



Université de Jijel

Faculté des sciences et de la technologie

Département d'architecture



Master 1 : Villes, génie urbain et numérisation

Année universitaire 2024- 2025

Cours : Risques et résilience urbaine

Risques et résilience urbaine

Classification des Risques :



•Risques Naturels

 Swiss Re

Mind the risk

A global ranking of cities under threat from natural disasters

650 millions de citoyens sont exposés aux risques naturels:

- Inondation: 380 millions
- Séismes : 280 millions
- Tempêtes : 160 millions

Inondations

People potentially affected by river floods



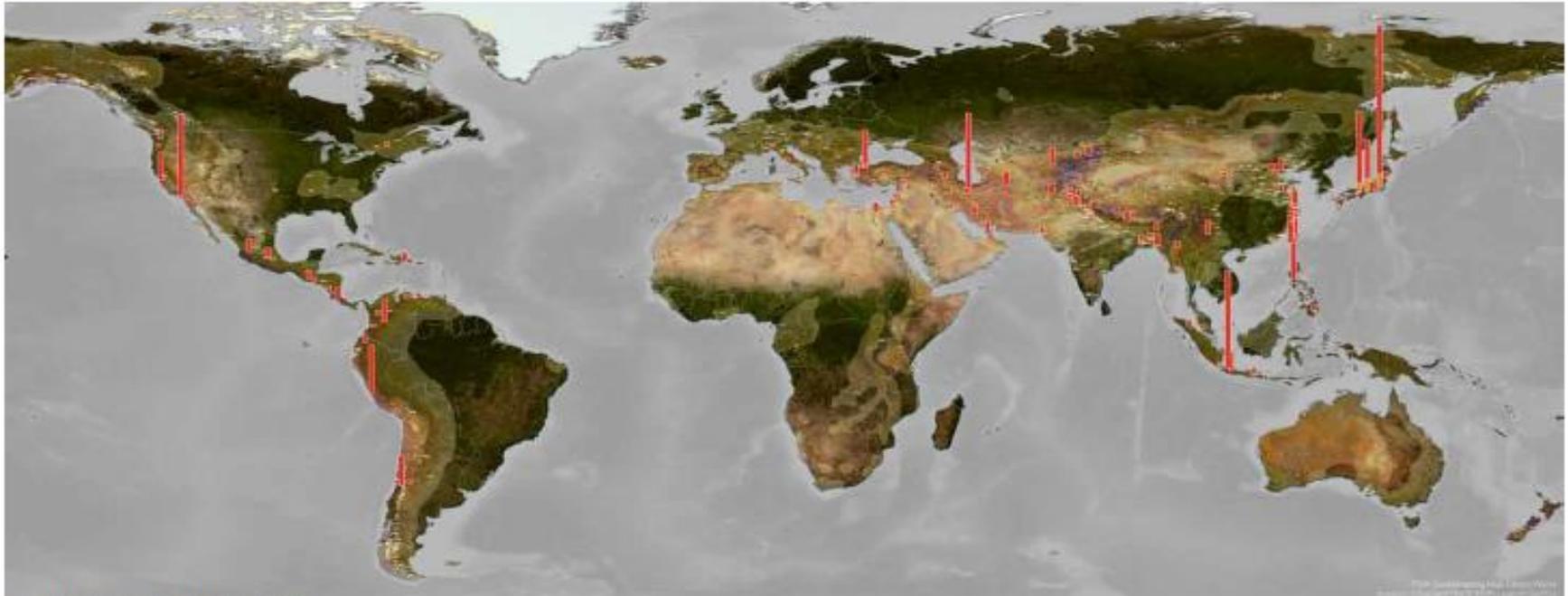
People at risk over next 50 years under a wet scenario



REUTERS

Séismes:

People potentially affected by earthquakes and tsunamis



People at risk per metropolitan area and peril scenario



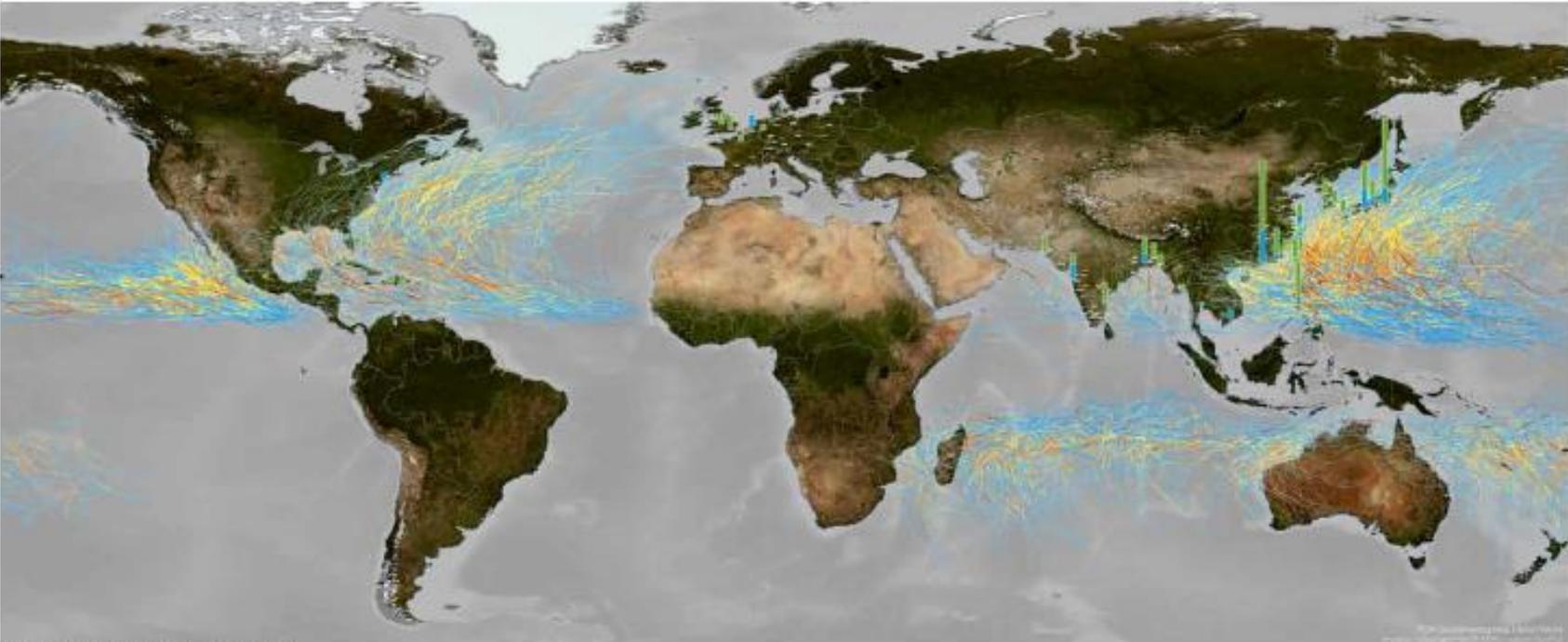
Modified Mercalli intensity corresponds to return period of 475 years



Concerns about 283 millions urban inhabitants

Tempêtes

People potentially affected by storms and storm surges



People at risk per metropolitan area and peril scenario



Typhon Philippines, novembre 2013 :
200 morts, 1600 disparus, 4 millions de déplacés,
14 milliards \$ de dommage.



