

# **Making informed decisions for effective DRM programmes and actions**

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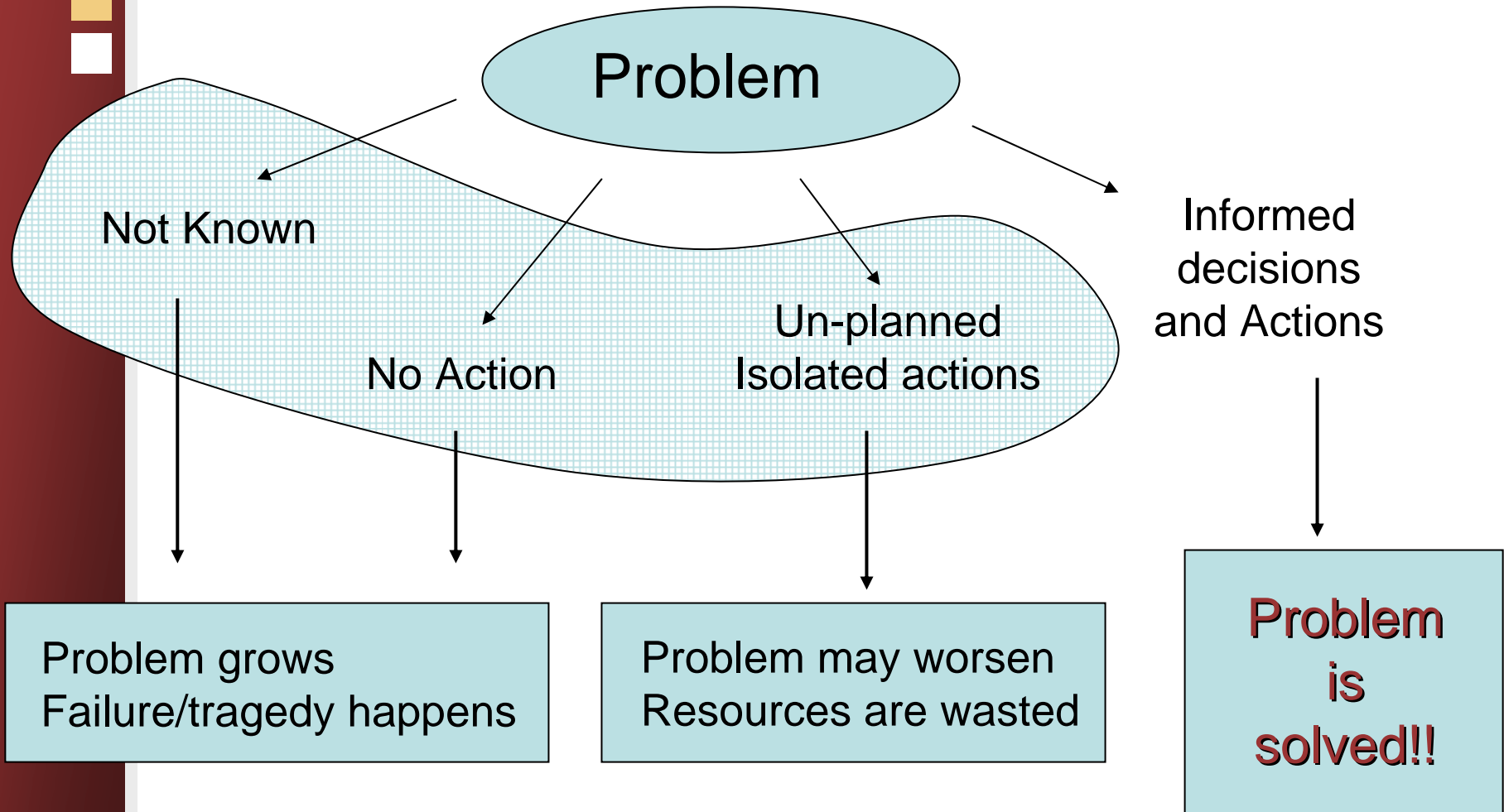
# Overview



- Why and how we should do risk assessment
- Applications for effective DRM
- Exercise on country situation

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# Conceptual Framework



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## “Development” of Nicaragua, Central America

From 1991 to 2004 Nicaragua received about US\$ 500 million per year in international assistance. However...

- 80% of public investment is paid by international assistance
- Nicaragua’s exports amount to just 35% of the country’s imports. Permanent deficit and increasing debt

Nicaragua remains completely dependent on foreign assistance

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# Lack of evaluation, monitoring

Many Projects - no long-term processes



*The Mayor of Managua, Dionisio Marengo, advised more than 5 thousand people living by the shores of lake Xolotlán to evacuate their houses because the Municipality has not the capacity to protect their lives when strong storms happen (Prensa Grafica,2005)*

7 yrs after Mitch, there is no way to measure progress in DRR

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# Effective Risk Management



- Learn from the past (disaster loss information)
  - Causes, vulnerabilities, response, long-term impact
- Accurately estimate future losses (Risk assessment)
  - Estimate potential losses accurately, make informed decisions
- Risk Management
  - Acceptable risk level
  - Risk reduction capacity
  - Risk transfer → Insurance, other ways
  - Monitoring of changes
  - Evaluation of strategies → Corrections

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# Why Risk Assessment?



