

“The significance of water vapor of Atmosphere in the Adaptation to Climate Change in Metropolitan Region of Sao Paulo”

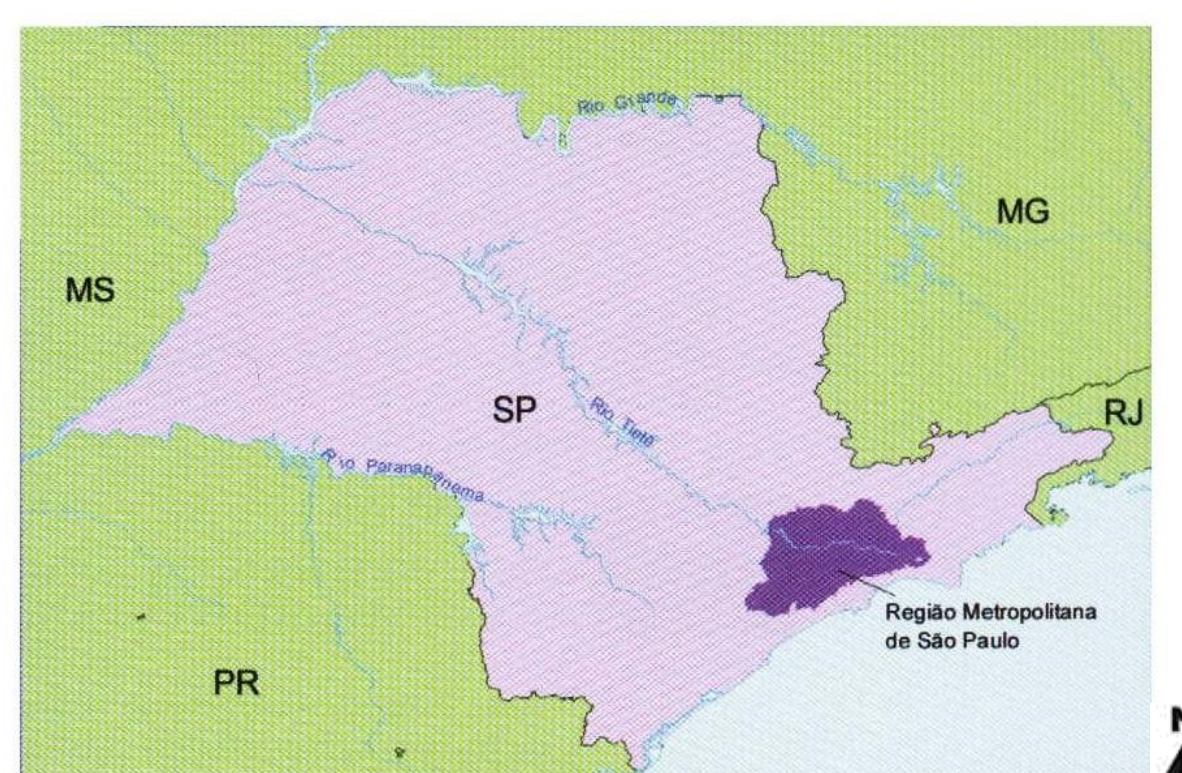
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The water vapor is the main existing natural element which causes, in the atmosphere, the greenhouse effect, because of its capacity to store heat. Most of the studies on global warming are related to the gases of the greenhouse effect and centered in the emission of these gases in urban areas.

The present study search to research the temporal and geographic distribution of the water vapor in the RMSP, area where the thermal and hidrologic properties as well as the terrestrial aerodynamic parameters of the surface had been modified by the urbanization, face to the mesoclimates and geocological conditioners, to select parameters of vulnerability to the Climatic Changes and to give subsidy to public policies for adaptation and mitigation.



Fonte: Instituto Sócio Ambiental, 2001.



