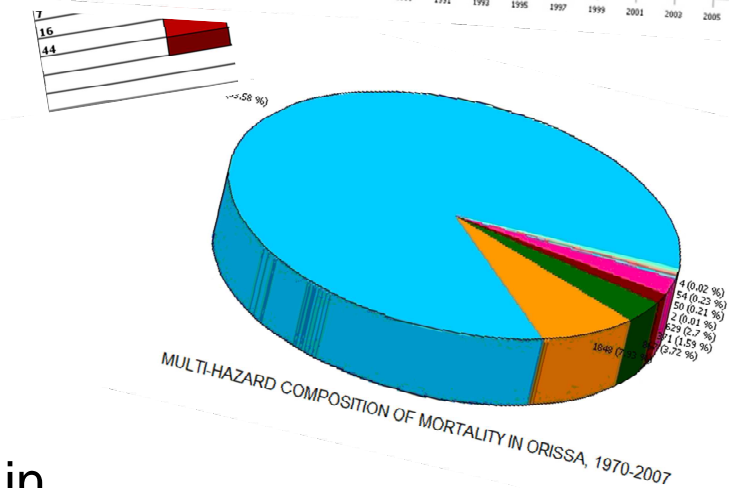
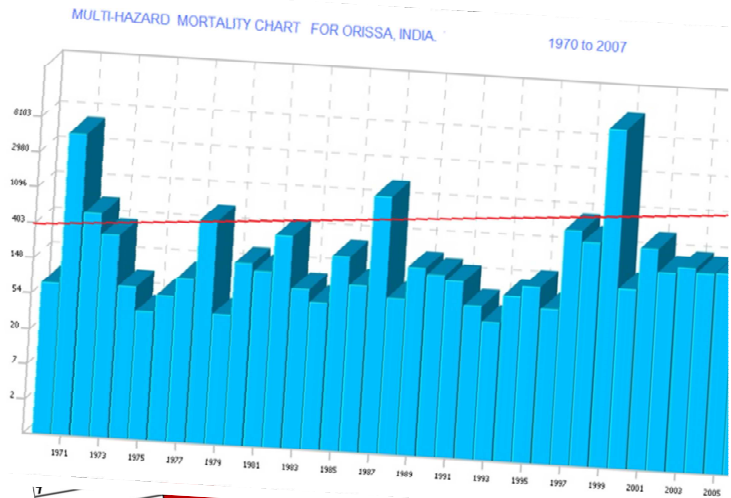
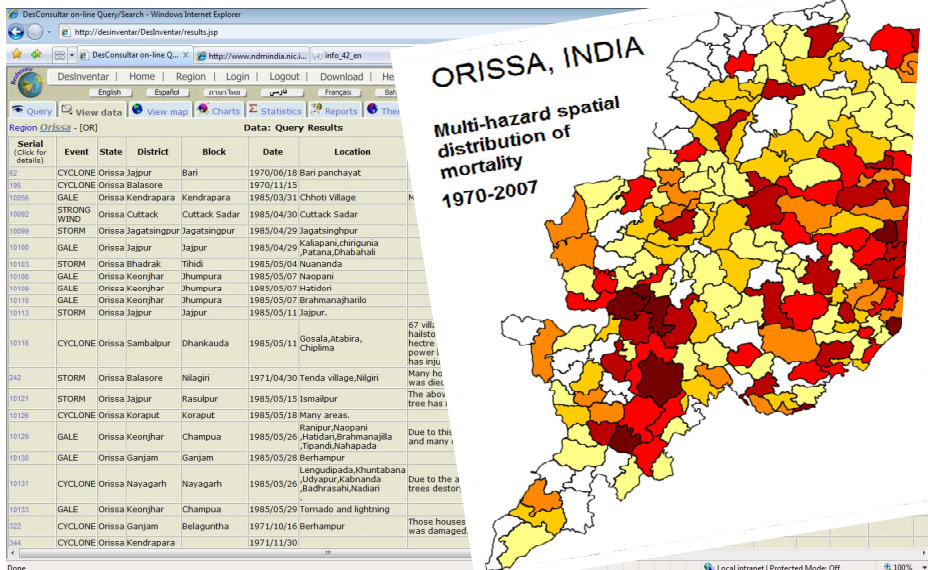
- Prepare a Base Map
- Overlay Topography Features
- **Overlay Hazard /Susceptibility Elements**
- Overlay Land Cover/Land Use Elements
- **Overlay Elements at Risk by each Sector**
- Create a composite

National Disaster Inventories

- No systematic collection of disaster damage, loss data in most countries
- Valuable information is lost
- Difficult to determine long-term impact on development
- Difficult to understand risk change trends
- Difficult to determine vulnerability of local structures, infrastructures, society
- **No way to learn from the past**