- To understand the problem
  - Size
  - Characteristics
  - Distribution
  - Causes
  - Feasible solutions → Strategies
- To monitor progress
  - Impact
  - Efficiency
- To evaluate Strategies
  - What is working and what is not?
  - Necessary corrections

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# How to do Risk Assessment?



- Risk is a dynamic process
  - Urbanization
  - Migration
  - Globalization
  - Normal growth
- Risk Assessment is a continuous process
  - Periodic → Monitoring and evaluation
  - Sustainable
  - Capable of being improved → New information
- Not a one-time effort
- Local capacity is the only way to guarantee sustainability

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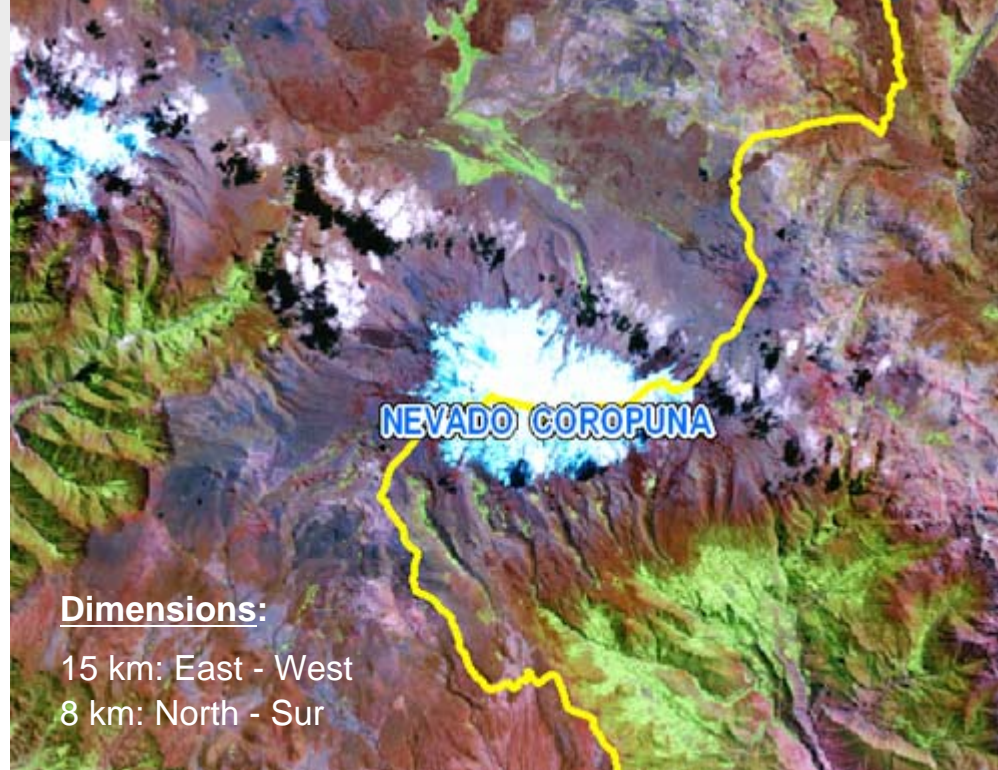


## Applications of Disaster Risk Assessment

- Climate change adaptation
- Urban development planning
- Support to humanitarian activities
- New policy for High-Risk Countries