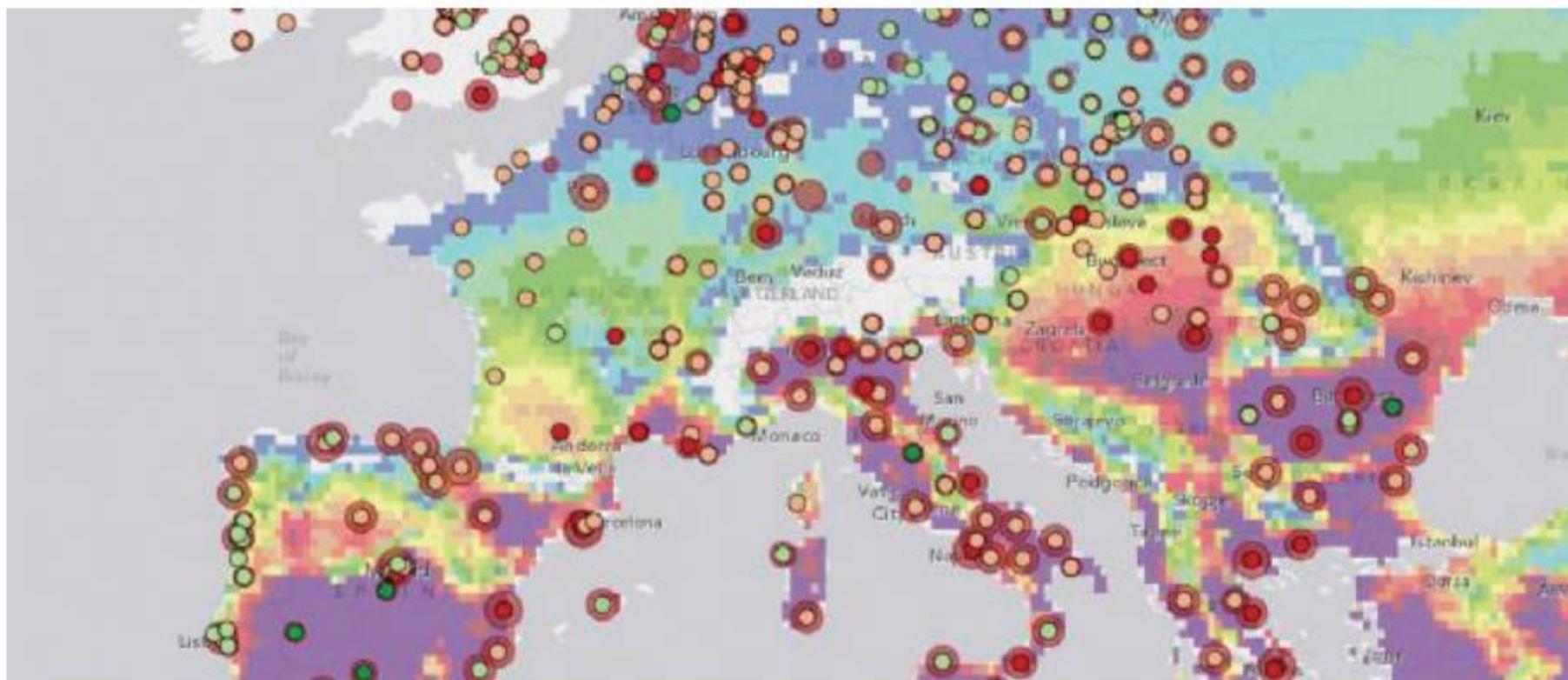
GLISSEMENTS DE TERRAIN



RIO JANEIRO (BRÉSIL), (8 AVRIL 2010).

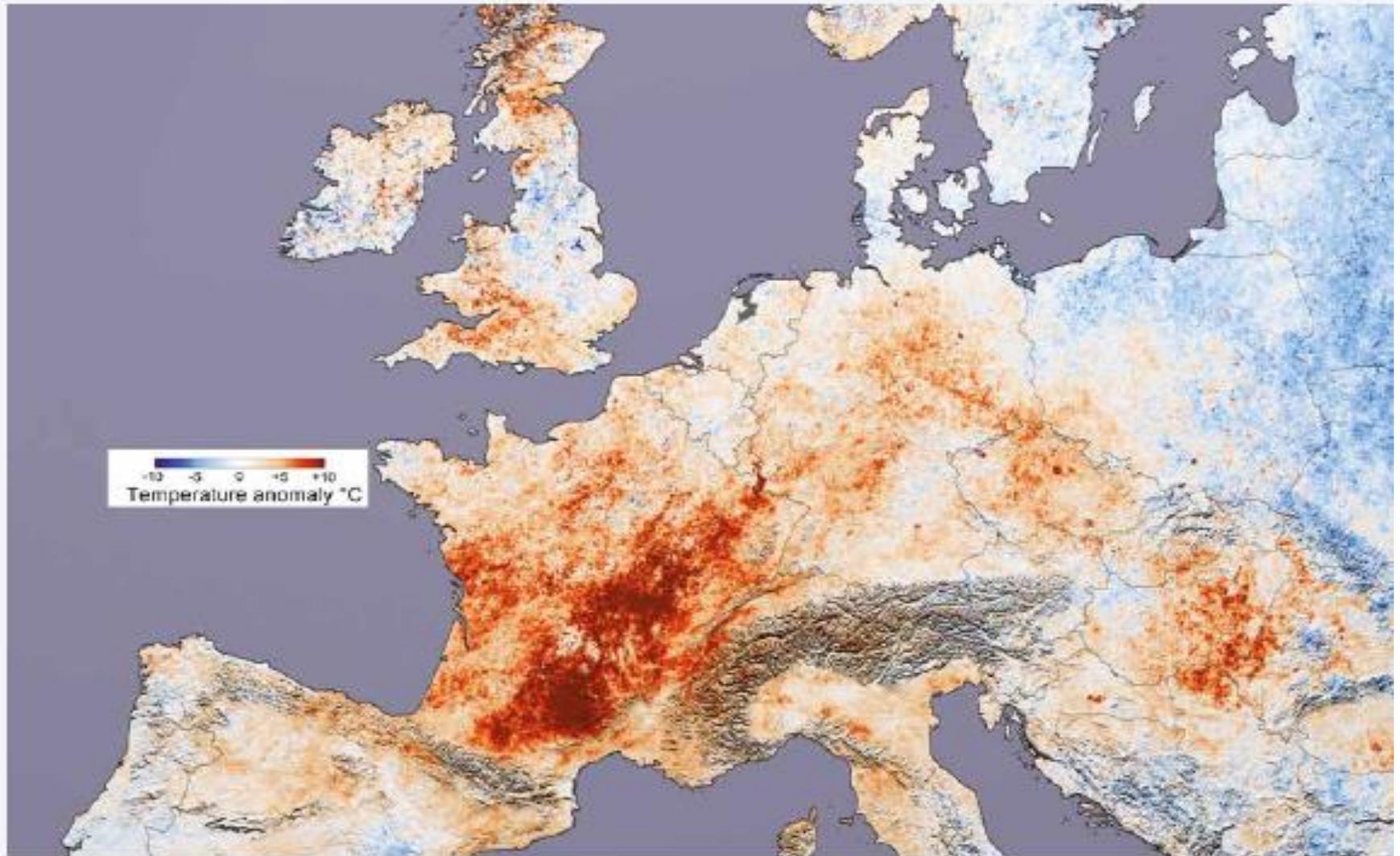
REGARDEZ - Les villes européennes les plus vulnérables aux épisodes de canicule

