

# مشروع تخفيف مخاطر الزلازل في فلسطين

**Support Action for Strengthening  
Palestinian- administrated Areas capabilities for  
seismic Risk Mitigation  
(SASPARM)**

# The Role of SASPARM Project on Building the Resilience of the Palestinian Community to Disasters

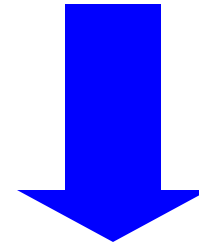
بناء قدرات المجتمع الفلسطيني لمواجهة الكوارث – مشروع  
تخفيف مخاطر الزلازل في فلسطين

# General Introduction

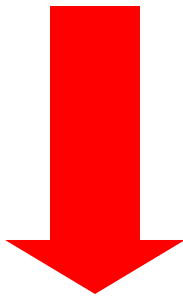
## مقدمة عامة

## Risk Assessment    تقييم المخاطر

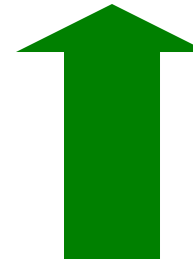
المخاطر = مصدر الخطر \* قابلية الاصابة  
القدرة



**Risk** = Hazard \* Vulnerability



Capacity



## Disaster and Development

## العلاقة بين التقدم/التطور والكوارث

### Development التطور

يمكن ان يساهم التقدم في  
زيادة قابلية الاصابة  
(التعرض)

يمكن ان يساهم التقدم في  
الحد من قابلية الاصابة  
(التعرض)

Negative

Positive

Development  
can increase  
vulnerability

Development  
can reduce  
vulnerability

Disaster can  
interrupt/destroy  
the development  
process

Disaster can  
improve/provide  
development  
opportunities

يمكن ان توقف/تدمر  
الكارثة عملية التطور

يمكن ان تعطي  
الكارثة فرصة  
للتقدم/للتطور

### Disaster الكارثة

# Elements of Risk عناصر المخاطر





## The implementation strategies of risk reduction programs

استراتيجيات تنفيذ برامج الحد من المخاطر

### Stop

Increasing the risk  
for new  
construction and  
infrastructures

ايقاف

زيادة المخاطر في المباني  
ومنشآت البنى التحتية الجديدة

### Start

Decreasing the  
unacceptable risk  
for existing  
constructions and  
infrastructures

البدء

في تخفيض المخاطر غير المقبولة  
للمباني ومنشآت البنى التحتية  
القائمة

### Continue

Preparing for the  
consequences of  
expected hazards

الاستمرار

الاستمرار في التحضير لعواقب  
الأخطار المحتملة

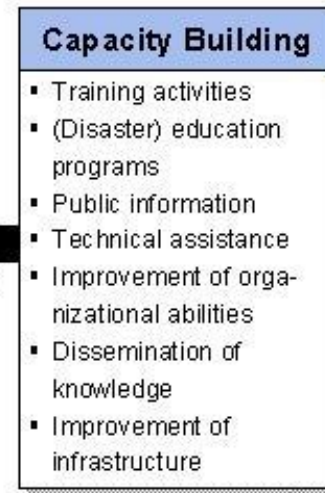
Examples from ME and ....



## الحكم الرشيد



## بناء القدرات



مفتاح للتنمية المستدامة  
والحد من مخاطر الكوارث

Examples from ME and .

# **Risk Assessment and Seismic Risk Mitigation...**

## **What ...and How.....??**

# Risk Assessment تقييم المخاطر

A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage

The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard

$$\text{Risk} = \frac{\text{Hazard} * \text{Vulnerability}}{\text{Capacity}}$$

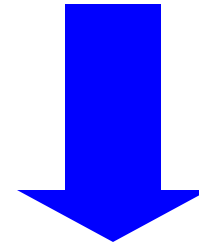
The combination of the probability of an event and its negative consequences

## Capacity

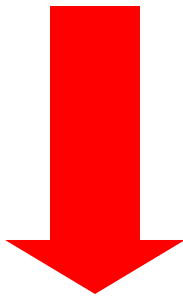
The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals