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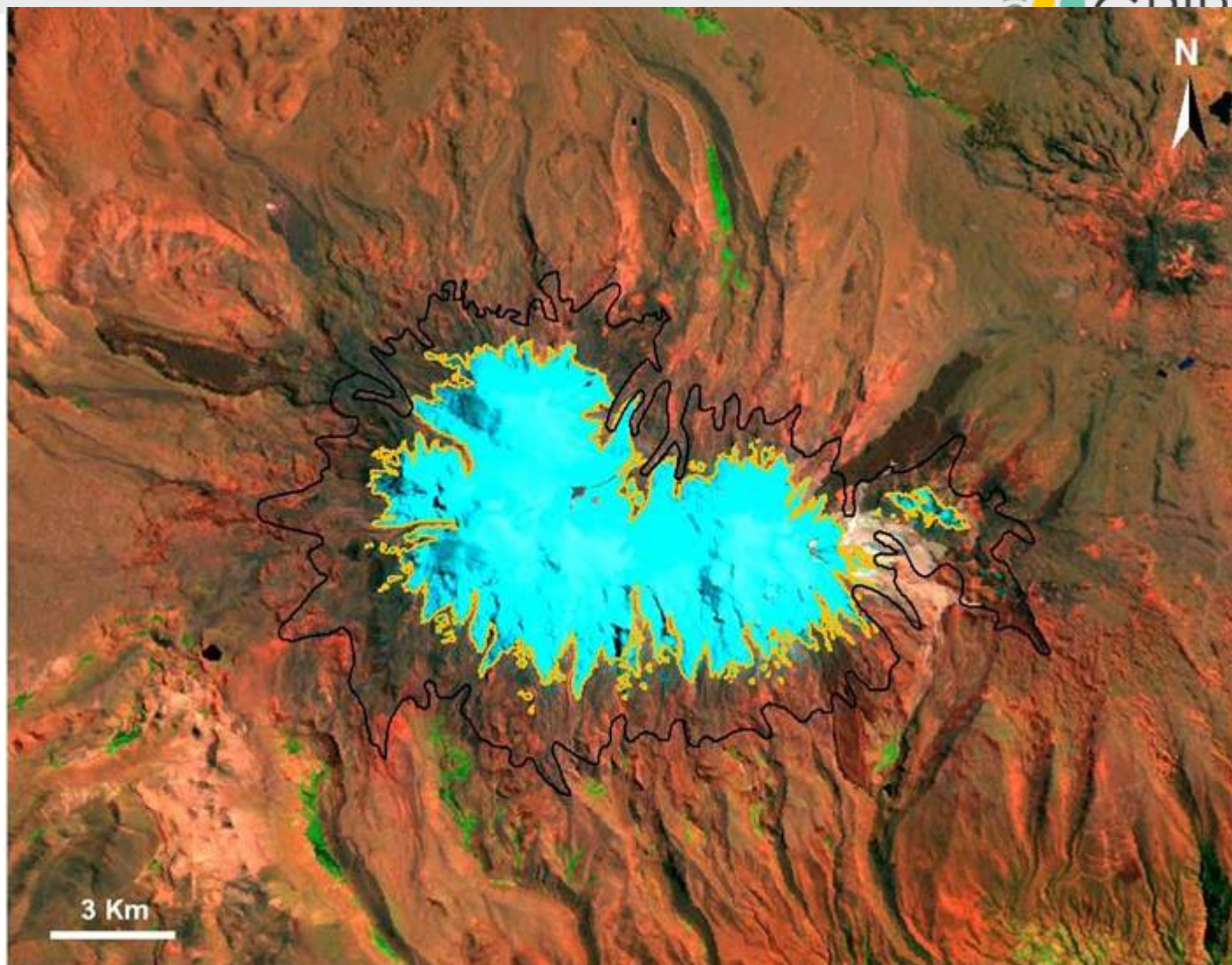
# Climate change adaptation Arequipa-Peru



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Nevado  
Coropuna  
glacier  
coverage  
for 1955  
(outline in  
black) and  
2003 (in  
orange  
outer  
boundary).



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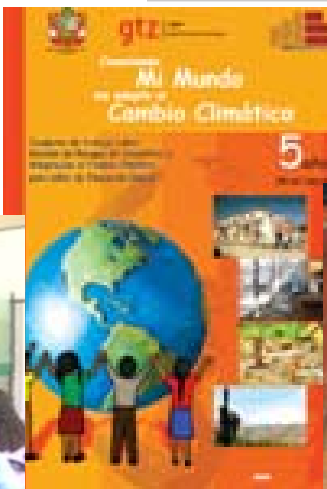
# Tangible results



Incorporation of adaptation in development plans



Guidelines for CC adaptation in agricultural production



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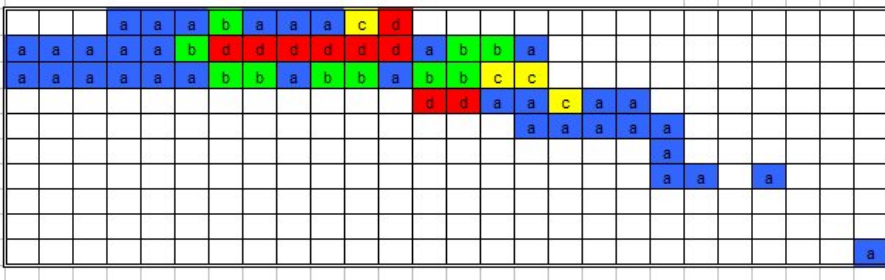


# Incorporation of DRM in development planning

## Antofagasta, Chile

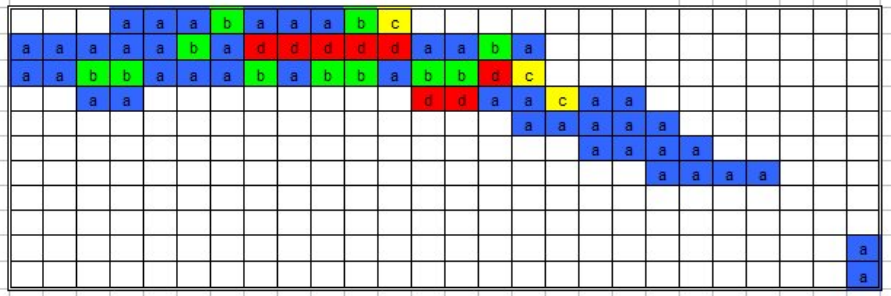


Map Using Automatic Range (Cell characters show ColorID)



