Mapping the communication and coordination networks in response to the Kahramanmaraş Earthquakes, Türkiye, 6 February 2023

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Goal of reconnaissance study:

- **Quick Response study**: identify the major issues for social science research generated by the devastating events of 6 February 2023 in southern Türkiye
- **Primary focus of study team**: assess the communication and coordination processes in practice before, during, and after M_w=7.7, 7.6 earthquakes
- **Primary research methods**: semi-structured interviews with Turkish experts in psychology, public administration, earthquake engineering, nonprofit management, education, business administration; direct field observations.
- Field Observations from: Kahmaranmaras Province Center, Pazarcik (district of K.Maras- center of the first earthquake), Gaziantep Province Center, Nurdagi and Islahiye (districts of Gaziantep), Hatay Province Center (i.e.Antakya), Kirikhan, Defne and Samandagi (districts of Hatay), Golbasi (district of Adiyaman.
- Key issues: socioeconomic, political context; collapsed housing triggered internal migration; psychosocial trauma in damaged cities; impact on schools; uses of technology.

Context: Türkiye on February 5, 2023

- Seismic risk: Known seismic risk in country; major earthquake faults mapped; major changes in policies, building codes, disaster planning enacted since 1999 earthquakes
- Economic: Middle income country characterized by rapid urbanization in last thirty years; primary driver of economic growth has been construction industry; recent increase in inflation has added to economic, social uncertainty
- Social: Fragmented society; deep political divisions, lack of trust, lack of communication within, between organizations; institutions hollowed out by loyalty tests to current government
- **Political:** Presidential elections are scheduled for May 14,2023; response to devastating events is colored by election campaigns, rivalries; deep suspicion between governing party and opposition parties
- Technological: Highly innovative uses of technology in response operations, use of drones for damage assessment, GIS for mapping areas of risk, WhatsApp groups for rapid communication; mobile phone penetration is 101%

Context: Türkiye after February 6, 2023

- Impact of sudden, severe earthquakes: wide region affected, 11 provinces; damage, destruction varied substantially among 10 cities, many smaller districts in region.
- **Expert judgment**: Changes designed, adopted after 1999 Marmara, Duzce Earthquakes were not sustained; despite knowledge, skills, capacity to reduce seismic risk, actions atrophied, overridden by other priorities, choices at enormous cost
- Losses: Lives lost exceed 58,000, with 50,096 fatalities in Turkey, 8,476 in Syria; 214,000 buildings have collapsed in region; 3.5 million residents have left area; est. cost: \$102 billion
- **Challenge**: How to rebuild area, re-establish communities, reconnect families, neighborhoods in sustainable ways? Seismic risk remains; earthquakes will recur; can people learn to live w/ risk?

Major areas for social science research:

- **Communications**: Discrepancy between technical capacity for electronic communication and organizational capacity to manage accurate, reliable information exchange; first three days after EQs, no communication in damaged cities
- **Coordination**: Without communication, coordination among organizations fails. First days after EQs were chaotic; difficult to send help; crucial time for life-saving rescue; failure compounded distrust, anger
- Shelter: Collapse of housing led to internal migration of residents from EQ-damaged region to other parts of country. Will families return? Will rapidly constructed housing be built to code? Will disaster be recreated in another decade?
- **Psychosocial trauma**: Size, scale of losses disrupted basic sense of security, stability; whole communities experienced posttraumatic stress, loss of family, home, friends, work, familiar landscapes, neighborhoods increase uncertainty
- Education: Central focus of communities; re-open the schools; enable children to return to school; reconnect families, teachers, re-establish daily routines
- **Technology**: Innovative uses of technology can make information more accessible; enable greater exchange, self organization in rebuilding lives, communities; increase connectedness

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