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Municipal Vulnerabilities to Climate Change in Goiás: an integrated analysis based on secondary data

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INTRODUCTION & AIM

Climate change has intensified the occurrence of extreme events in Brazil, increasing social, economic, and environmental risks, especially in municipalities that lack policy instruments and actions to adapt to climate change.

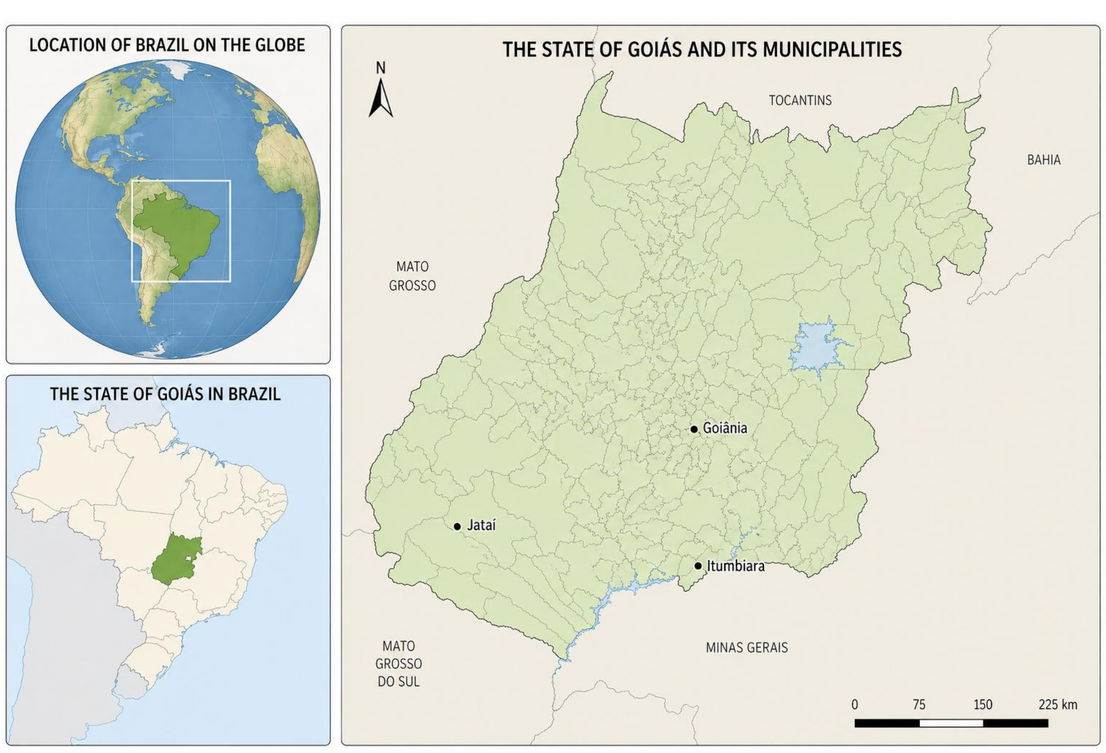
In this context, attention is drawn to the increased frequency of droughts, heavy rains, heat waves, and their direct impacts on urban populations and productive activities, in association with the scarcity of integrated diagnoses at the municipal level that support public adaptation policies.

The objective of the study was to comparatively assess the climate vulnerabilities of the municipalities of Goiânia, Jataí, and Itumbiara, considering their distinct territorial and economic functions.

METHOD

The methodology based on a literature review and analysis of secondary data from official agencies and national platforms, such as IBGE, INMET, SEEG, ONS, AdaptaClima, and AdaptaBrasil MCTI.

In addition, a survey of news reports was conducted to identify records of extreme events, material damage, and human losses. The data were organized and analyzed using geoprocessing tools and spreadsheets, allowing for an integrated and comparative approach.



RESULTS & DISCUSSION

The results indicate that Goiânia has high climate sensitivity, associated with high water demand, intensification of heat islands, and recurrent urban flooding (Nascimento and Oliveira, 2011; Rego and Barros, 2014) – as shown in Fig. 2.

Fig. 2: Panoramic view of Goiânia and the occurrence of extreme weather events
Source: O Popular (2023).

Jataí shows vulnerabilities related to dependence on agricultural production, with risks to food security in the face of prolonged droughts and and cold fronts (Fig.3).

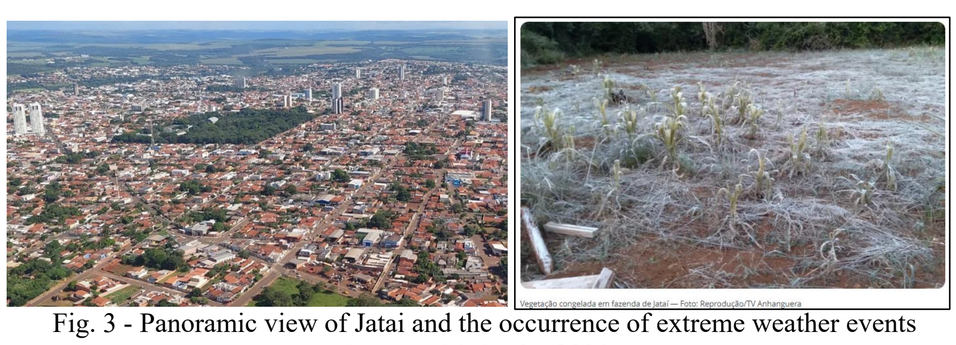


Fig. 3 - Panoramic view of Jatai and the occurrence of extreme weather events
Source: G1 Goiás (2021).

Itumbiara, although relatively less sensitive, is vulnerable to reduced hydroelectric reservoir levels and water seasonality (Nascimento and Silva, 2023).

Fig. 4 - Panoramic view of Jatai and the occurrence of extreme weather events. Source: Metropoles (2021)

CONCLUSION

It is concluded that municipal climate vulnerability is strongly conditioned by the economic matrix, the water supply system, and planning capacity. The study reinforces the importance of using integrated secondary data to support the formulation of local strategies for adaptation to climate change.

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