**2003**

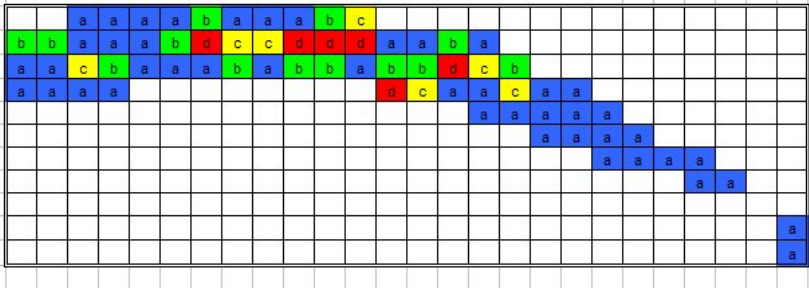
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**2007**

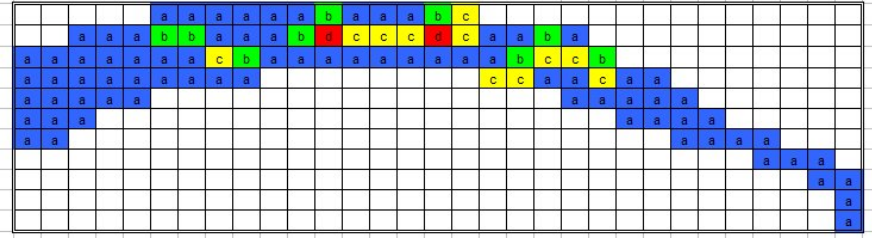
**Estimating  
current and future  
risk**

Map Using Automatic Range (Cell characters show ColorID)



**2012**

Map Using Automatic Range (Cell characters show ColorID)



**2022**

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# Engaging all stakeholders in the process



**Working session with city planners**

**Public seminar to discuss the project results**



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# Planning development

## New land-use zoning considering levels of risk

■ CRITICO 
 ■ ALTA 
 ■ MEDIA 
 ■ BAIXA

NIVEL DE RISCO - Antofagasta Chile



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# Support to humanitarian activities



International Federation  
of Red Cross and Red Crescent Societies

## Risk Mapping for Strategic Planning of Shelter Response in Tijuana, Baja California, México.



H. AYUNTAMIENTO  
TIJUANA B.C.

AGREEMENT OF COOPERATION  
between  
UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME

