



United Nations
International Strategy for Disaster Reduction

DesInventar: Disaster Loss Databases

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Expert Group Meeting on Geo-reference Disaster Risk Management Information System in Asia-Pacific Region

15-17 February 2012
UN Conference Centre, MR#G
Bangkok, Thailand

Sujit Mohanty
UNISDR, Regional Office for Asia Pacific



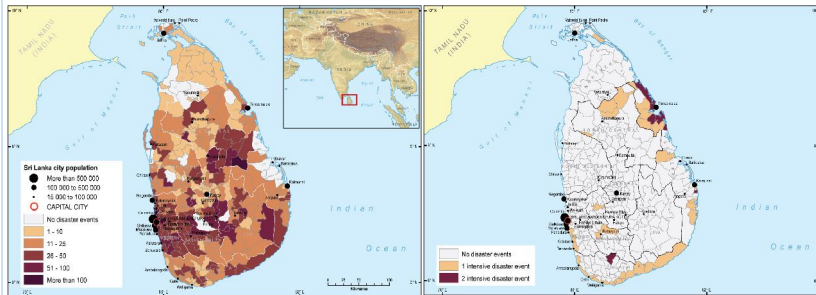
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Disaster Loss databases

- A database of disasters impacts to understand trends and patterns at sub-national level.
- A systematic geo-referenced inventory of small, medium and large-scale disasters.
- A statistical evidence base for vulnerability assessment and priority setting in risk reduction investments.

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Two different spatial footprints



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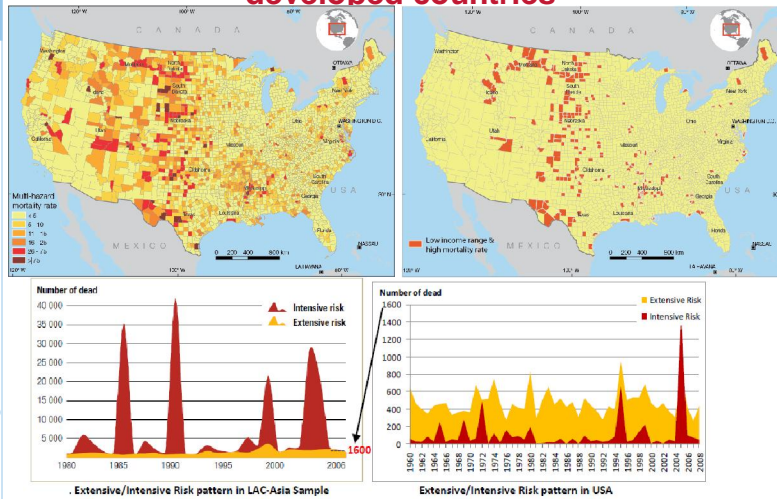
Extensive = frequently occurring, low and medium intensity disasters

Intensive = those infrequent, high intensity and very concentrated spatially

Intensive mortality – Extensive damage

Risk type	Hazard type	Loss reports	%	Deaths	%	Houses destroyed	%	Houses damaged	%
Extensive	Weather-related	121,373	95.9	48,392	15.5	739,002	24.1	3,654,596	48.3
Extensive	Geological	4,259	3.4	2,406	0.8	40,684	1.3	226,545	3.0
Intensive	Weather-related	801	0.6	58,559	18.7	1,618,682	52.7	3,235,176	42.7
Intensive	Geological	187	0.1	203,524	65.0	671,980	21.9	453,094	6.0
TOTAL		126,620	100.0	312,881	100.0	3,070,348	100.0	7,569,411	100.0

Extensive Risk is also the major contributor to mortality in developed countries



What is DesInventar?

- A data collection methodology
- A set of analysis methodologies for Extensive Risks
- A set of fully tested, used and open source software tools
- A disaggregated process of analysis
- As a Historical Disaster database
- As a Post-disaster damage & loss data collection tool

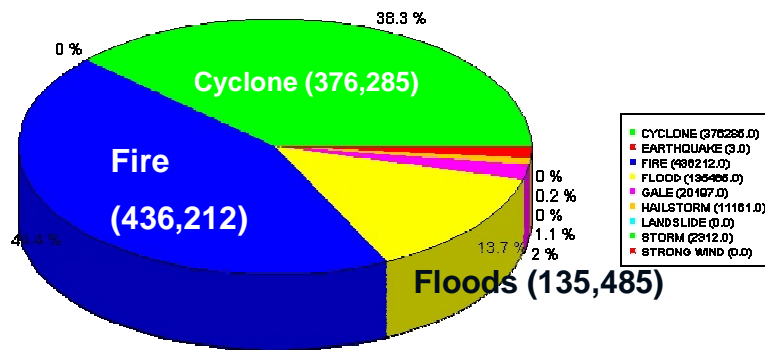
DesInventar records and analyzes the occurrence and effects of natural disasters