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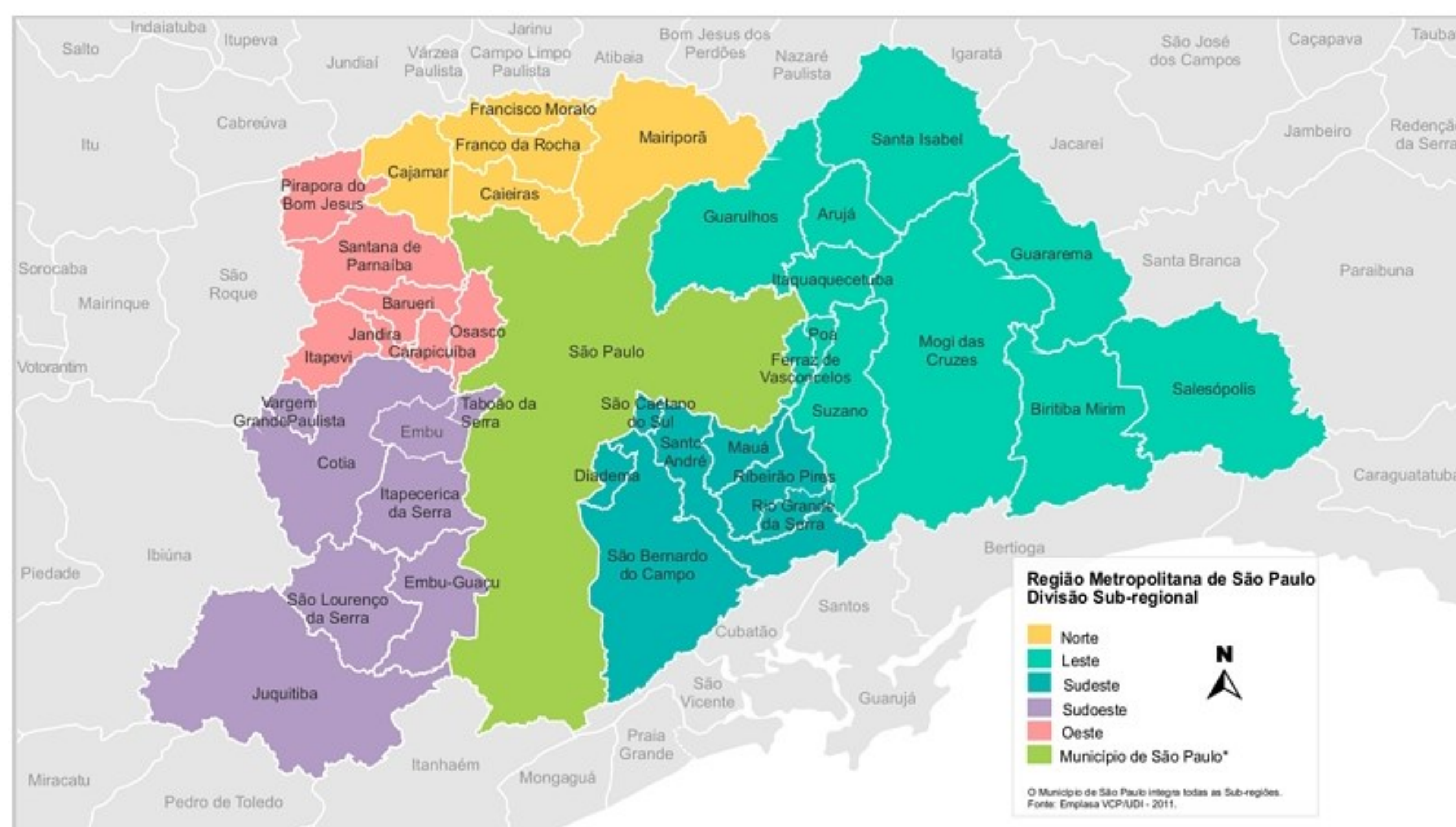


Fig. 1 — Location of Study Area

Fonte: EMLASA - <https://www.emplasa.sp.gov.br/RMSP>, access 30.01.2017

The humidity of air (water vapor) is essential for life and for the environment comfort, beyond indicative of the climatic behavior. Its study in urban areas will allows a better understanding of the urban climatic conditions, as well as of the urban environment, offering subsidies to urban planning.