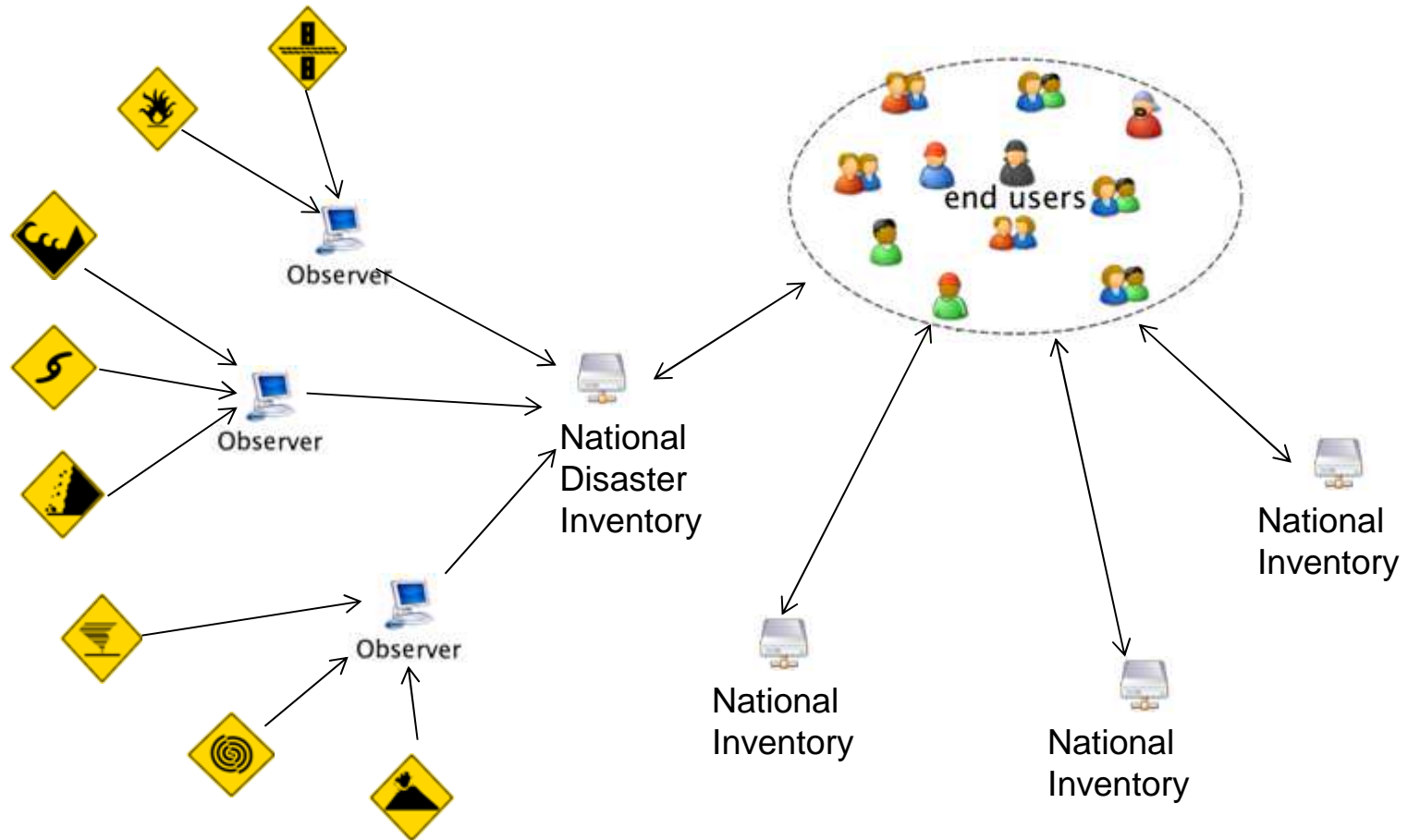


What are National Disaster Inventories?



- **DesInventar** Inventories record and analyse the occurrence and effects of disasters
- Disaggregated information is provided in tabular and graphical form (maps and charts)

Functional Diagram for National Disaster Inventories



DesInventar Methodology

- essentially proposes the collection of homogeneous data about disasters of all scales.
- The information compiled and processed is entered in a scale of time and referenced to a relatively small geographic unit.



Typical contents of a DesInventar Disaster database



The actual screen for data capture.

It can be customized by users.

Standard Effects
(killed, injured, affected, etc.)

Extension (Sectorial detail information)

DesInventar on-line : PDNA Pre-configured databaseData Entry - Windows Internet Explorer

http://desinventar/DesInventar/inv/datacardtab.jsp

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Region | Geography | Events | Causes | Extension | Query | Edit Data | Data Entry | Admin | Security

Region PDNA Pre-configured database - [pd]

Serial: 1234 Date (YMD): 2007 11 30 Duration (d): 2 Source: WHO - RHA initial assessment

Departamento: ANTIOQUIA Municipio: MEDELLIN Corregimiento: [v]

Event: LANDSLIDE Location: Comuna 12 - Barrio las Cruces (Cra 75E -Cl. 25sur) GLIDENumber: LS-20070023-COL

Cause: Earthquake Description of Cause: Minor Earthquake triggered several landslides; Previous rain