## Risk Assessment    تقييم المخاطر

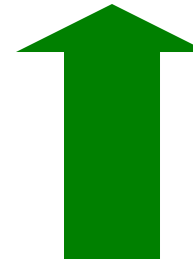
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**Risk** = Hazard \* Vulnerability

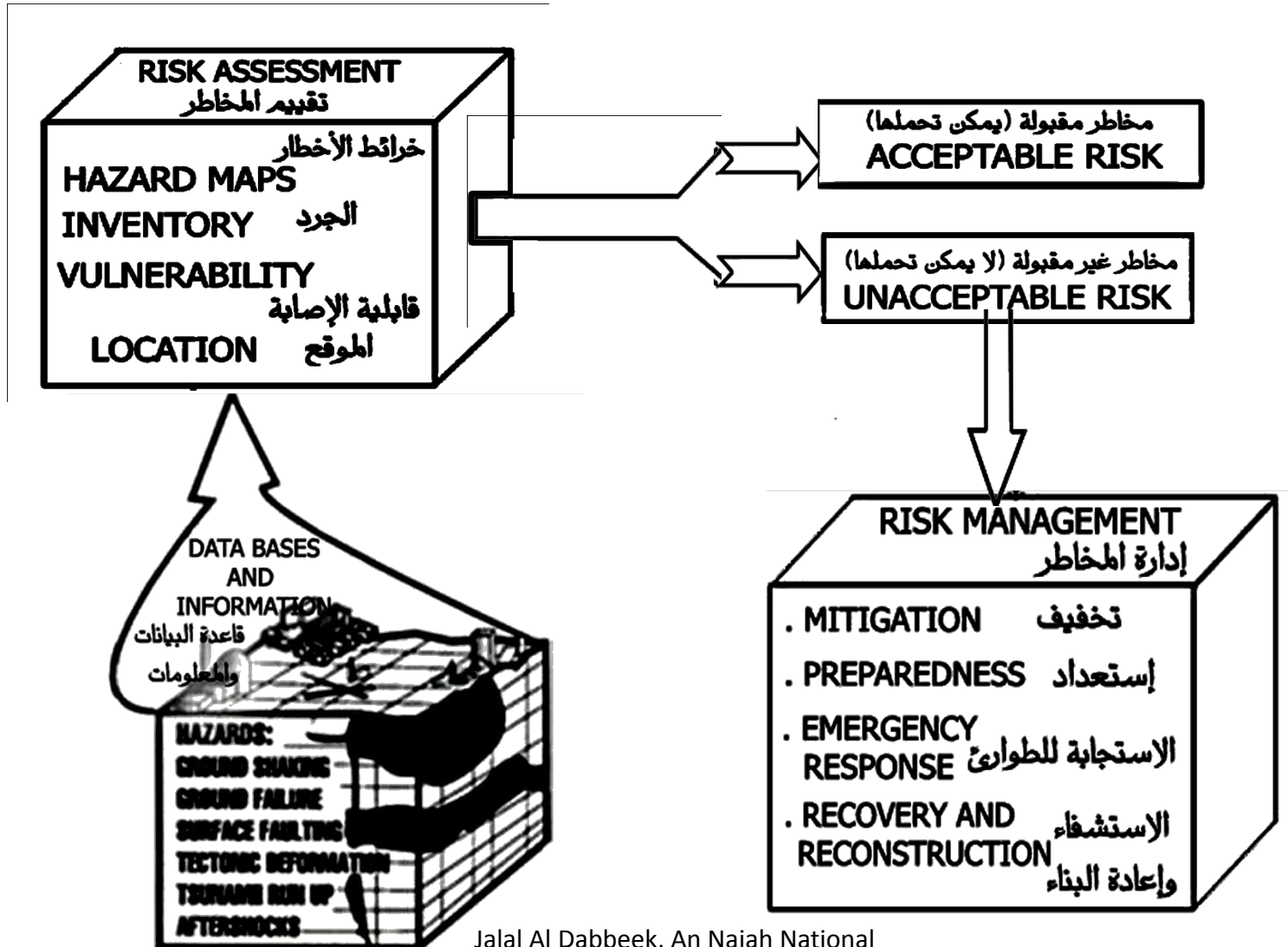


Capacity



$$[R] = [H] * [VUL]$$

# Risk Assessment and Risk Management



# What is Disaster Management?

**Preparedness** -- activities prior to a disaster.

**Examples:** preparedness plans; emergency exercises/training; warning systems.

**Response** -- activities during a disaster.

**Examples:** public warning systems; emergency operations; search and rescue.

**Recovery** -- activities following a disaster.

**Examples:** temporary housing; claims processing and grants; long-term medical care and counseling.

**Mitigation** - activities that reduce the effects of disasters.

**Examples:** building codes and zoning; vulnerability analyses; public education.



*Source: Information and Communication Technology in Disaster Risk Management - presentation prepared by Sujit Mohanty, Manager-Disaster Information Systems, GOI-UNDP Programme, Ministry of Home Affairs, GOI, 2005*

## Risk Analysis and Ranking

$$[R] = [H] * [VUL]$$

**Risk = probability  $\times$  magnitude**

**Risk = Likelihood  $\times$  Severity**



# Risk Analysis and Ranking

$$[R] = [H] * [VUL]$$

**Risk = probability  $\times$  magnitude**

## Probability

Probability	Descriptor	Description
3	Almost Certain	Expected to occur (within the time period)
2	Likely	Likely to occur (within the time period) under current conditions
1	Unlikely	Could occur (within the time period) if conditions changed moderately

## Magnitude

Magnitude	Descriptor	Description
3	Catastrophic	Massive humanitarian consequences, substantial loss of life expected; humanitarian assistance urgently needed for large population segments; large amounts of commodities needed; additional personnel, administrative, and technical expertise urgently needed
2	Major	Humanitarian situation threatened for large population segments; some loss of life expected; humanitarian assistance likely needed to handle emergency; substantial commodities and additional staff and technical expertise likely to be needed