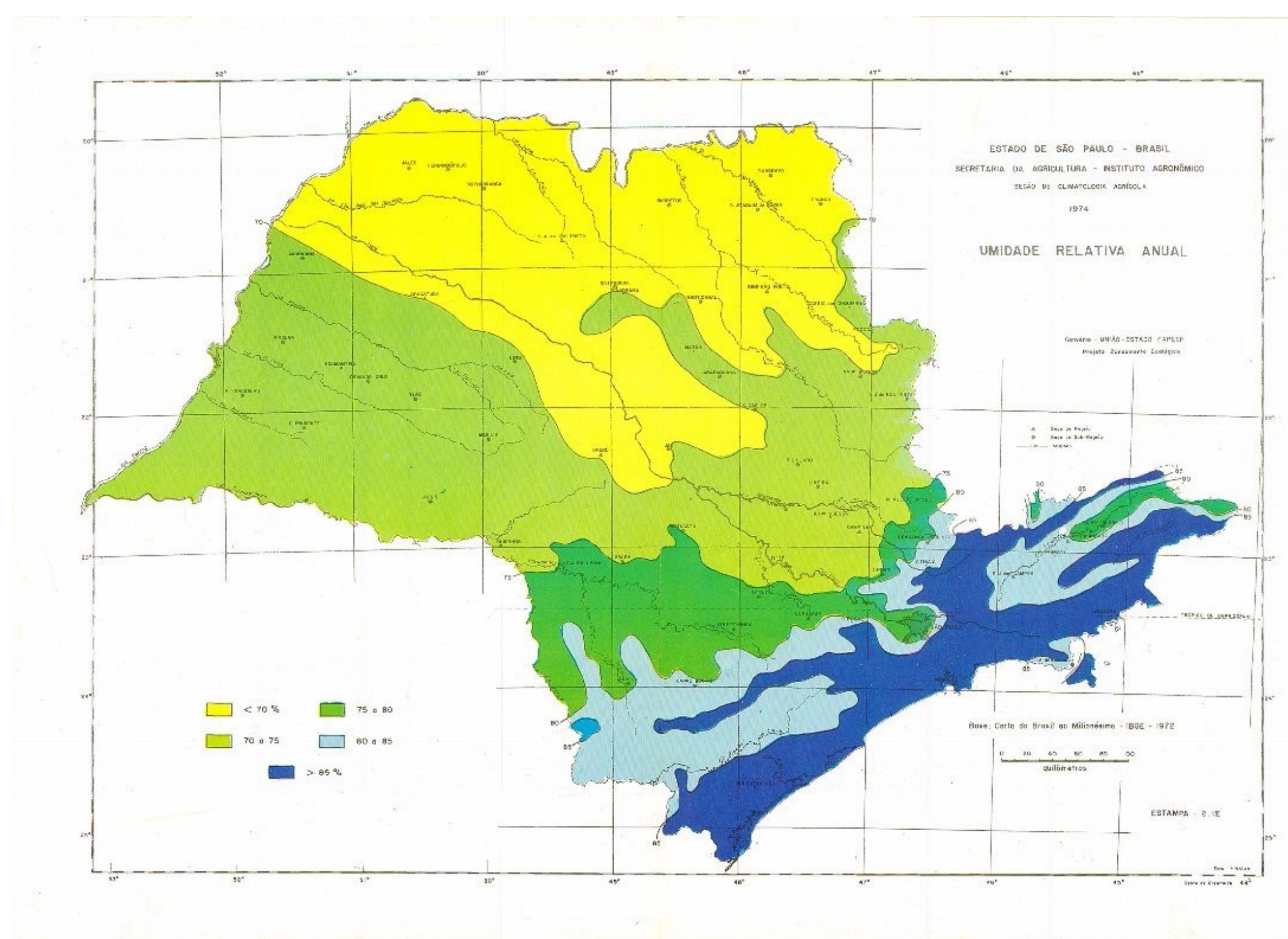


Fig. 2 — Spatial distribution of relative humidity in the State of São Paulo

Fonte: http://www.ciagro.sp.gov.br/climas/cartas_climaticas.html; access 14.06.2017

The study of water vapor allow to enlarge the knowledge of climatic changes which process in urban areas and it contribute to identify, to classify and to measure the climatic vulnerabilities which urban areas are subjected to it.

In previous study realized (Tomás, 2005), through analysis of data of specific humidity in urban area of São Paulo city, a tendency was identified of increase of water vapor in the atmosphere of urban area. However, subordinated to the mesoclimatic conditions in force on the region.