EFFECTS

Deaths: 12 Missing: 3 Injured: 5 Magnitude: 4.5 richter

Affected: 45 Relocated: 11 Houses Damaged.: 2 Losses \$Local: 0.0

Evacuated: 0 Victims: 0 Houses Destroyed: 4 Losses \$USD: 0.0

Affected Sectors

Transportation Communications Relief

Agriculture Water supply Sewerage

Power and Energy Industries Education

Other sectors Health sector

Damages in roads Mts: 0.0

Damages in crops Ha: 0.0

Lost Catle: 0

Education centers: 0

Hospitals: 0

OTHER LOSSES: [text field]

Comments: [text area]

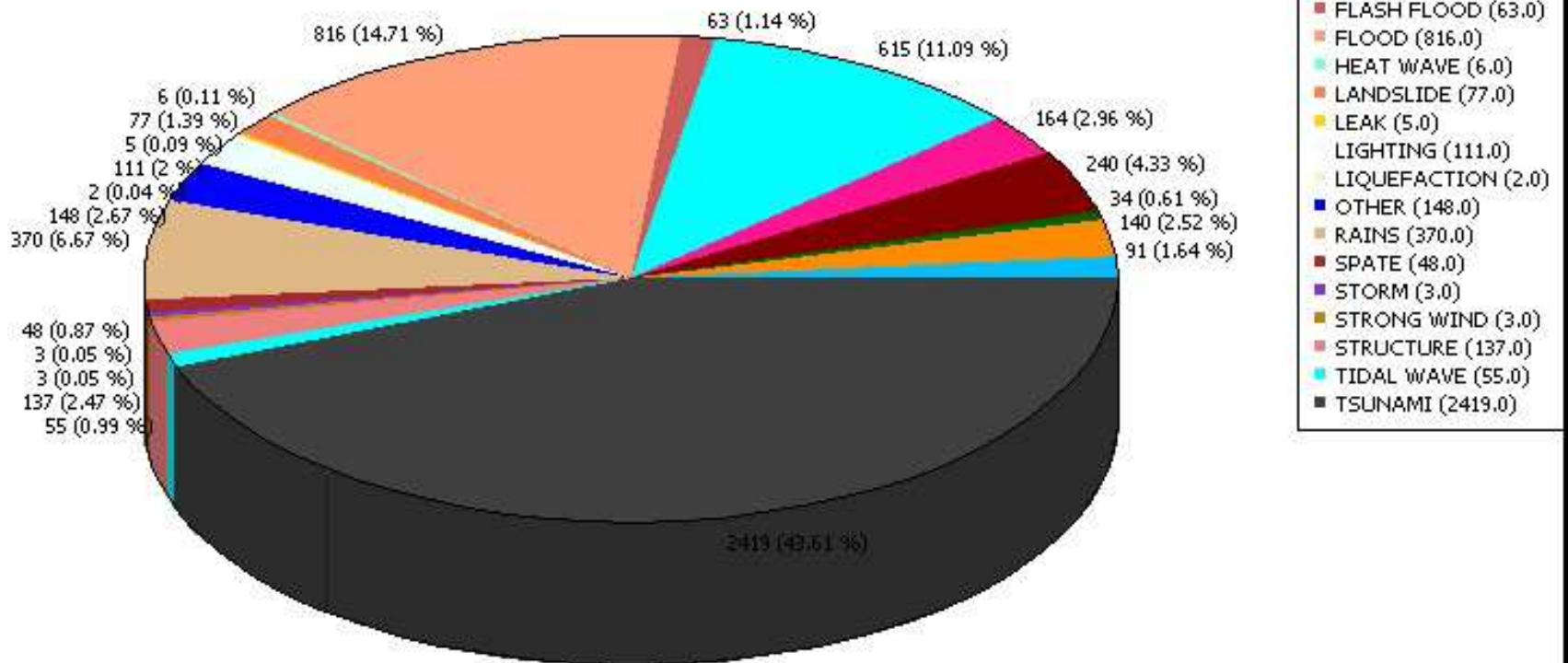
By: UNDP Date: 2007-11-30

Population	Housing	Education	Health	Energy	WASH	Transport	Comm	Agriculture	Industry	Tourism	Environ	GOV	Other
Population under 5:	0												
Population 6-20:	0												
Population 21-60:	0												
Population over 60:	0												
Population total women:	0												