1	Moderate	Humanitarian situation is threatened for potential target groups; intervention may be needed, particularly for traditionally vulnerable groups; Local entities can likely respond with existing staff and personnel structures

# Risk Ranking

**Probability = 3**

**Magnitude = 3**

**Risk = probability  $\times$  magnitude = 9 = High Risk**

Each hazard is assigned a risk according to the matrix:

Probability x Magnitude	Catastrophic	Major	Moderate
Almost certain	9	6	3
Likely	6	4	2
Unlikely	3	2	1

## Interpretation of the Results

***High Risk***

***Score = 9 – 6***

Expected losses warrant attention by senior management at all levels and detailed inclusion in the Plan. In order to ensure adequate preparedness, coordination with the other pertinent government entities, key stakeholders, and other UN and NGO/IO response agencies in contingency planning processes is highly encouraged.

## Interpretation of the Results

***Moderate Risk***

***Score = 4 – 3***

**Hazard merits attention, scenario developed, and included in the Plan. Response may be of a magnitude that is well within the capacity of existing staff and personnel. Coordination with the other pertinent government entities, key stakeholders, and other UN and NGO/IO response agencies in-country may be warranted.**

***Low Risk***

***Score = 2 – 1***

<b>Hazard severity</b>	<b>Definition</b>	<b>Points rating</b>
<b>Very high</b>	Causing multiple deaths and widespread destruction eg. fire, building collapse.	<b>5</b>
<b>High</b>	Causing death, serious injury or permanent disability to an individual.	<b>4</b>
<b>Moderate</b>	Temporary disability causing injury or disease capable of <u>keeping an individual off work for three days or more</u> and reportable under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995).	<b>3</b>
<b>Slight</b>	Minor injury, which would allow the individual to continue work after first aid treatment on site or at a local surgery. The duration of the stoppage or treatment is such that the normal flow of work is not seriously interrupted.	<b>2</b>
<b>Nil</b>	Very minor injury, bruise, graze, no risk of disease.	<b>1</b>

