

# Network design and location decisions in humanitarian logistics

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Emerging humanitarian crises of the last decades demonstrated the necessity to excel in the management of time constraints, limited resource amounts and high levels of uncertainty. The Syrian refugee crisis that has been going on for more than a decade illustrates one of the main characteristics of humanitarian logistics: selectiveness. Management of scarce resources does not always allow for the coverage of all of the demand. Dynamics of location decisions and selectiveness characteristics highlight the fundamental importance of network design in humanitarian logistics.

Recent outburst of COVID-19 pandemic show that quick responses to humanitarian crises is essential. The problems of fast distribution of masks, PCR tests and vaccines show that humanitarian crises are rapid changing situations where new needs and questions arise continuously. Scarcity of resources of time and supply in a crises that require quick response also obligate selectiveness in terms of the demand that can be covered. Current situation in Ukraine shows that, unfortunately, there will always be emerging humanitarian crises in the world and Network Design in Humanitarian Logistics will continue to be a critical research topic in the years to come.

In this talk, a general framework for network design in humanitarian applications will be provided and examples from different applications will be discussed. The examples analyzes Turkey's experience and lessons learned over a decade to provide a road-map for possible and similar situations in the future.