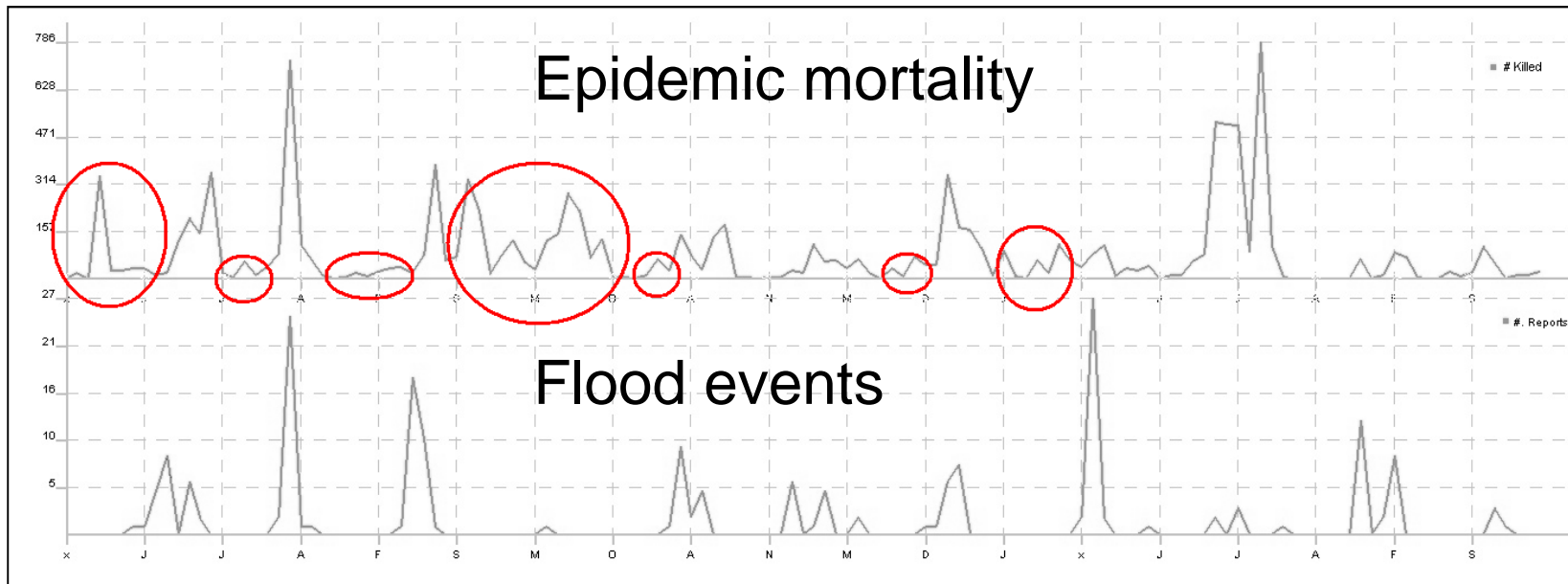
Composition Analysis – what is causing what damage?



Number of Deaths per disaster type in Tamil Nadu, India



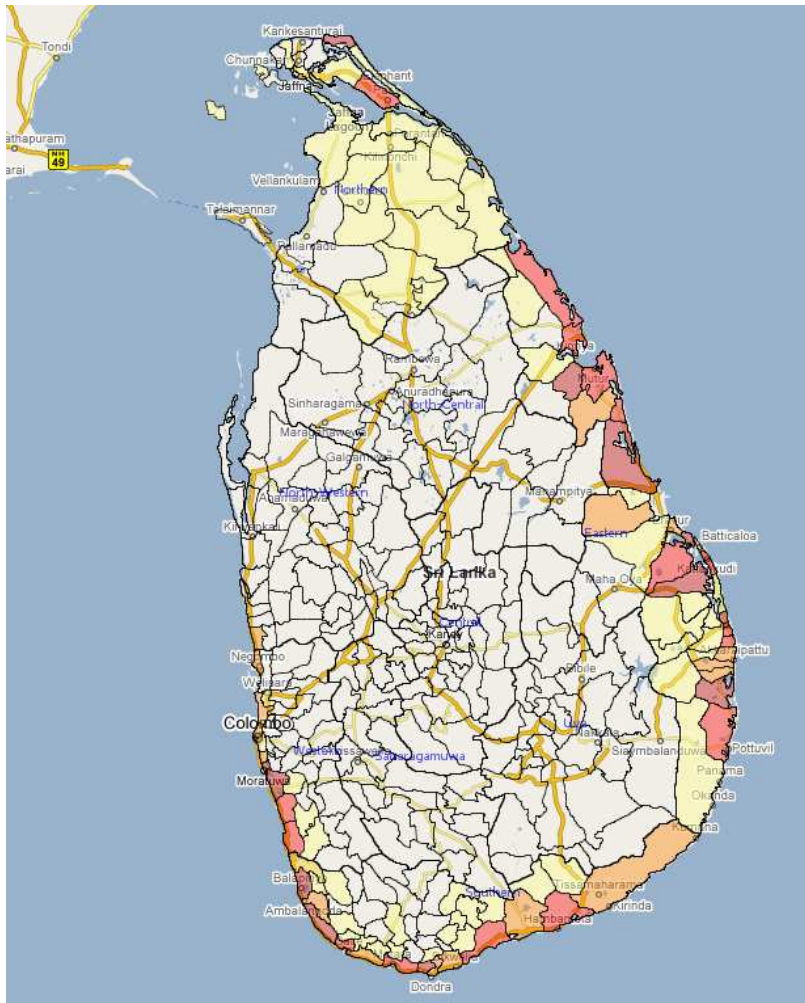
Temporal Analysis (trends): distribution of losses over time



Number of reports of floods and people killed by epidemics in Orissa, India (11 years), showing a high correlation between floods and epidemics. Ovals show non-related epidemic events.