<b>Hazard likelihood</b>	<b>Definition</b>	<b>Points rating</b>
<b>Inevitable</b>	If the work continues as it is, there is almost 100% certainty that an accident will happen, for example: <ul style="list-style-type: none"> <li>• A broken stair or broken rung on a ladder</li> <li>• Bare, exposed electrical conductors</li> <li>• Unstable stacks of heavy boxes</li> </ul>	<b>5</b>
<b>Highly likely</b>	Will happen more often than not. Additional factors could precipitate an incident but it is still likely to happen without this additional factor.	<b>4</b>
<b>Possible</b>	The accident may occur if additional factors precipitate it, but it is unlikely to happen without them.	<b>3</b>
<b>Unlikely</b>	This incident or illness might occur but the probability is low and the risk minimal.	<b>2</b>
<b>Remote possibility</b>	There is really no risk present. Only under freak conditions could there be any possibility of an accident or illness. All reasonable precautions have been taken - This should be the normal state of the workplace.	<b>1</b>

<b>Risk Rating Score</b>	<b>Action</b>
1-4	Broadly acceptable - No action required
5-9	Moderate - reduce risks if reasonably practicable
10-15	High Risk - priority action to be undertaken
16-25	Unacceptable -action must be taken IMMEDIATELY

# Risk Rating Matrix

	Likelihood				
Impact	Rare	Unlikely	Possible	Likely	Almost certain
Catastrophic	moderate	moderate	high	critical	critical
Major	Low	moderate	moderate	high	critical
Moderate	Low	moderate	moderate	moderate	high
Minor	very low	low	moderate	moderate	moderate
Insignificant	very low	very low	low	low	moderate



## **Reporting/Review Arrangements**

Risk Rating 1-4	Very low risks: Risk subject to aggregate review, to be monitored by Directorate.
Risk Rating 5-10	Low risks: are acceptable to the Trust, any actions required to reduce risk will be responsibility of Directorate to fund.
Risk Rating 15-30	Moderate risks: copies of risk assessment forms, along with timetable and action plans will be agreed and monitored by the Executive Team
Risk Rating 40-60	Significant risks: will be reported to the Finance, Corporate and Commissioning Group along with proposed treatment plans, for action. Actions to be implemented as per the remedial plan and within 3 months where possible.
Risk Rating 75	High risks: will be reported to the Audit Committee, with proposed risk remedial plans to mitigate the risk. Actions to be implemented as per the remedial plan and within 1 month where possible.

- **Disaster Risk Mitigation / Seismic Risk Mitigation is a National responsibility....,**
- **Holistic Approach...**

