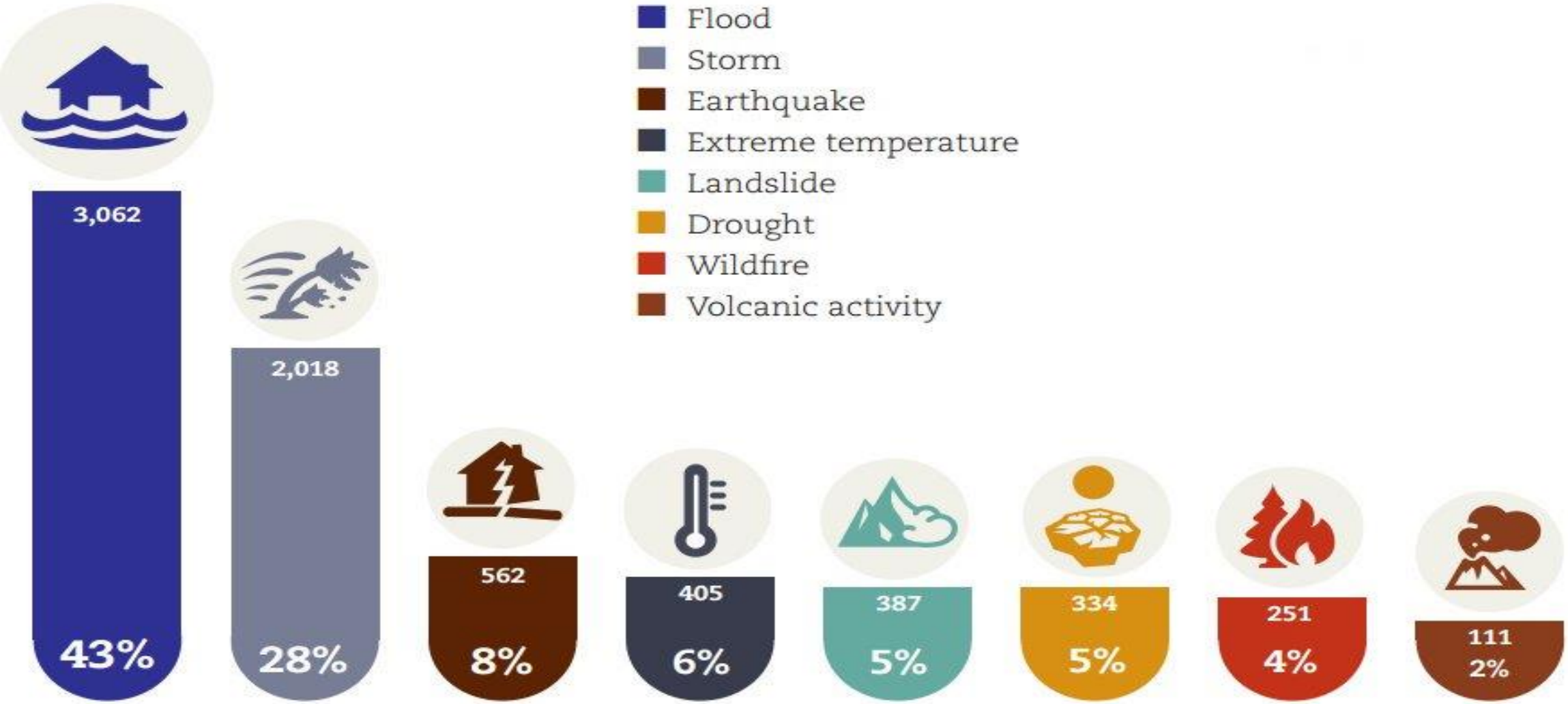
TEHRAN
THE CAPITAL OF IRAN
EARTHQUAKE

8TH INTERNATIONAL CONFERENCES OF SEISMOLOGY AND EARTHQUAKE ENGINEERING

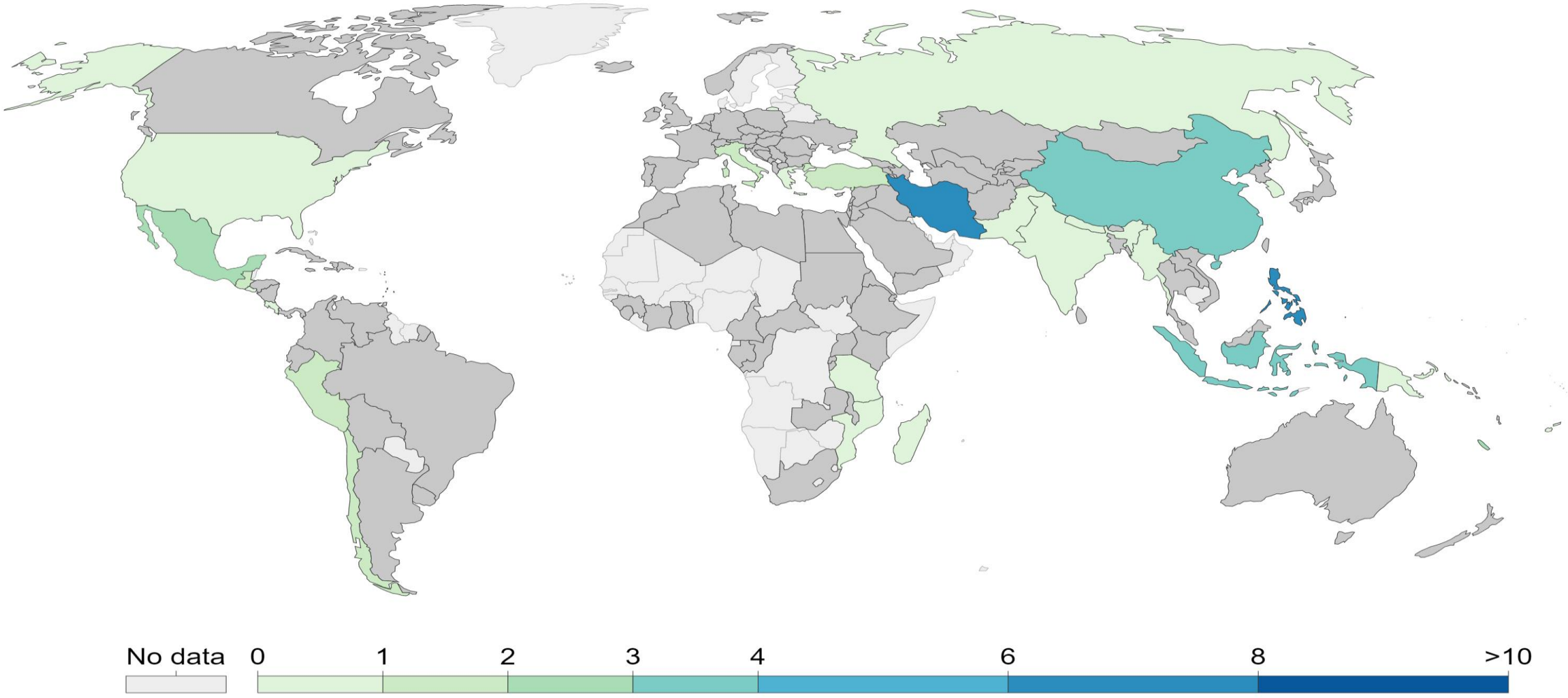
Percentage of occurrences of natural disasters by disaster type (1995-2015)



Number of known significant earthquakes, 2017

Our World in Data

Estimated annual number of significant earthquakes. A significant earthquake is classified as one that meets at least one of the following: caused deaths, moderate damage ($1 million or more), magnitude 7.5 or greater, Modified Mercalli Intensity (MMI) X or greater, or generated a tsunami. Due to reporting and evidence, recent data will be more complete than the long historical record; an increase in reported earthquakes over this period therefore doesn't indicate a true increase.



Source: National Geophysical Data Center (NGDC) of the NOAA

The most severe earthquakes in the world

Ranking	Location	Year	Estimated death toll	Earthquake magnitude	Additional information
1	Shaanxi, China	1556	830,000	8	destroyed. In some counties it's estimated that up to 60% of the population died. Such catastrophic losses are attributed to loess cave