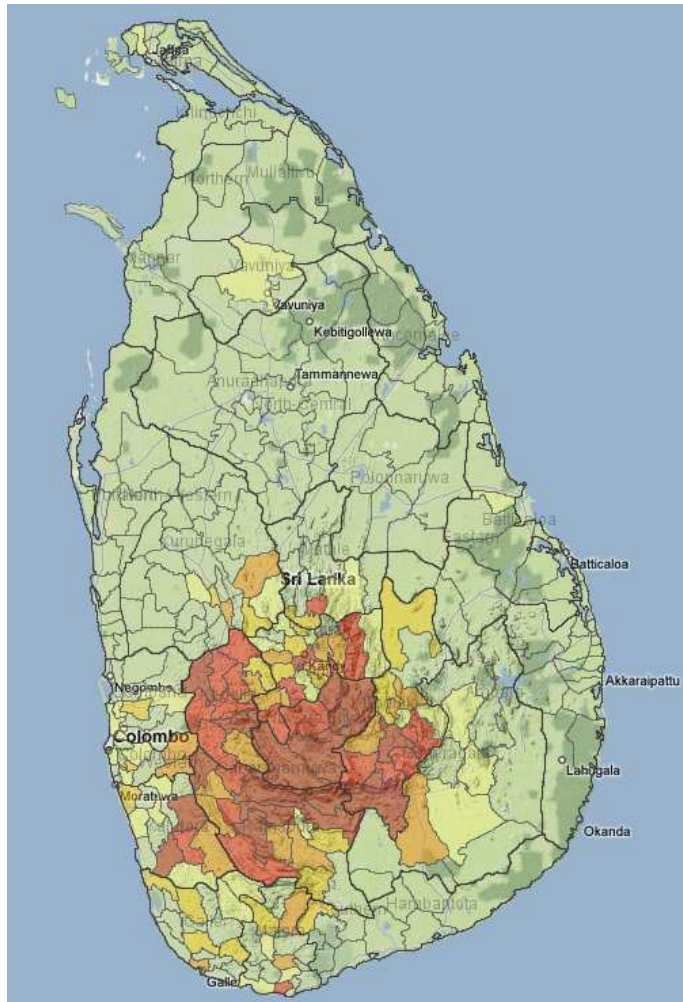
Spatial Analysis (patterns): distribution of losses over space



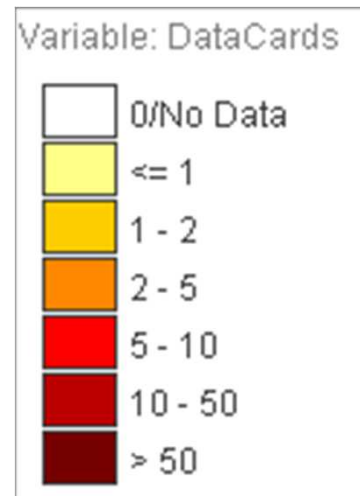
Spatial distribution of houses destroyed in Sri Lanka after the 2004 Tsunami