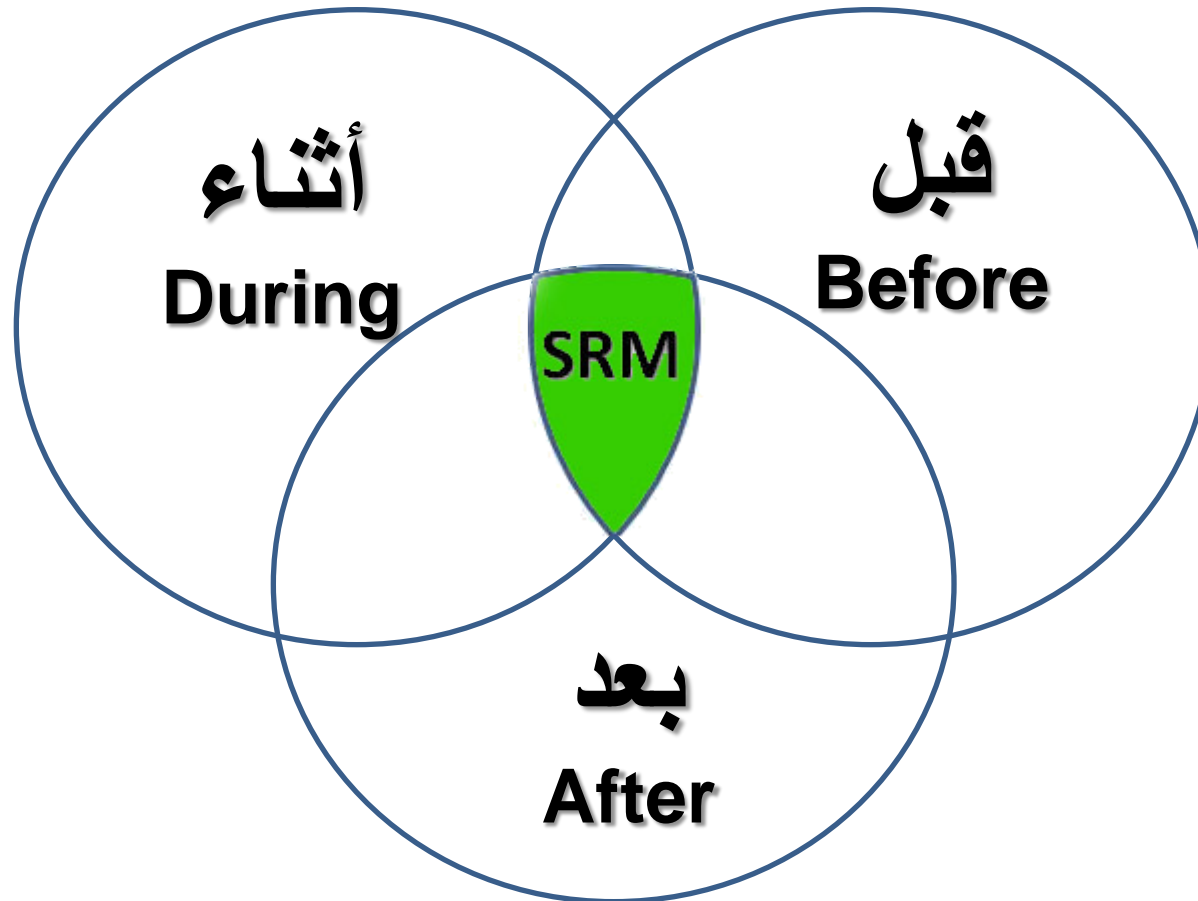
- تخفيف مخاطر الكوارث / تخفيف مخاطر الزلازل .... يعتبر مسئولية وطنية ...

- نهج شامل .....