2	Port-au-Prince, Haiti	2010	316,000	7	NGDC of the NOAA (for consistency with other earthquakes); this is the figure reported by the Haitian government. Some sources suggest a lower figure of 220,000. In the latter case, this event would fall to 7th
3	Antakya, Turkey	115	260,000	7.5	surrounding areas suffered severe damage. Apamea was also destroyed and Beirut suffered severe damage. A local tsunami was triggered
4	Antakya, Turkey	525	250,000	7	caused severe damage to many buildings. However, severe damage was
5	Tangshan, China	1976	242,769	7.5	meaning almost all buildings and structures were designed and built without seismic considerations. Estimated that up to 85% of buildings
6	Gyzndzha, Azerbaijan	1139	230,000	Unknown	Often termed the Ganja earthquake. Much less is documented on the specific details of this event.
7	Sumatra, Indonesia	2004	227,899	9.1	countries in the regions with Indonesia being the hardest-hit, followed
8	Damghan, Iran	856	200,000	7.9	Estimated that extent of the damage area was 220 miles long. It's also hypothesised that the ancient city of Šahr-e Qumis was so badly damaged that it was abandoned after the earthquake.
9	Dvin, Armenia	893	150,000	Unknown	standing. With its city defences ruined, Dvin was taken over and turned
10	Tokyo, Japan	1923	142,807	7.9	collapsed. Caused a tsunami with height up to 12m. Large fires broke