Variable:Houses Destroyed + Ho	
Upper Limit	Color
-	
28	
84	
1278	
2557	

Spatial Analysis (patterns): distribution of losses over space

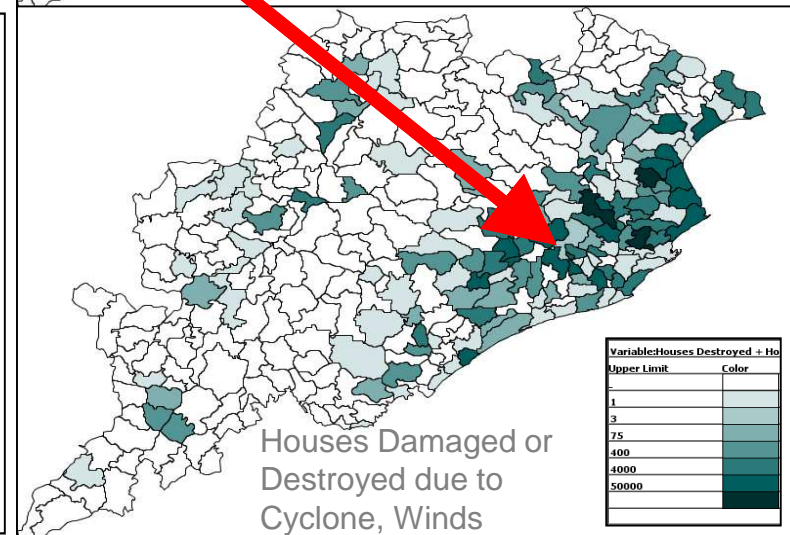
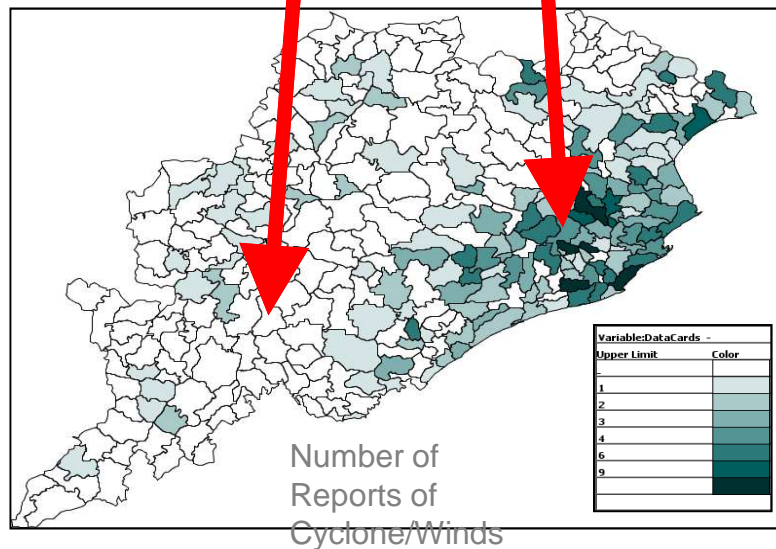
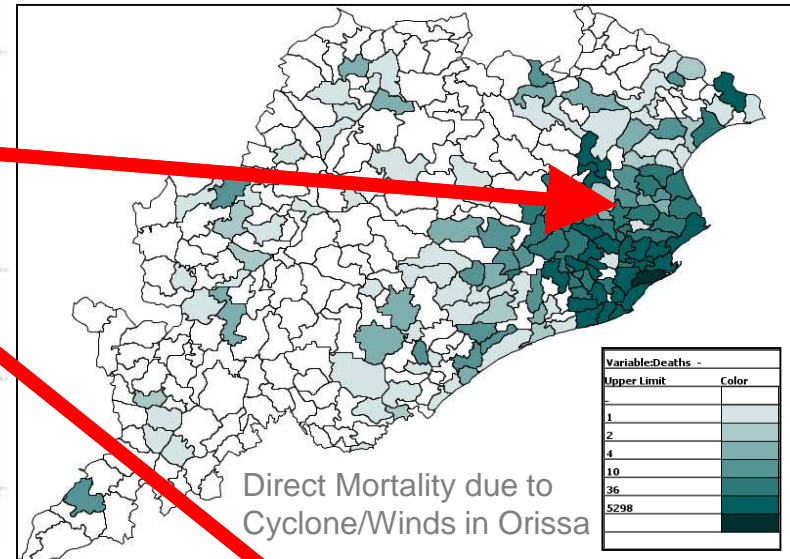
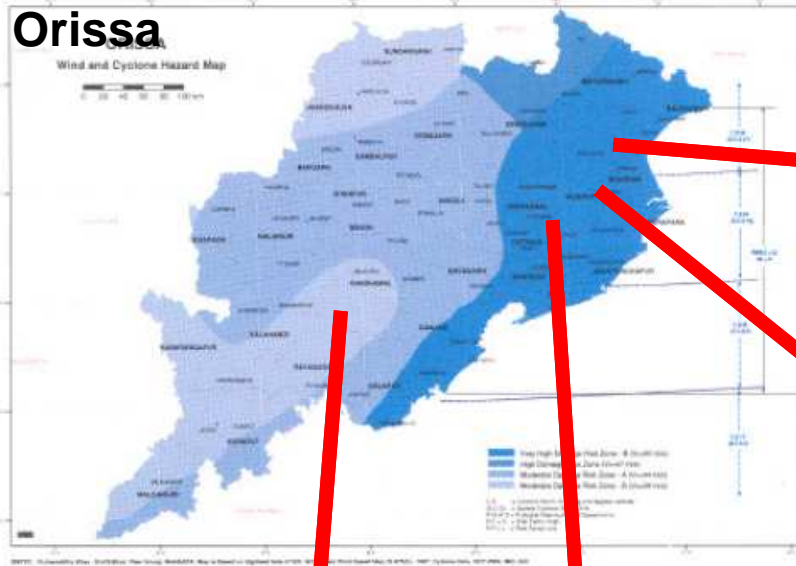


Spatial distribution of
Landslides in Sri
Lanka (1970-2007)