**Antonio Rosquillas and Luis  
Moreno**  
Municipio de Tijuana

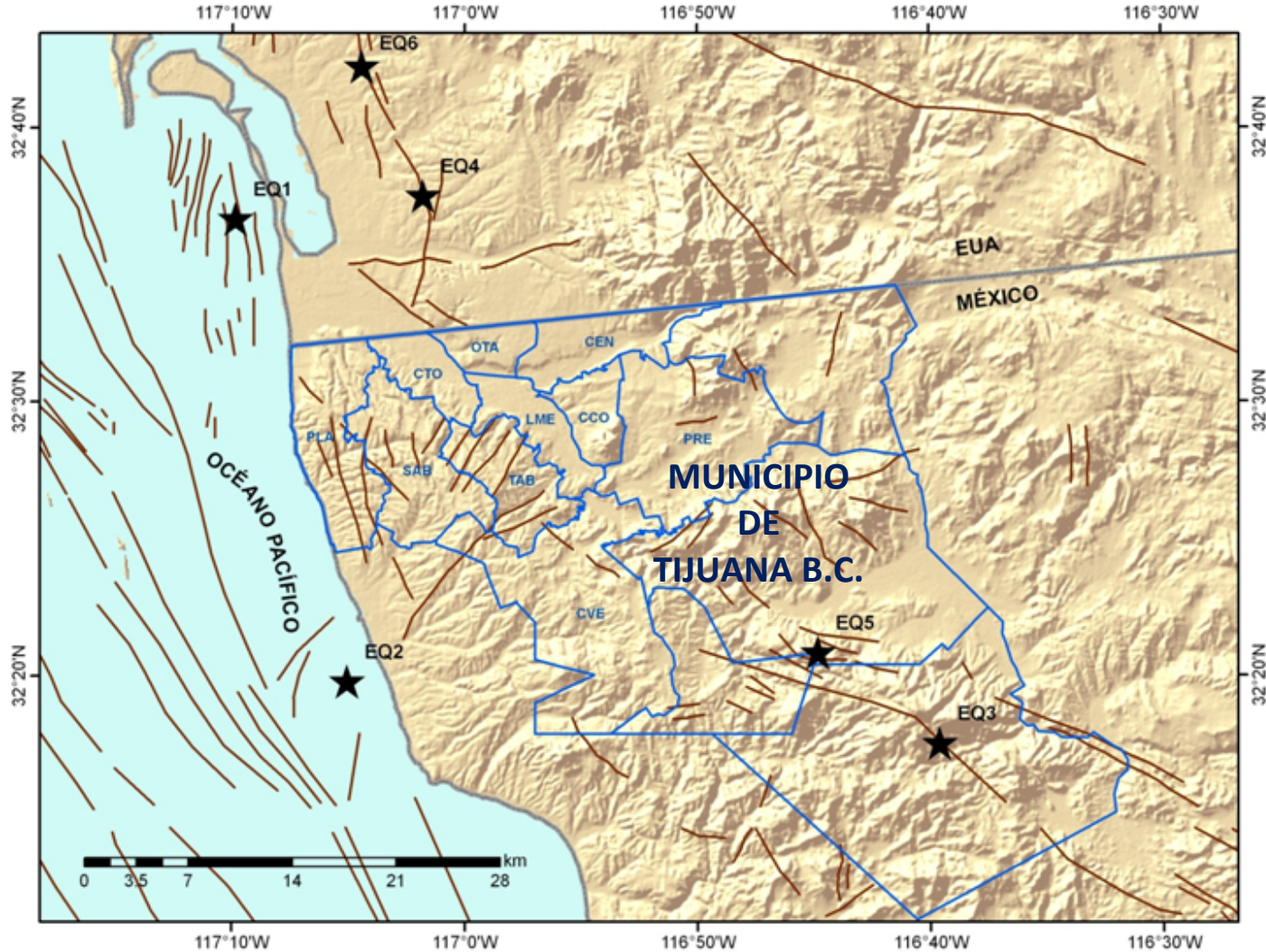


CENTRO DE INVESTIGACIÓN  
CIENTÍFICA Y DE EDUCACIÓN  
SUPERIOR DE ENSENADA.

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# 6 possible earthquakes

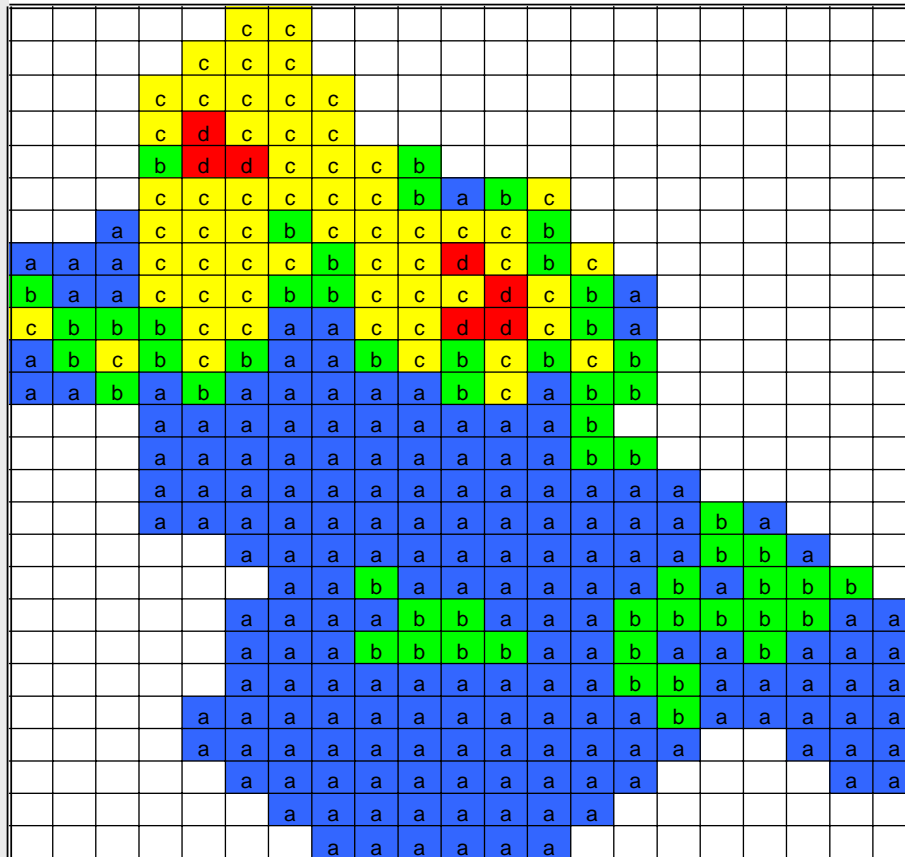


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# Damage Evaluation

## Estimated distribution of buildings damage

Color ID	Automatic Range		Manual Range	
	From	To	From	To
a	0	18	0	18
b	18	35	18	35
c	35	53	35	53
d	53	70	53	70