photo : Mahmoud Hosseini

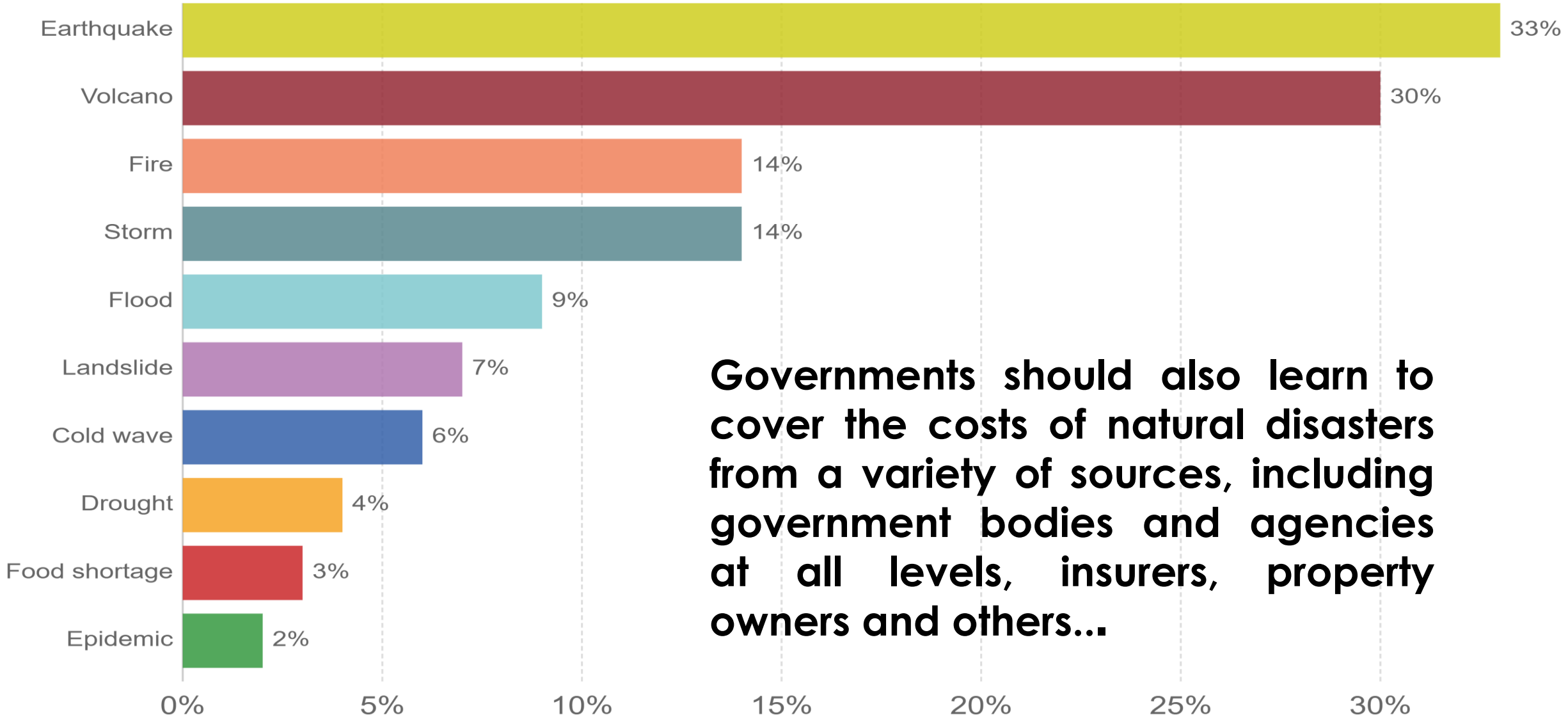
About 30 years after the SEE conference began in Iran, despite significant advances in this area, cities in the country, including Tehran, are still subject to severe earthquake damage.

