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SiDRR Atlas of Natural Disaster Risk

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Abstract: For centuries, Silk Road has been playing an essential role in connecting the East and the West, and the exchanges of the trades, science technology, and civilization. However, due to its environmental condition, natural hazards occur frequently there and put threats on both social development and livelihoods along the Silk Road. Further, numerous challenges related to disaster risk reduction in this area exist, including unclear and non-scientific hazard risk assessment, lack of natural hazards background data and information and data exchange platform. Encountered by numerous challenges related to disaster risk reduction in Silk Road area exist, and in line with Sendai Framework for Disaster Risk Reduction and the Sustainable Development Goals 2030, an international research program was established in 2016, namely Silk Road Disaster Risk Reduction (SiDRR). One of the highlights of SiDRR is the Atlas on Disaster Risk Assessment along the Silk Road. This Atlas contributes to understand the hazard formative conditions and vulnerability, and determine the hazard type and spatial distribution, and is making efforts on the assessment of disaster risk at three scales: global scale, regional scale and local scale. It structures in four parts:
Part I: Background
Background for disaster fostering, including location, lithology, geomorphology, climate and social conditions, etc.
Part II: Disaster distribution and characteristics
Categorized based on types of disaster, i.e. geo-hazard, ocean disaster, earthquake, flood, drought.
Part III: Disaster zonation and major events
Case studies for disaster events including a description of disaster, causes, impacts, and management.
Part IV: Disaster risk assessment
Disaster risk assessment and mapping for each type of disasters at different scales, and integrated disaster risk mapping.
The landform of Silk Road is dominated by mountains, basins and plateaus. Due to the complex topographic and geological conditions, the earthquake, meteorological disasters and geological disasters occurred frequently and distributed widely. According to the levels of disaster density, disasters in the Silk Road area are classified as extreme high density, high density, medium density, low density, and minimal density, and to finish Silk Road disaster zonation map. The Silk Road area is with a high-risk level of global natural hazards. In addition, disaster risk assessment at different scales are accomplished by focusing on disaster risk assessment and mapping for each type of disasters (e.g. earthquake, geological disaster, flood, drought, ocean disasters.) for Silk Road area, integrated disaster risk mapping for Silk Road area, disaster risk assessment and risk mapping at regional scale, disaster risk assessment and risk mapping on local scale (e.g. disaster risk assessment in township, community-based disaster risk assessment, disaster risk assessment of settlement), disaster risk assessment and risk mapping for infrastructures including railway, highway, pipeline, and hydropower station. Accordingly, this Atlas provides scientific and technological evidences and supports for integrated disaster risk reduction in Silk Road areas.
Keywords: Atlas; SiDRR; Disaster Risk; Silk Road