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# Results

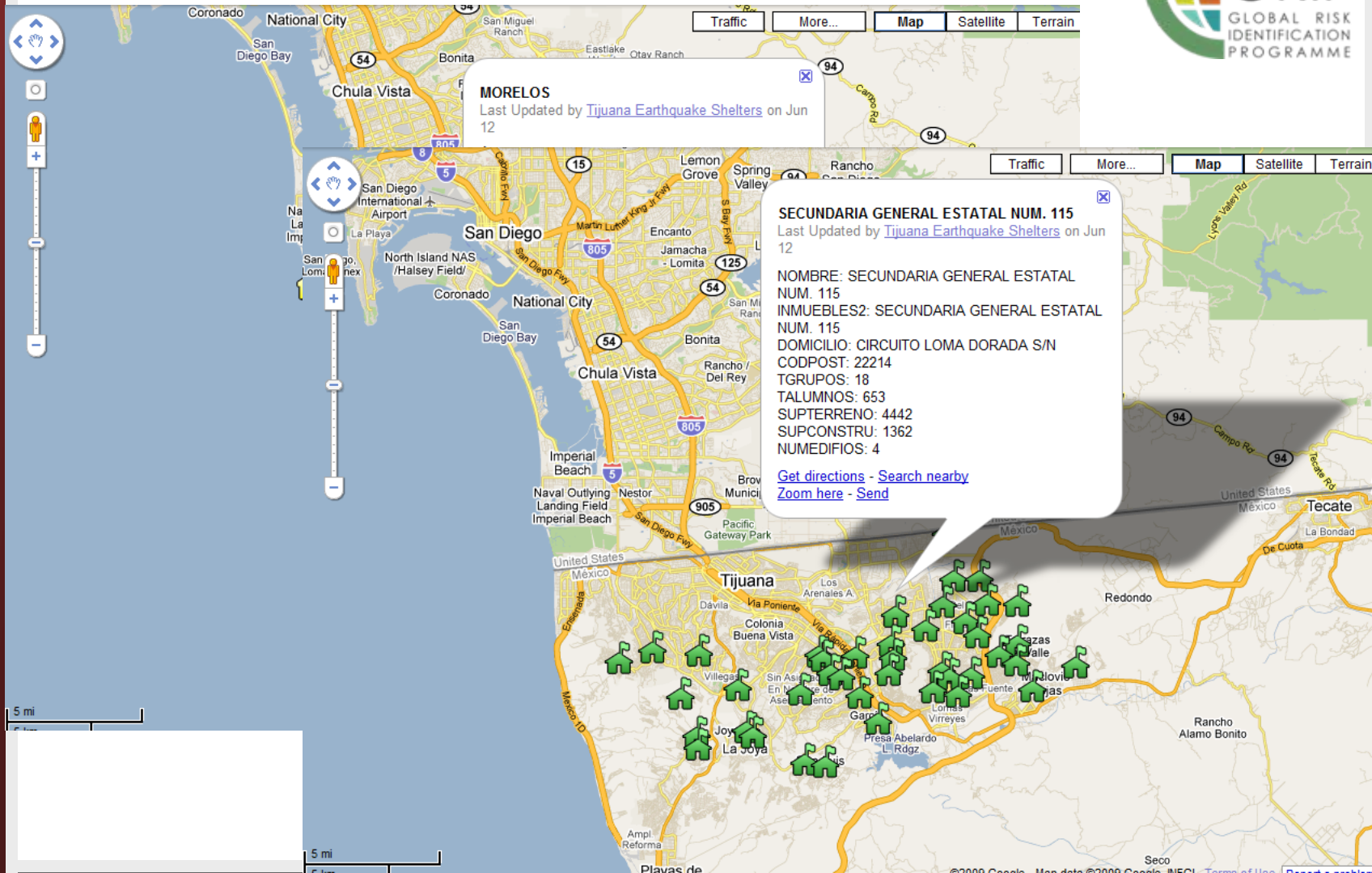
	SAB	CEN	CTO	CCO	CVE	LME	PRE	OTA	PLA	TAB	Total
EQ1	10,000	4,622	8,917	3,282	1,226	5,839	7,276	4,497	6,372	6,246	<b>58,277</b>
EQ2	12,392	4,593	6,853	3,661	3,184	7,012	8,576	3,341	5,335	9,503	<b>64,449</b>
EQ3	3,025	2,792	1,942	2,400	1,360	2,751	8,457	1,266	947	3,648	<b>28,588</b>
EQ4	12,465	10,140	11,085	6,676	1,703	9,942	15,133	7,984	6,019	10,169	<b>91,316</b>
EQ5	4,986	4,504	2,900	4,289	2,581	5,317	16,561	1,993	1,456	6,338	<b>50,925</b>
EQ6	6,411	6,063	5,761	3,581	1,032	4,979	8,437	3,985	3,216	4,979	<b>48,444</b>

Number of persons with shelter needs estimated  
for the six earthquake scenarios