This is mainly due to the presence of worn-out textures, the inadequacy of many construction methods, inadequate materials, the lack of skills and training of the workforce in the building industry, the failure to comply with the terms and conditions of implementation, and the general lack of awareness of how to prevent and prepare for dealing with this incident.

News coverage of disasters

The data considers disasters occurring between 1968-2002 and their corresponding coverage in major US networks. It is evident that "spectacular" disasters receive more coverage.

Our World in Data



Governments should also learn to cover the costs of natural disasters from a variety of sources, including government bodies and agencies at all levels, insurers, property owners and others...

Source: Eisensee and Strömberg (2007)

Currently, Tehran's metropolitan resilience in a major earthquake is far from optimal, as many experts in the field say. While the city's universities, research and scientific institutions, some of which are of the highest quality in the country, and their fate is tied to the city's fate, do not have a sufficient role to play in increasing the resilience of Tehran.

The New Ten Essentials for Making Cities Resilient: an operational framework for the Sendai Framework at the local level

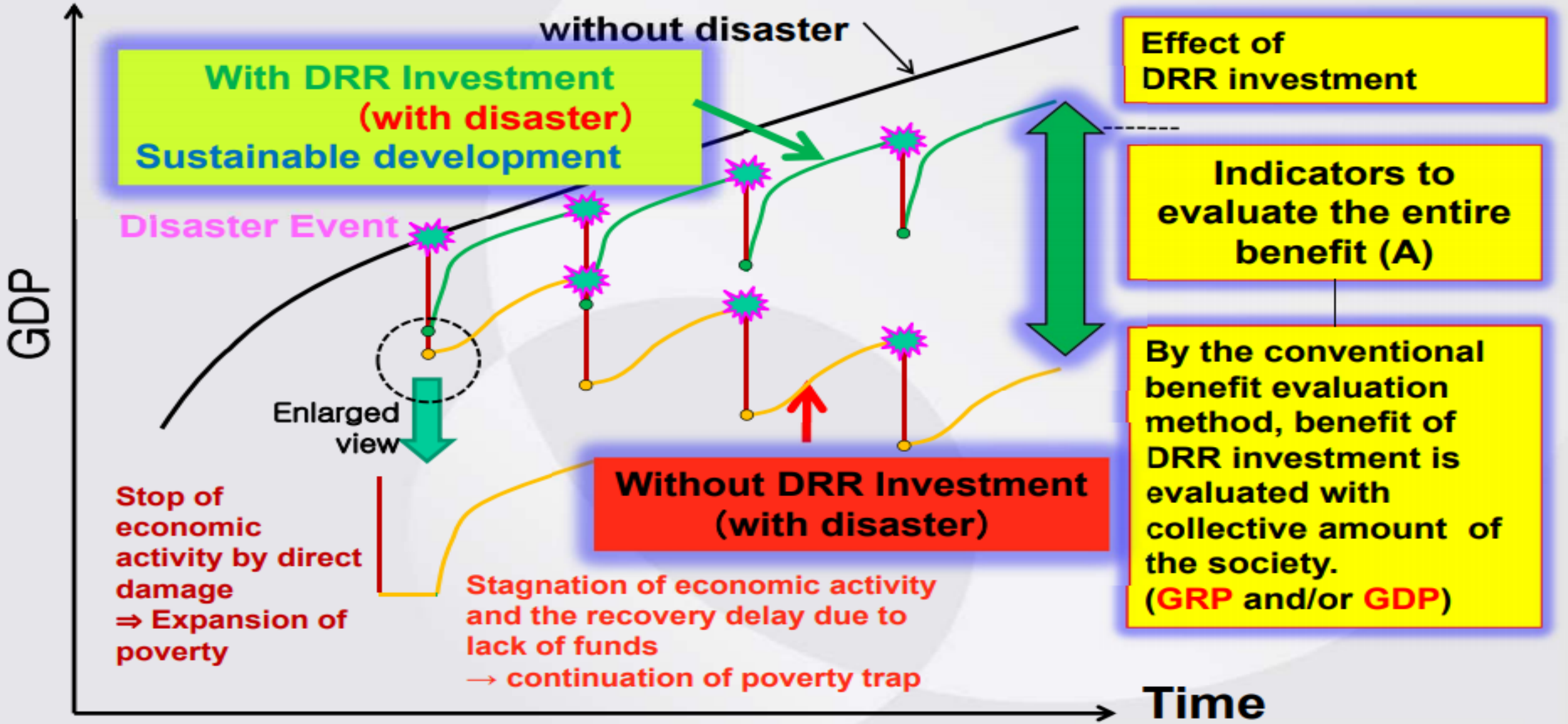
1. Organize for disaster resilience
2. Identify, understand and use current and future risk scenarios
3. Strengthen financial capacity for resilience
4. Pursue resilient urban development and design
5. Safeguard natural buffers to enhance the protective functions offered by natural ecosystems
6. Strengthen institutional capacity for resilience
7. Understand and strengthen societal capacity for resilience
8. Increase infrastructure resilience
9. Ensure effective disaster response
10. Expedite recovery and build back better