Key features

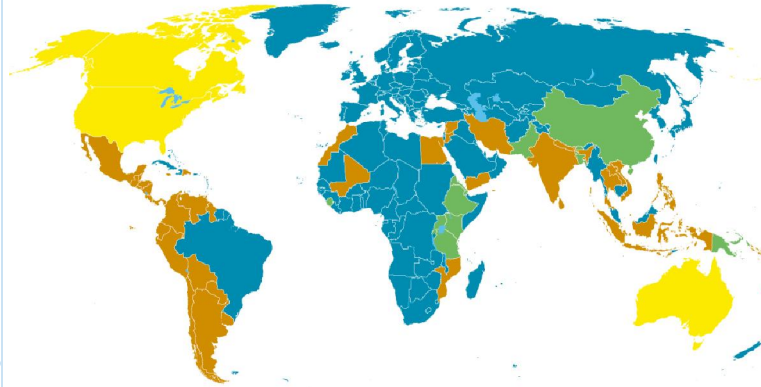
- Simple methodology and easy to set up
- Simple yet powerful visualization tools
- Open Source
- Disaggregated data (sub-national and local level)
- Customizability
- And so on...

India (Orissa)



No of houses destroyed (1970 – 2000)

Systematically account for disaster losses



■ Completed
 ■ Under construction
 ■ Completed - (not DesInventar)

Status of Progress in building National Disaster Datasets
June 2011

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DesInventar in the region

Country/Region	Period	Institution	
East Timor	Profile 2000 - 2011	Indonesian National Board for Disaster Management (BNPB), supported by UNDP Indonesia	More Info
Indonesia [open in original server]	Profile 1970 - 2009	Indonesian National Board for Disaster Management (BNPB), supported by UNDP Indonesia	More Info
I.R. Iran جمهوری اسلامی ایران	Profile 1970 - 2011	Ministry of Interior Iran - supported by UNDP Iran	More Info
Maldives	Profile 1980 - 2007	Ministry of Defense, supported by UNDP	More Info
Nepal	Profile 1970 - 2009	National Society for Earthquake Technology NSET, supported by UNDP Nepal	More Info
Laos	Profile 1970 - 2009	ODM - ADPC	More Info
Mizoran (India)	Profile 1970-2009	State Disaster Management Authority, supported by UNDP India, UNISDR	More Info
Orissa (India)	Profile 1970-2009	Orissa State Disaster Management Authority OSDMA, supported by UNDP India, UNISDR	More Info
Solomon Islands	Profile 1976 - 2009	SOPAC	More Info
Sri Lanka [open in original server]	Profile 1974 - 2009	Ministry of Disaster Management, DMC Sri Lanka - supported by UNDP Sri Lanka	More Info
Tamil Nadu (India)	Profile 1976 - 2009	State Commissioner of Tamil-Nadu, supported by UNDP India, UNISDR	More Info
Uttar Pradesh (India)	Profile 1976 - 2004	State Commissioner, supported by UNDP India, UNISDR	More Info
Vanuatu	Profile 1976 - 2009	SOPAC	More Info
Viet Nam	Profile 1976 - 2009	MARD - FSOC, supported by UNDP	More Info
Myanmar NARGIS (Household Survey)	2008	supported by UNDP	More Info
Indonesia TSUNAMI	2004	supported by UNDP	More Info
Maldives TSUNAMI	2004	supported by UNDP	More Info
Sri Lanka TSUNAMI	2004	supported by UNDP	More Info
Philippines			
Brunei			

Typical contents of a DesInventar Disaster database

The screenshot shows a web-based data entry form for a disaster event. Key sections include:

- Event Details:** Serial: 1234, Date: 2007-11-30, Duration: 2 days, Source: WHO - RHA initial assessment. Location: Comuna 12 - Barrio las Cruces (Cra 75E - Cl. 25sur).
- Effects:** A grid of input fields for various impact categories such as Deaths (12), Missing (3), Injured (5), Relocated (11), Houses Damaged (2), and Houses Destroyed (4).
- Affected Sectors:** Checkboxes for sectors like Transportation, Agriculture, Power and Energy, and Health sector.
- Other Losses:** A text field for additional information.
- Demographics:** A table showing population statistics by age group (under 5, 6-20, 21-60, over 60) and total women.