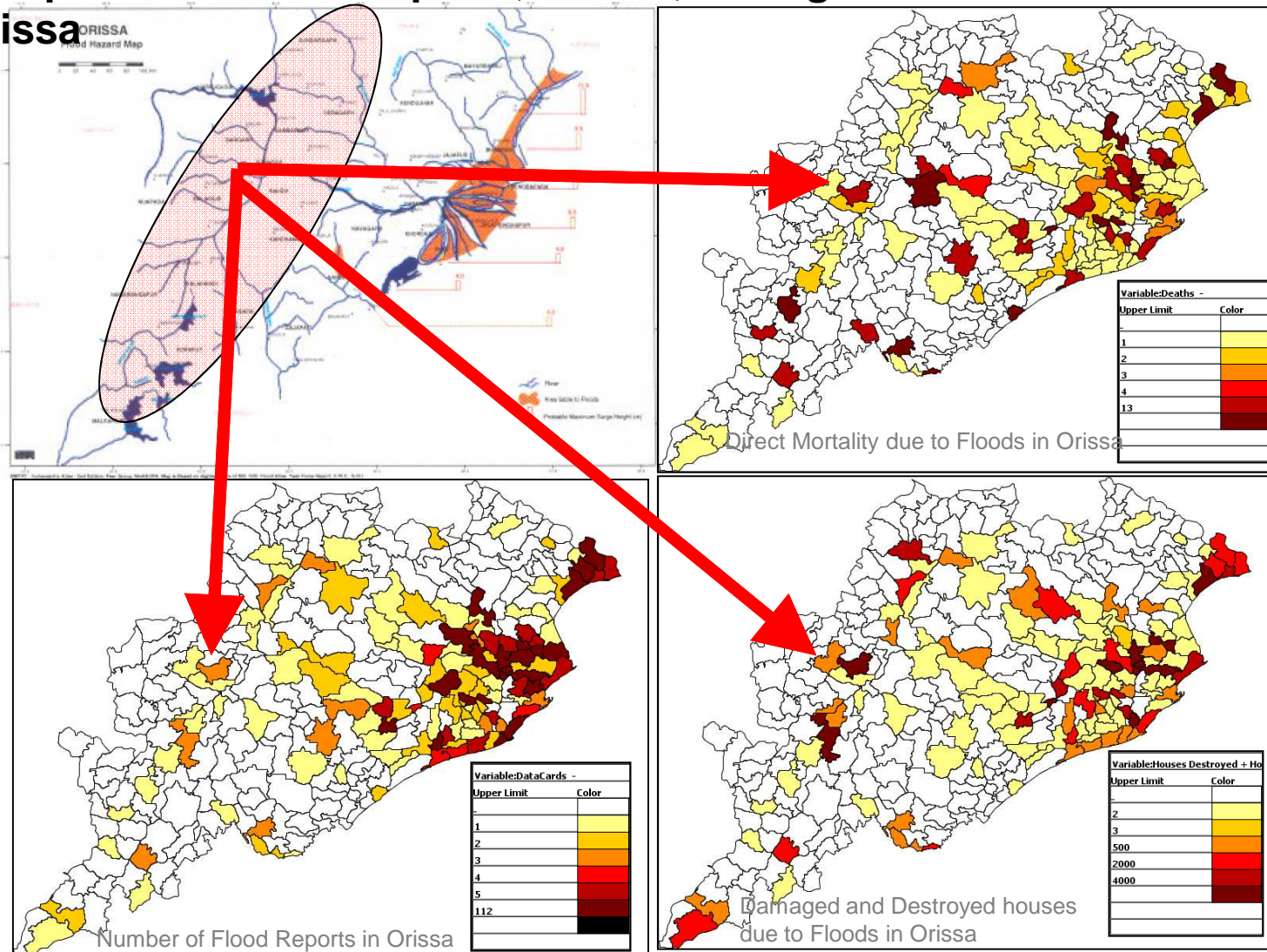
Validate Risk/Hazard maps

Comparison of cyclone reports, deaths, damages and Hazard Atlas – Orissa



Validate Risk/Hazard maps

Comparison of flood reports, deaths, damages and Hazard Atlas – Orissa



Data exchange



DesConsultar on-line - Statistics - Windows Internet Explorer

http://www.desinventar.net/Desinventar/statistics.jsp

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Statistics generated for **I.R. Iran** [r]

Event	DataCards	Deaths	Injured	Missing	Houses Destroyed	Houses Damaged	Victims Affected	Relocated	Evacuated
ACCIDENT	1,816	8,169	9,816	42	29	2	5	163	26
AVALANCHE	10	26	18	0	0	0	0	0	0
DROUGHT	36	0	0	0	0	0	110,000	0	0
EARTHQUAKE	4,527	198,286	65,741	2,345	105,214	200,340	2,331,325	2,260	503,170
EPIDEMIC	1	8	0	0	0	0	0	0	0
EXPLOSION	183	347	939	0	30	37	27	5	0
FIRE	1,211	558	1,200	0	102	295	8,085	0	0
FLASH FLOOD	1	0	0	0	500	0	0	0	0
FLOOD	2,081	4,292	14,417	243	31,800	124,440	864	290,915	402,012
FOREST FIRE	25	0	0	0	0	0	0	0	0
FROST	2	4	0	0	0	0	0	0	0
HAILSTORM	60	3	2	0	0	0	0	0	0
LANDSLIDE	138	211	34	13	455	12	0	0	0
LEAK	28	87	211	0	0	0	0	0	0
LIQUEFACTION	1	0	0	0	0	0	0	0	0
OTHER	206	444	166	0	5	54	0	0	0
RAINS	1	0	0	0	0	0	0	0	0
SNOWSTORM	69	31	0	0	0	0	0	0	0
STORM	209	334	44	0	0	10	0	0	0
STRONG WIND	2	0	0	0	0	0	0	0	0
STRUCTURE	28	66	42	0	2	1	0	0	0
THUNDER STORM	94	109	36	0	0	139	0	0	0
TORNADO	1	2	0	0	0	0	0	0	0
TOTAL	10,730	212,977	92,666	2,643	138,137	325,330			