Sendai Framework for Disaster Risk Reduction


7 GLOBAL TARGETS
Reduce
Mortality/
global population
2020-2030 Average << 2005-2015 Average
Affected people/
global population
2020-2030 Average << 2005-2015 Average
Economic loss/
global GDP
2030 Ratio << 2015 Ratio
Damage to critical infrastructure
& disruption of basic services
2030 Values << 2015 Values
Increase
Countries with national
& local DRR strategies
2020 Value >> 2015 Value
International
cooperation
to developing countries
2030 Value >> 2015 Value
Availability and access
to multi-hazard early warning
systems & disaster risk
information and assessments
2030 Values >> 2015 Values

The Municipality of Tehran has done its utmost to strengthen the above steps and is working to bring it closer, but the magnitude of the issue is so great that effective progress in this direction requires national determination, and a particular action by universities, higher education institutions and other governmental and non-governmental organizations.
This is the path we, like the UNDRR, should call the "Resilience Campaign".

Differences with/without DRR investment to GDP



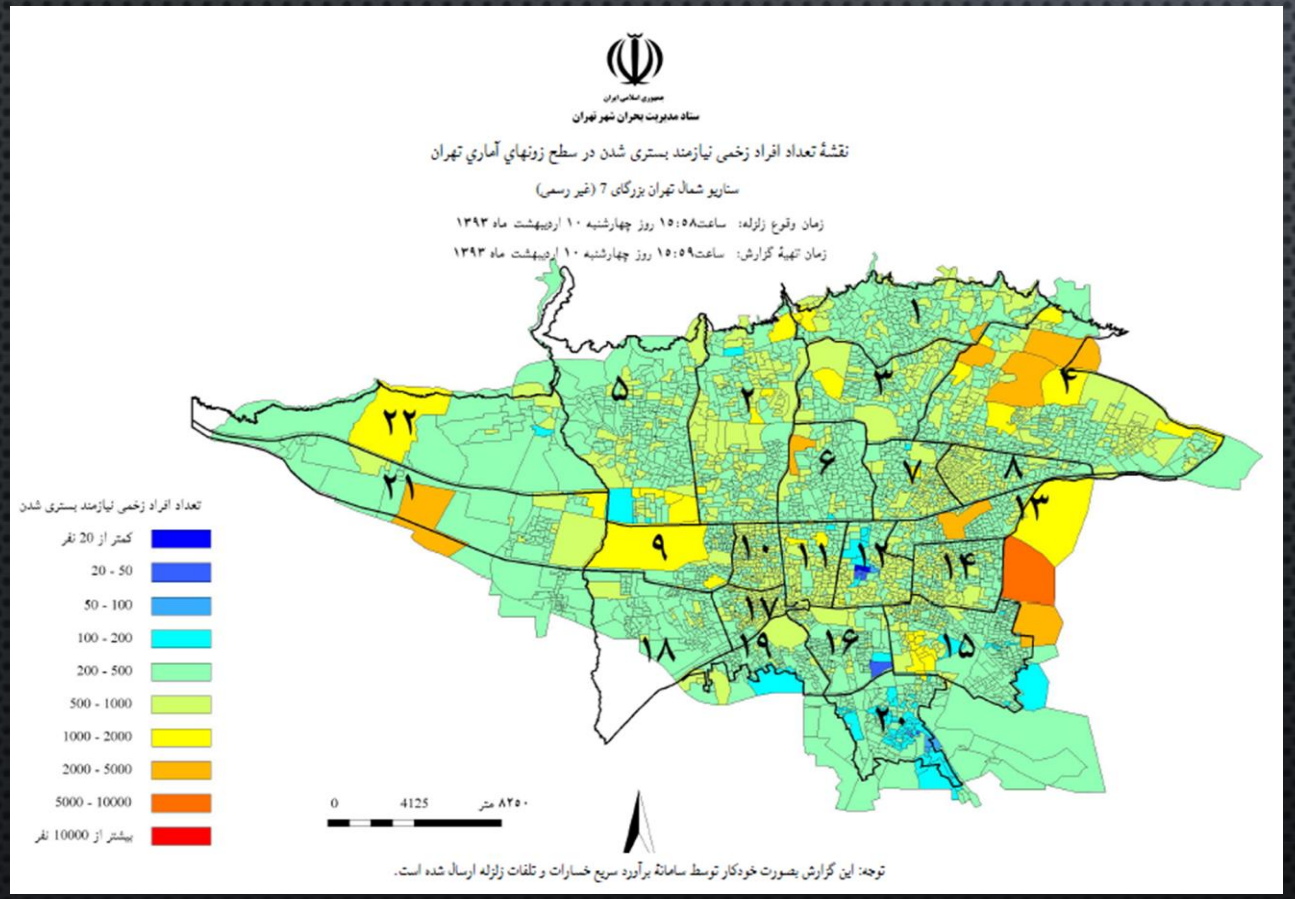
Tehran specialized organization for Disaster management:

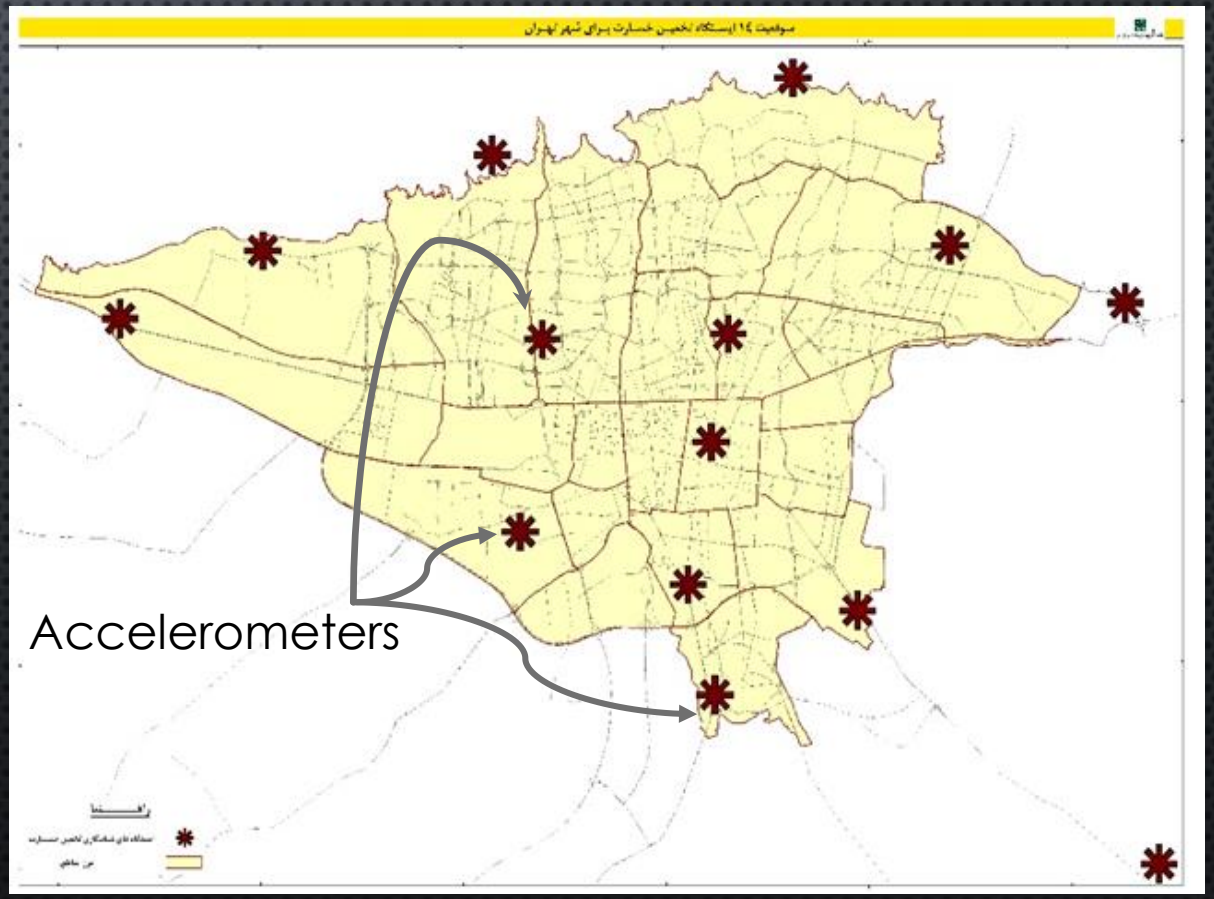
Tehran Disaster Mitigation and Management Organization (TDMMO)