The actual screen for data capture.

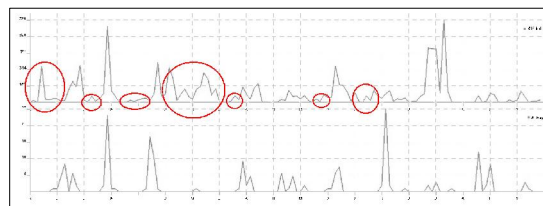
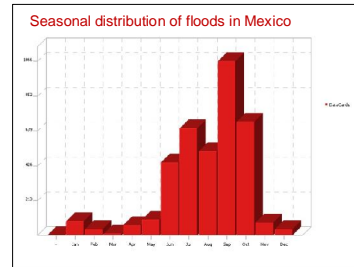
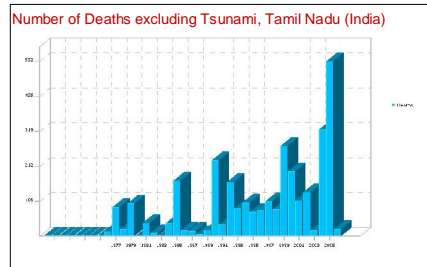
It can be customized by users.

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

Extension (Sectorial detail information)

Temporal Analysis (Trends): distribution of losses over time

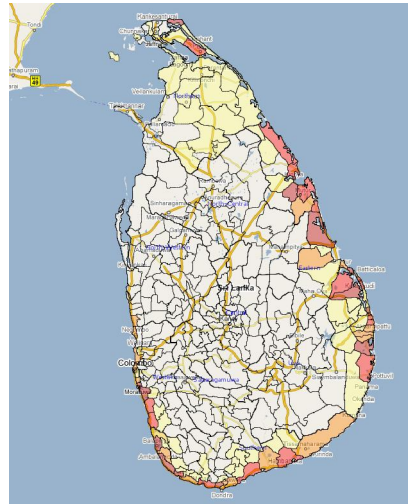
Behaviour of disaster losses is key in understanding trends and essential for monitoring the effectiveness of DRR



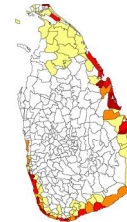
Number of reports of floods and people killed by epidemics in Orissa, India 11 years, showing a high correlation between floods and epidemics.

Ovals show non-related epidemic events.

Spatial Analysis (patterns): distribution of losses over space



Spatial distribution of houses destroyed in Sri Lanka after Tsumani 2004

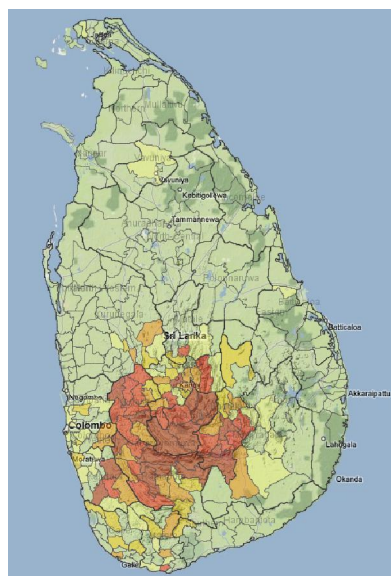


Major Unit	code
20	
04	
020	
055	

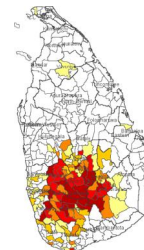
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Spatial Analysis (patterns): distribution of losses over space



Spatial distribution of Landslides (1970-2007)



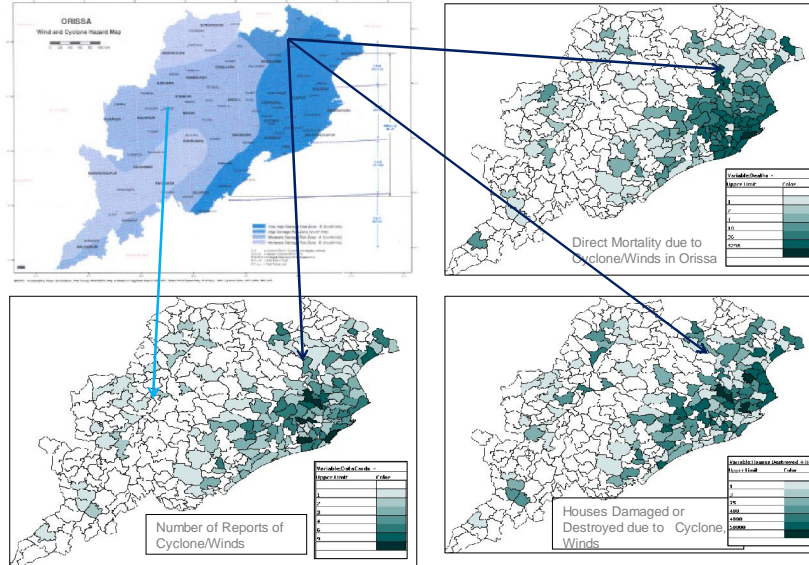
Variable DataCards
0/No Data
<= 1
1 - 2
2 - 5
5 - 10
10 - 50
> 50