L'Agence européenne de l'environnement publie une carte censée donner une vision d'ensemble face aux défis du changement climatique.



providers, infrastructures, and older people themselves, could allow for better

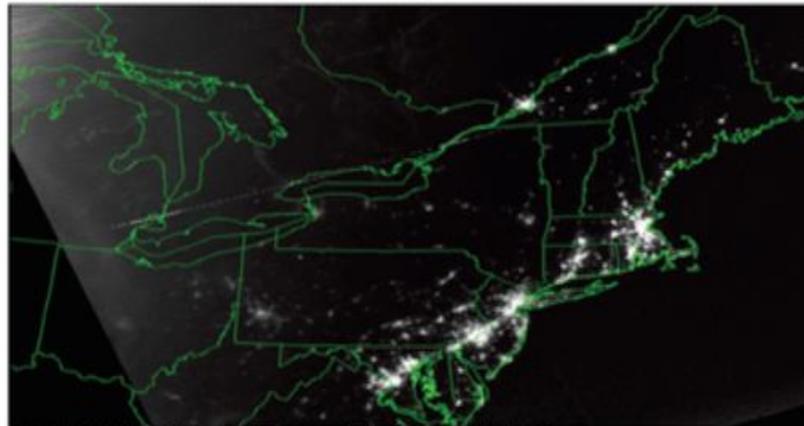
Below: Satellite image of 2003 heat wave across Europe. (NASA)



Risque de défaillance des infrastructures



August 14, 2003 • 9:29 p.m. EDT • About 20 hours before blackout



August 15, 2003 • 9:14 p.m. EDT • About 7 hours after blackout

US Blackout (2003)

- 50 Million people
- 24 hours for full recovery
- Cost: \$6 to \$10 billion

Other blackout :

- Italy (2003):
\$ 55 billions
- Indonesia (2005)
\$ 100 billions

Risque industriel



Bhopal disaster

The **Bhopal disaster**, also referred to as the **Bhopal gas tragedy**, was a **gas leak** incident in India, considered **the world's worst industrial disaster**.

It occurred on the night of 2–3 December 1984 at the **Union Carbide India Limited (UCIL) pesticide plant** in **Bhopal**, Madhya Pradesh. Over 500,000 people were exposed to **methyl isocyanate (MIC)** gas and other chemicals.

The toxic substance made its way in and around the **shanty towns** located near the plant.

Estimates vary on the death toll. The official immediate death toll was 2,259. The **government of Madhya Pradesh** confirmed a total of 3,787 deaths related to the gas release. A government affidavit in 2006 stated the leak caused 558,125 injuries including 38,478 temporary partial injuries and approximately 3,900 severely and permanently disabling injuries.

• RISQUE INDUSTRIEL

24 avril 2011 - International

Tchernobyl: Il y a 25 ans, l'horreur

Le 26 avril 1986, le réacteur n°4 de la centrale nucléaire soviétique de Tchernobyl, en Ukraine, explose, plongeant le monde dans la crainte d'une vaste contamination radioactive. A l'heure où tous les regards convergent vers le site japonais de Fukushima, retour en images sur ce qui reste la plus grande catastrophe nucléaire de tous les temps.