http://tdmmo.tehran.ir

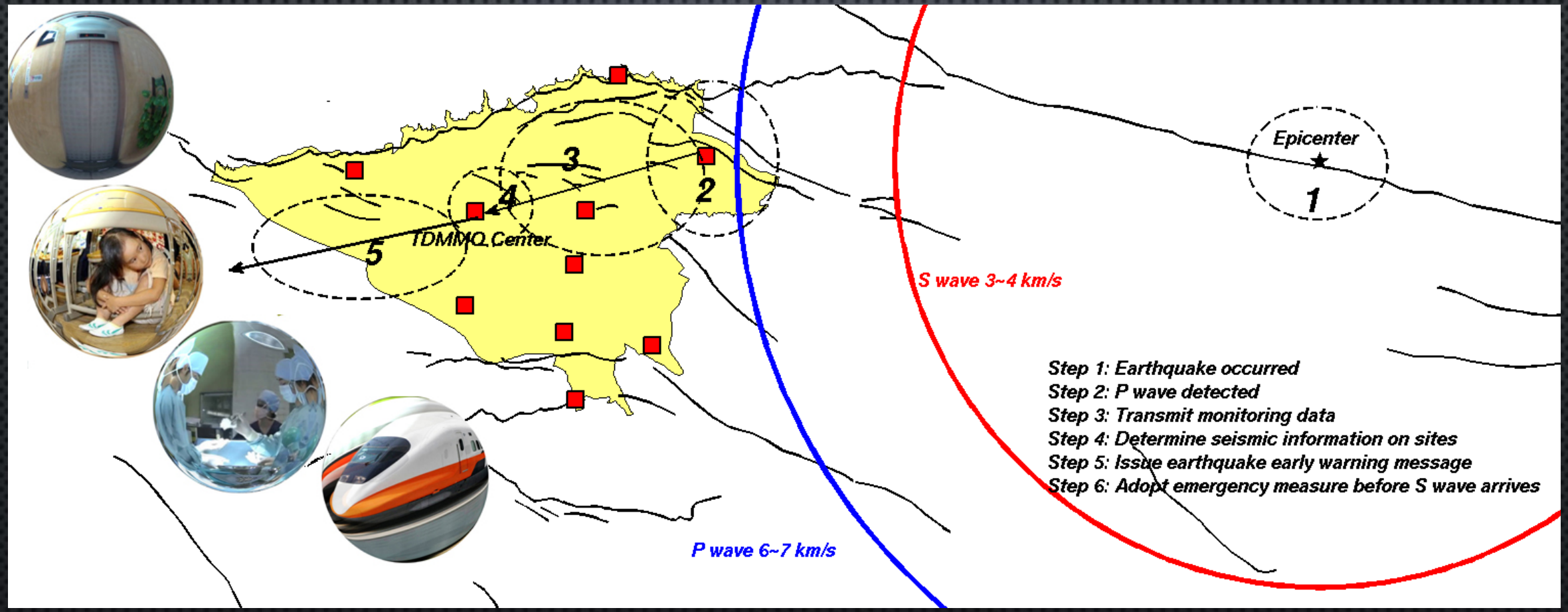
Equipped with Emergency Response Command Center of Tehran