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Historical data used to validate Risk/Hazard maps

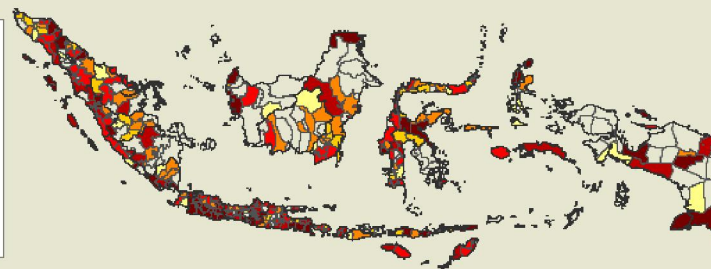
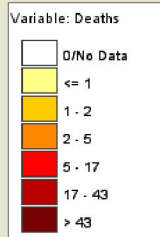
Comparison of Cyclone/wind reports, deaths, damages and Hazard Atlas - ORISSA



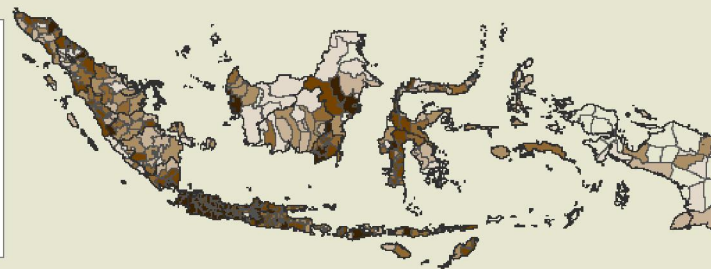
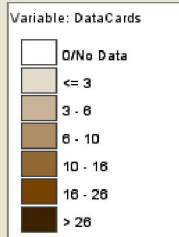
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Spatial distribution

Deaths



DataCards



Issues and challenges

- Geographic coverage
- Quality and availability of historical data
- Economic loss value data
- Country specific customization and disaggregation
- Disaggregated data for gender, age group, loss value etc. are still not common

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Desinventar
Disaster Information Management System

ISDR GAR 2011 UNDP LAREL

WELCOME to the official site of Desinventar, a free, open source Disaster Information Management System

Search

OVERVIEW

What is Desinventar?
Basic Methodology
Definition of Effects
Data Sources
Disaster Reporting Format
Want Desinventar in your country?

Disaster type definitions

Cyclones
Tornado
Storm/Gale
Extreme Rain
Lightning/Electrical Storm
Hailstorm
Snowstorm
Cold Wave
Frost
Flood
Urban flood
Flash flood
Shoal
Landslide
Avalanche
Drought
Heat Wave
Sandstorms
Urban or industrial fire
Forest fire

AVAILABLE DATASETS

Americas

- Argentina (GAR11)
- Bolivia
- Chile
- Colombia
- Costa Rica
- Ecuador
- El Salvador
- Guatemala
- Honduras
- Jamaica
- Mexico
- Nicaragua
- Trinidad & Tobago
- Panama
- Paraguay
- Peru

Asia Pacific

- India (Orissa)
- India (Tamil Nadu)
- India (Uttaranchal)
- India (Uttar Pradesh)
- India (Mizoram)
- Indonesia
- Iran
- Japan
- Maldives
- Nepal
- Solomon Islands
- Sri Lanka
- Syria (GAR11)
- Timor Leste
- Vietnam

Africa

- Djibouti
- Egypt
- Mali
- Morocco
- Mozambique

DOCUMENTATION

- Executive Summary
- Tutorial
- Interactive Help
- Preliminary Analysis
- Analysis Module - User Manual
- Admin Module - User Manual
- Installation Guide
- Full list - Other languages

Recent Publications

- Global Assessment Report 2011
- Global Assessment Report 2009
- Sri Lanka National Report on Disaster Risk ...
- Impact of disasters on children
- Extensive Risk Analysis GARP 11

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



THANK YOU