

SEVERE CONVECTIVE STORM RISK IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

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ABSTRACT

This paper shows the key results of doctoral research into the temporal, spatial and impact characteristics of severe convective storms in the Eastern Cape Province of South Africa. Using historical data on severe convective storms dating from 1897, patterns of the hazard threat and risk to various geographic populations were investigated. A conceptual framework which emphasises the combined role hazard and vulnerability play in defining risk was used for the study. A methodology for ranking the severity of the storms in the historical dataset, based on recorded damage/impact, was specifically developed for the study. It is intended that this methodology will have a potentially wider application and may be adapted to a range of hazard impact and risk studies in South Africa and internationally. The study was undertaken within the context of the South African Disaster Management Act of 2002. Findings of the study show that severe convective storms can occur throughout the province, but there are clearly demarcated areas of higher frequency and concentration. The impact of storms is particularly severe on impoverished and vulnerable rural populations in the eastern parts of the province, where there is an urgent need for building capacity in disaster risk management. A major outcome of the study is the production of a severe convective storm hazard/risk map of the Eastern Cape, which it is hoped will be of benefit to a number of stakeholders in the province, particularly disaster management, but also the South African Weather Service, agricultural organisations, development/planning authorities, educational authorities and risk insurers. It is hoped that this map and the study in general will assist in guiding the operational responses of the various authorities, especially in terms of those interventions aimed at disaster risk reduction in the Eastern Cape Province of South Africa.