1 Samedi 26 avril 1986, 1h23

1 2 3 4 5 6 7 8 9 ▶

•Violences urbaines



•Risques sociaux

Some cities, of course, have more problems than others. Giorgos Kaminis, mayor of Athens, pointedly mentioned London, which has cited 'cybercrime' as a major worry, when discussing his own city's ills.

"I heard London talk about cyber attacks," Kaminis said. "But in our case, resilience is about everything - social, economic, natural disasters. We have 60% youth unemployment, 40 buildings were set on fire during riots in 2012, and now because of the Syrian war there is an immediate threat of more than a million people seeking shelter in countries in southern Europe. Unfortunately, we are not prepared to receive so many people in our country.

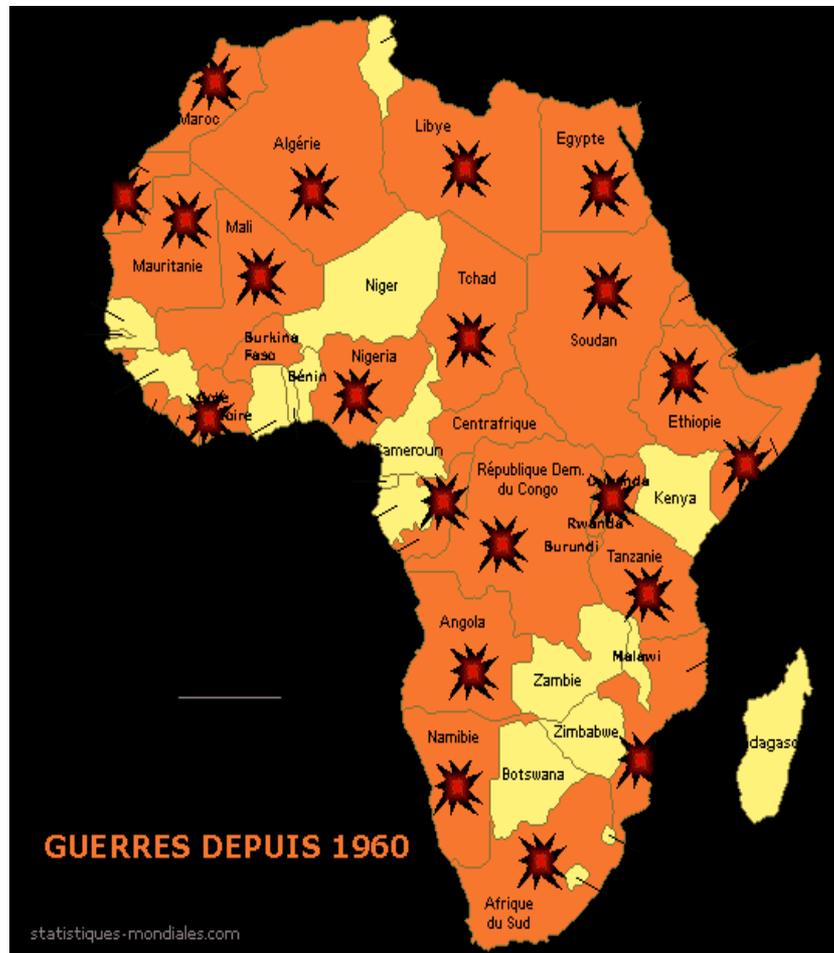
"It used to be unusual to be homeless in Athens, but since the outbreak of the crisis, we now have many, many homeless people from the middle class. We have to take care of them somehow. That is resilience to me."



AMMAN'S RESILIENCE CHALLENGE

Amman is one of the Middle East's most thriving metropolises. It is the political, cultural, and commercial center of Jordan and a thriving regional economic powerhouse. Unfortunately, it is also now host to waves of refugees who have fled regional conflicts over the past two decades. This influx has put pressure on the city's infrastructure and its ability to deliver basic services. While it boasts well-managed road, tunnel, and bridge infrastructure, there are few reliable public transport alternatives, forcing residents to rely heavily on cars.

Depuis 1960, les guerres et massacres en Afrique : **plus de 9 millions de morts.**
 Depuis 1990, les guerres en Afrique : **plus de 200 milliards d'euros.**



	Nigeria	1967-1969	300 000	Guerre ethnique (Biafra)
	Nigeria	2001-2004	55 000	Violences ethniques
	Ouganda	1971-1978	250 000	Guerre ethnique
	Ouganda	1981-1986	100 000	Répression dissidents
	Rwanda	1994	1 000 000	Violences ethniques

La disparition d'un homme, c'est une tragédie; la disparition de millions de gens, c'est la statistique.
Joseph Staline

Disaster Risk Analysis Guidance for Local Governments

Figure 4 Classification of vulnerability factors