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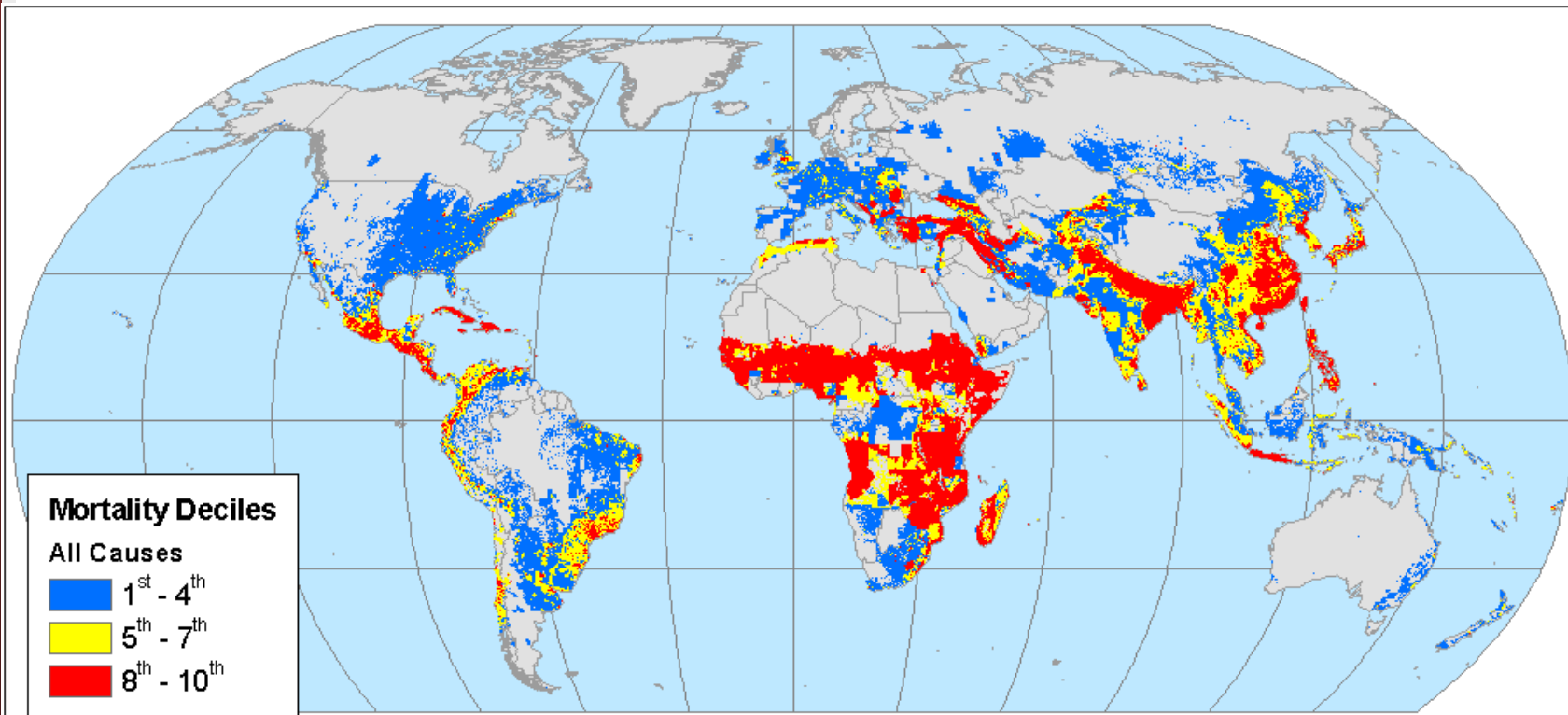
# Shelter plan uploaded on Google Map



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# Global distribution of mortality risk

1992-2003, \$ 2 billion (out of 2.5 billion) of costs of responding to international emergencies went to just 20 countries (OCHA)