Detailed report exported to Excel (Iran database)

DL_Report[1].xls (Compatibility Mode) - Microsoft Excel

Serial	Event	Code Ostan	Ostan	Code Shahrestan	Shahrestan	Code Bakhsheh	Bakhsheh	Date	Deaths	Injured	Missing
1	EARTHQUAKE	12	Fars	12187	Firuz Abad			1995/02/19	0	0	0
2	EARTHQUAKE	16	Mazandaran	16260	San	16260806	Markazi	1995/01/31	0	0	0
4	EARTHQUAKE	28	Hormozgan	28276	Bandar Abbas	28276796	Markazi	1995/01/28	0	0	0
5	EARTHQUAKE	28	Hormozgan	28276	Bandar Abbas	28276796	Markazi	1995/01/28	0	0	0
6	EARTHQUAKE	27	Bushehr	27324	Bushehr	27324799	Markazi	1995/01/25	0	0	0
7	EARTHQUAKE	07	Chaharmahal Va B	07106	Borujen	07106305	Markazi	1995/01/25	0	0	0
8	EARTHQUAKE	12	Fars	12187	Firuz Abad	12187546	Markazi	1995/01/21	0	0	0
9	EARTHQUAKE	01	Gilan	01312	Rasht	01312811	Markazi	1995/06/06	0	0	0
10	EARTHQUAKE	02	Qazvin	02018	Takestan	02018068	Markazi	1995/01/04	0	0	0
11	EARTHQUAKE	29	Tehran	29317	Tehran	29317809	Markazi	1995/01/03	0	0	0
12	EARTHQUAKE	12	Fars	12194	Mamasani	12194566	Markazi	1995/01/01	0	0	0
13	FLOOD	14	Colostan	14241	Combed Kavus	14241700	Markazi	1993/03/18	0	0	0
14	FLOOD	12	Fars	12191	Lamerd	12191791	Markazi	1993/02/03	0	0	0
15	FLOOD	12	Fars	12194	Mamasani	12194566	Markazi	1993/02/03	0	0	0
16	FLOOD	12	Fars	12190	Larestan	12190554	Markazi	1993/02/03	0	0	0
17	EARTHQUAKE	01	Gilan	01312	Rasht			1994/12/18	0	0	0
18	FLOOD	12	Fars	12186	Fasa	12186542	Markazi	1993/02/03	0	0	0
19	FLOOD	12	Fars	12181	Darab			1993/02/03	0	0	0
20	EARTHQUAKE	21	Khorasan razavi	21127	Kashmar			1994/12/15	0	0	0
21	FLOOD	12	Fars	12179	Jahrom			1995/07/10	0	0	0
22	FLOOD	12	Fars	12187	Firuz Abad			1993/02/03	0	0	0
23	FLOOD	12	Fars	12185	Farashband			1993/02/03	0	0	0
24	FLOOD	12	Fars	12185	Farashband			1993/02/03	0	0	0
25	FLOOD	12	Fars	12188	Ohir Va Karzin			1993/02/03	0	0	0
26	EARTHQUAKE	12	Fars	12190	Larestan	12190554	Markazi	1994/12/13	0	0	0
27	FLOOD	12	Fars	12195	Neyriz			1993/02/03	0	0	0
28	EARTHQUAKE	01	Gilan	01011	Sumeh Sara			1994/12/03	0	0	0
29	FLOOD	28	Hormozgan	28281	Minab			1993/02/03	0	0	0
30	FLOOD	28	Hormozgan	28332	Bandar Lengeh			1993/02/03	0	0	0
31	FLOOD	28	Hormozgan	28276	Bandar Abbas			1993/02/03	0	0	0
32	FLOOD	28	Hormozgan	28278	Gavbandi			1993/02/03	0	0	0
33	EARTHQUAKE	01	Gilan	01011	Sumeh Sara			1994/12/03	0	0	0

Aggregates by event, (Iran). Statistical measures such as Variance, Std Deviation, correlation, etc.

National Disaster Inventories

- Existing (run by Governments, UNISDR, UNDP or Partners)

Asia

–Sri Lanka, Indonesia, Iran, Maldives, Thailand, Nepal, India (Tamil Nadu, Orissa, Andra Pradesh, Uttranchal, Delhi), Lao PDR, Viet Nam, Pacific regional, Syria, Jordan, Yemen



Comparison of data quality with other databases



Comparison of EM-DAT and Desinventar data for Indonesia, 1998-2009 (12 years)

	Events		Deaths		People affected	
	EM-DAT	Desinventar	EM-DAT	Desinventar	EM-DAT	Desinventar
Floods	63	2,624	2,826	1,837	3,525,309	11,943,017
Landslides	29	1,145	1,115	2,864	332,330	458,760
Storms	2	925	4	235	3,715	151,214
Droughts	1	1,152	0	0	15,000	0
Total	95	5,847	3,945	4,936	3,876,354	12,552,991



Thank you

<http://www.desinventar.net/>