

# 2007 Summer Academy

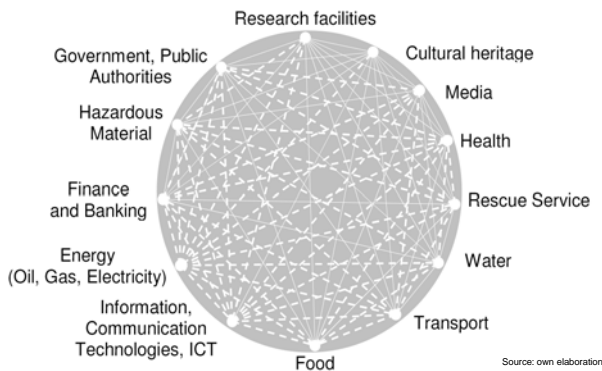
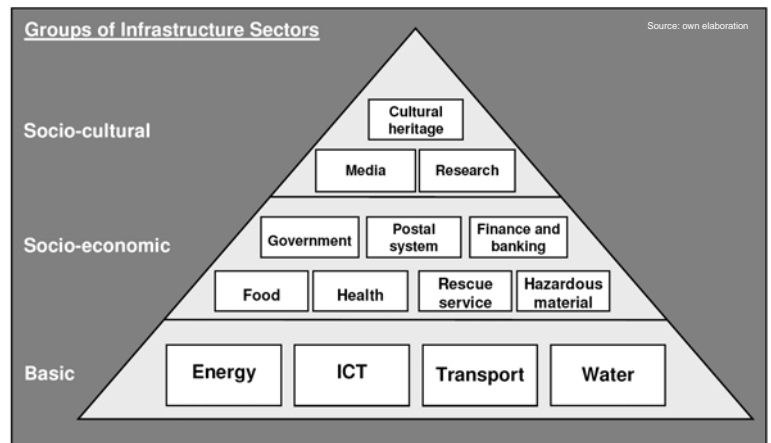
## Megacities: Social vulnerability and resilience building

### Critical Infrastructures (CI): Complex networks of interdependent systems

“Critical infrastructure includes systems, facilities, and assets so vital that if destroyed or incapacitated would disrupt the security, economy, health, safety, or welfare of the public” (The Infrastructure Security Partnership)  
 “An infrastructure becomes critical when it provides some service without which society or the economy cannot engage in normal operations” (International Risk Governance Council).

### CI Sectors

Basic infrastructures are (technical) infrastructures which are of fundamental relevance for the society, because almost all areas of public life depend on their availability. Socio-economic infrastructures are those systems that provide indispensable services beyond the technical lifelines. Socio-cultural infrastructures play a decisive role in the maintenance of democracy as well as societal development and identity.



### Critical Health Care Infrastructure

The Health Care sector is a very fragmented CI sector. It is characterized by numerous punctual infrastructure facilities and non-physical networks. The subject of this service is abstract (“human health”, similar to “information” in ICT networks, different from water supply or transport). The left part of the figure compiles some important sub-sectors of the health complex. The right part concretizes the basic infrastructures in this context and the arrows denote the interdependency between these elements.

### Interdependency

The most important attribute of critical infrastructures is interdependency. The increasing relevance of technological and organizational networks of lifelines and societal functions comes along with a strong augmentation of infrastructure complexity. Small regional infrastructure failures may cause large domino effects and have an impact on the international level (and vice versa). This is a global phenomenon.