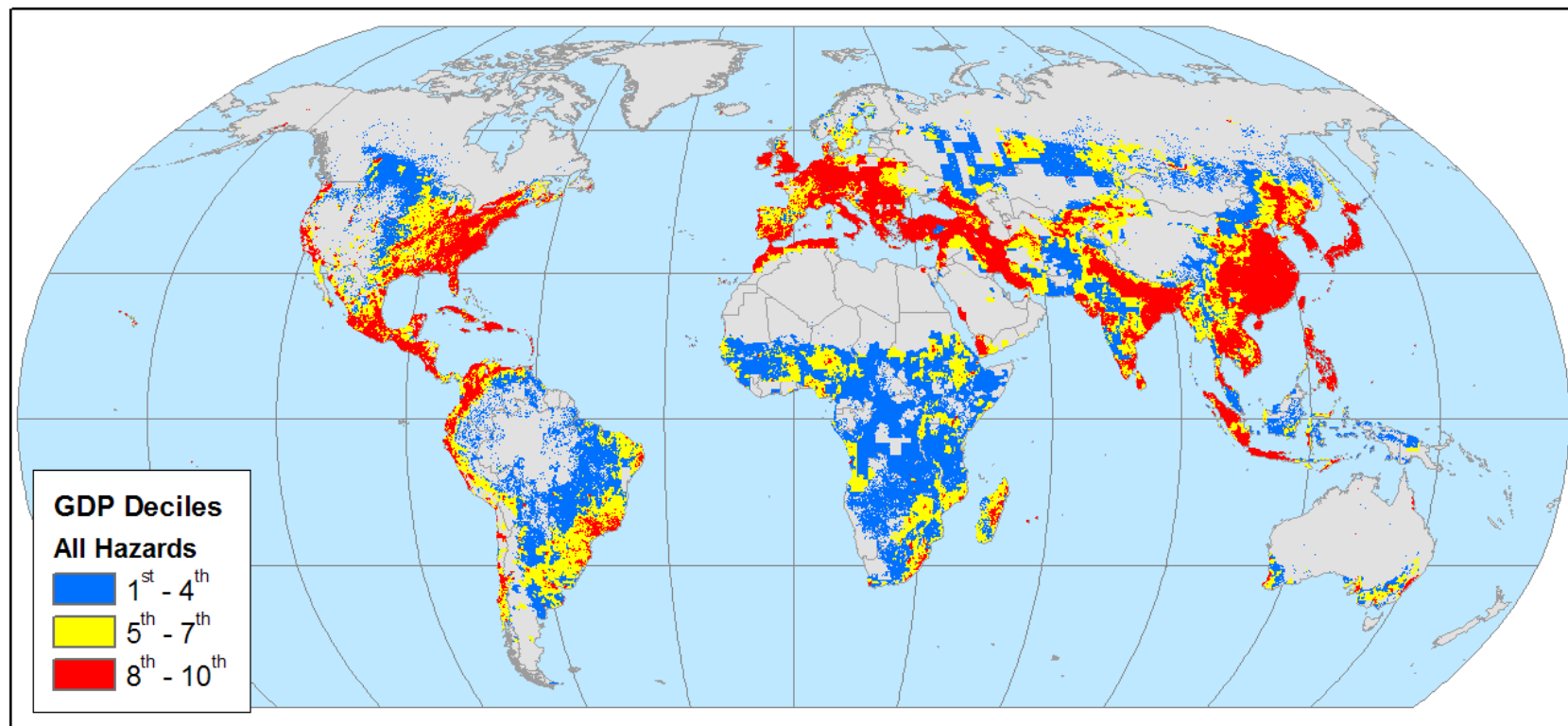


China, India, Bangladesh, Egypt, Mozambique, Turkey, Afghanistan, El Salvador, Kenya, Iran, Pakistan, Indonesia, Peru, Democratic Republic of Congo, Poland, Vietnam, Colombia, Venezuela, Tajikistan, Cambodia

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# Global distribution of financial risk

1980-2003, of \$14.4 billion in WB emergency recovery loans, \$12 billion went to just 20 countries (WB)



India, Turkey, Bangladesh, Mexico, Argentina, Brazil, Poland, Colombia, Iran, Honduras, China, Chile, Zimbabwe, Dominican Republic, El Salvador, Algeria, Ecuador, Mozambique, Philippines, and Vietnam

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# Understanding the problem



- Is there a National Risk (not Hazard) Assessment to understand magnitude, geographic distribution, characteristics, and causes of risk?
- If yes, how was this assessment performed? (By local institutions? By consultants?)
- How old is the assessment? Has it been updated? Is there local capacity to perform regular updates?

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# Learning from the past



- Is there any systematic way to analyze past disasters, draw lessons and incorporate this knowledge in DRR National Plans?
- Is there any organization/institution in charge of collecting, organizing and analyzing disaster damage and loss information?

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- Are the DRR activities implemented following a National Plan? Or are they independent, isolated activities?
- Resources for Disaster Risk Reduction activities are scarce. Are cost-benefit analyses performed to decide activities to be implemented and optimize resources?
- Are there mechanisms to control systematically the implementation of Disaster Risk Reduction activities to ensure coordination, avoid duplication and maximize impact?

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Are impact evaluations performed for DRR activities? Or just evaluations of projects implementation?

Is there any way to know how the present risk compares (higher? Lower?) to risk 5 years ago?

Are there periodic evaluations of the DRR National Plan to see what works and what does not?

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# Local risk assessment



Are there risk assessments for the main urban areas (cities) of the country? How were they done? By whom? Do they follow any guidelines to ensure quality or compatibility?

If those assessments exist, have their results been utilized for the preparation of City Risk Reduction Action Plans? Contingency Plans? Shelter Plans? If not, how have emergency plans, for example, been developed?

Cities prepare Development Plans that guide their growth in the coming years (usually 20-25 years). Have the Development Plans of cities in your country been developed incorporating disaster risk considerations? Any analysis on whether those development plans would result into unacceptably high levels of risk?

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