# Holistic Approach

## Holistic Planning/ Stages

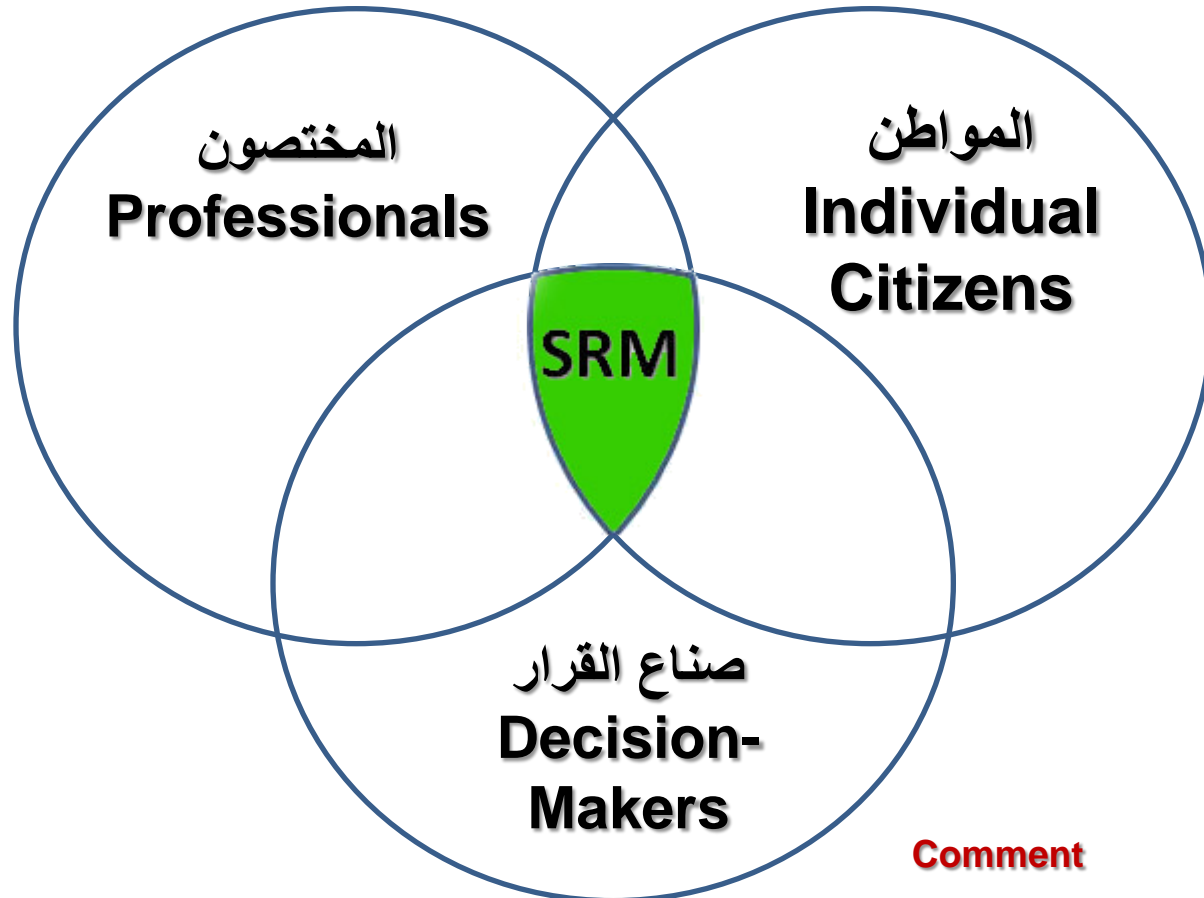
## شمولية التخطيط/ المراحل



# Holistic Approach

**Comprehensiveness of target audiences/ Groups**

**شمولية الجهات المستهدفة**



**SRM :Seismic Risk Mitigation**

**تخفيف مخاطر الزلازل**

**Comment**

**مذكرة التفاهم**

Jalal Al Dabbeek, An Najah National  
University, Palestine

## Hyogo Framework for Action 2005 – 2015

إطار عمل هيوغو في الفترة ما بين (٢٠٠٥-٢٠١٥)

### Buildings the resilience of Nations and Communities to disasters

بناء قدرة الأمم والمجتمعات على مواجهة الكوارث

#### Priorities Action

#### أولويات العمل

- Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.
- Identify, assess and monitor disaster risks and enhance early warning.
- Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
- Reduce the underlying risk factors
- Strengthen disaster preparedness for effective response at all levels.

- ضمان إعتبار الحد من مخاطر الكوارث أولوية وطنية ومحلية قائمة على قاعدة مؤسسية صلبة للتنفيذ
- تحديد مخاطر الكوارث وتقييمها ورصدها وتعزيز الإنذار المبكر
- الاستفادة من المعرفة والإبتكارات والتعليم لبناء ثقافة للسلامة والقدرة على مواجهة الكوارث على جميع المستويات
- الحد من عوامل المخاطر الأساسية
- تعزيز التأهب للكوارث بغية التصدي لها بفاعلية على جميع المستويات.



## تمكين المدن من مجابهة الكوارث: مدينتي تستعد!

### ***Making Cities Resilient: My City is Getting Ready***

الحملة العالمية للحد من الكوارث

**World Disaster Reduction Campaign**

هل مدينتك مستعدة؟

**Is your city ready?**

[www.unisdr.org/campaign](http://www.unisdr.org/campaign)





# Building the resilience of nations and communities to disasters

بناء قدرات الامم والمجتمعات لمواجهة الكوارث



ايجاد البنية الفعّالة و السّياسة الحكيمة و الجهاز القادر

Examples from ME and ..

# THANKS

موقع المركز:  
جامعة النجاح الوطنية  
مركز التخطيط الحضري والحد  
من مخاطر الكوارث  
[www.najah.edu](http://www.najah.edu)

زوروا:  
موقع تخفيف مخاطر الزلازل في  
فلسطين  
[www.sasparm.ps](http://www.sasparm.ps)

[seiscen@najah.edu](mailto:seiscen@najah.edu)

شكراً لحسن اصغائكم