Tehran Earthquake Damage Rapid Estimation System

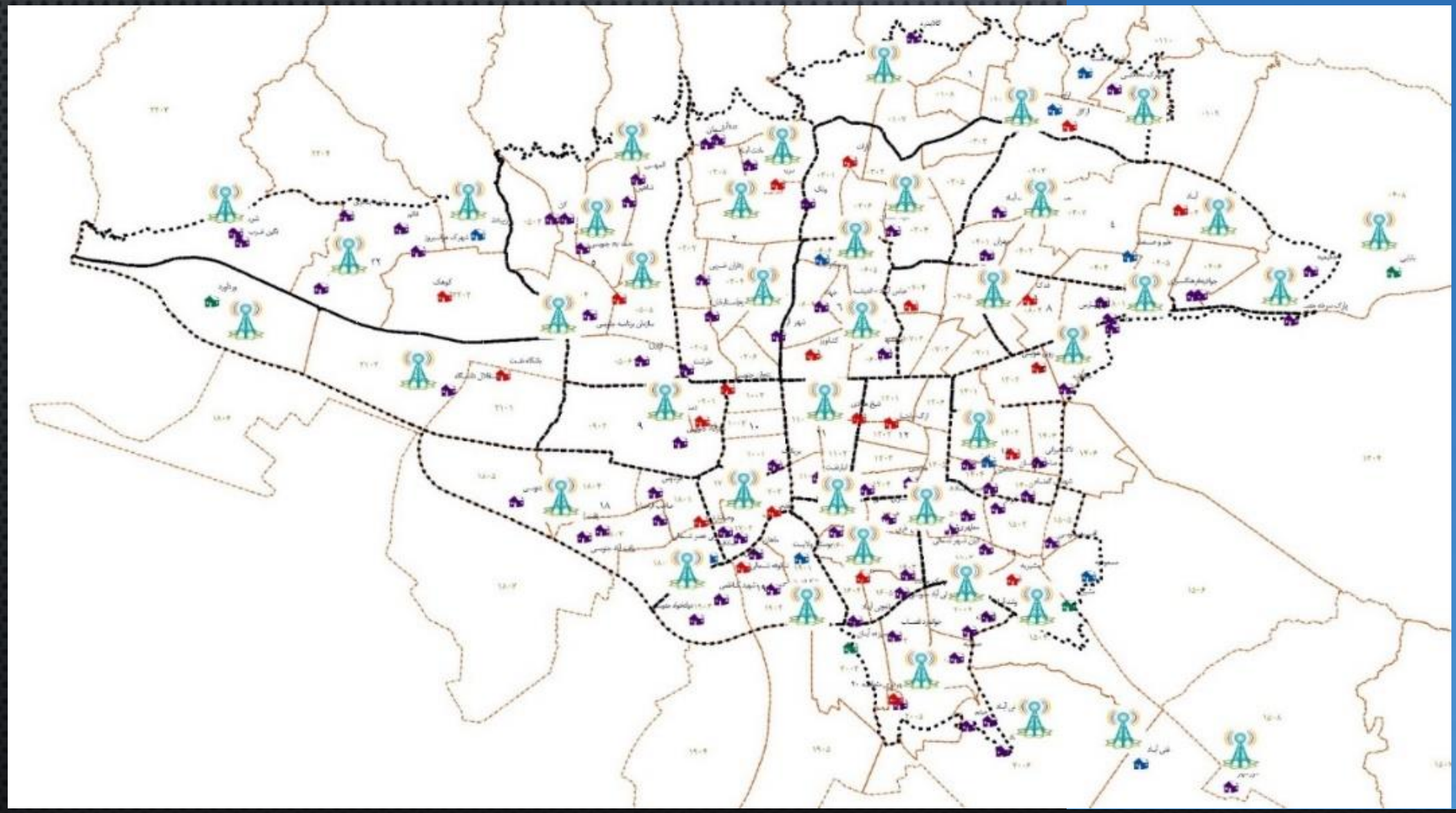




Tehran earthquake early warning system



Tehran Sustainable Communication System




Seismic rehabilitation
Worn out buildings in Tehran

Public Participation Program: DAWAM Homes

More than ten thousand trained volunteers in the city

- Training principals, teachers and students of schools and their families
- Assessment of non-structural vulnerability of Tehran schools

Disaster Management Bases

- More than one hundred city-wide disaster management bases
- Storing basic equipment for times of disaster
- Volunteer training
- Center for disaster management in the region

Disaster Management Drills

Disaster Prevention and Management Knowledge

http://dpmk.ir/

THE MUNICIPALITY OF TEHRAN WARMLY WELCOMES ALL PROFESSIONALS WHO HAVE IDEAS TO HELP WITH THE CITY RESILIENCY CAMPAIGN.

شهرداری تهران
دست همه
متخصصینی که
فکر و ایده ای
برای کمک به
کمپین تاب
آوری شهر
دارند به گرمی
می فشارد.