Média Anual Umidade Especifica Estação IAG 1960-2000

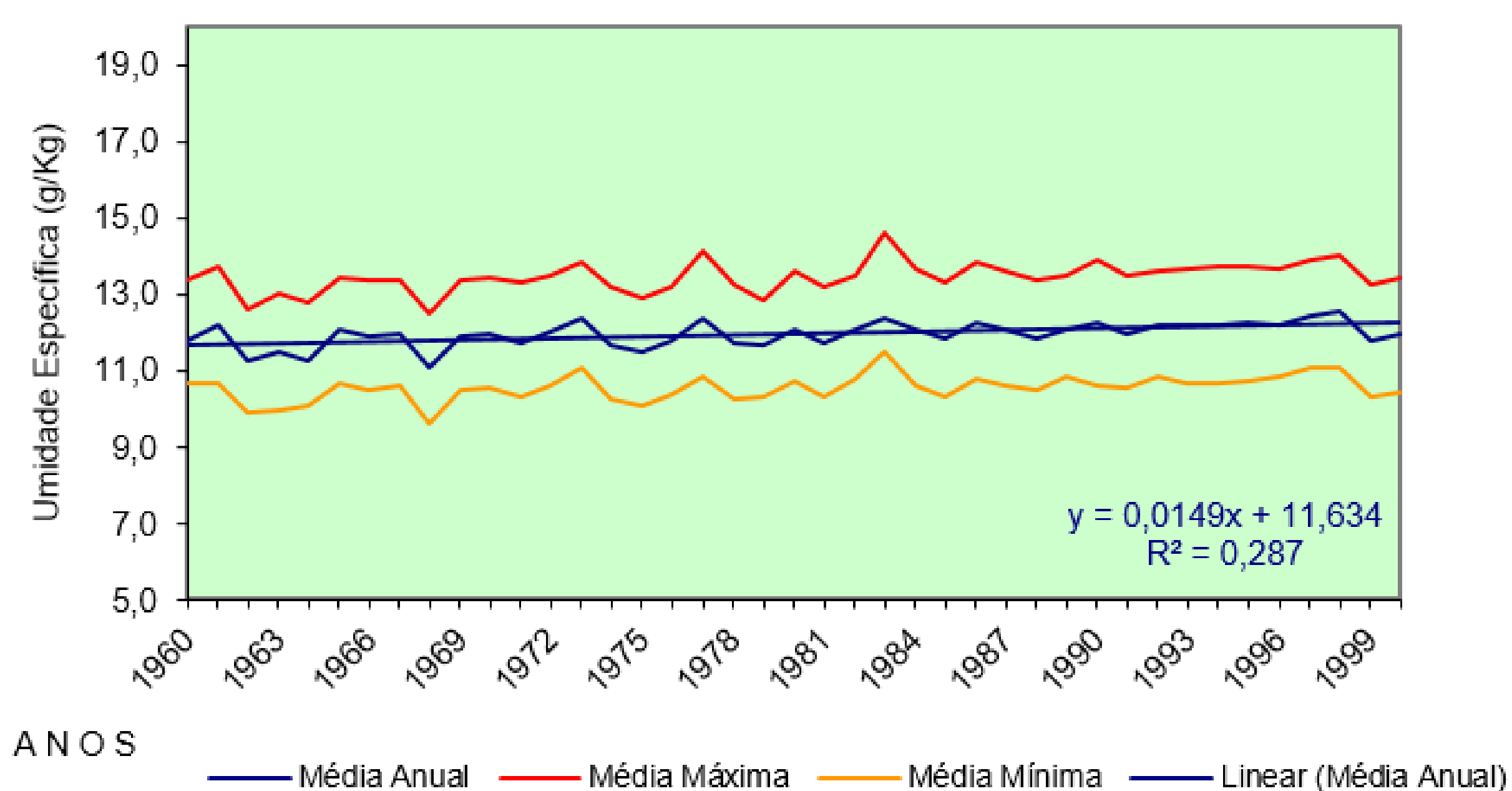


Fig. 3 Annual average values of specific humidity IAG station 1960 — 2000
Fonte: Tomás, 2005.

Média Mensal Temperatura do Ar e Umidade epsecífica Estação IAG 1960-2000

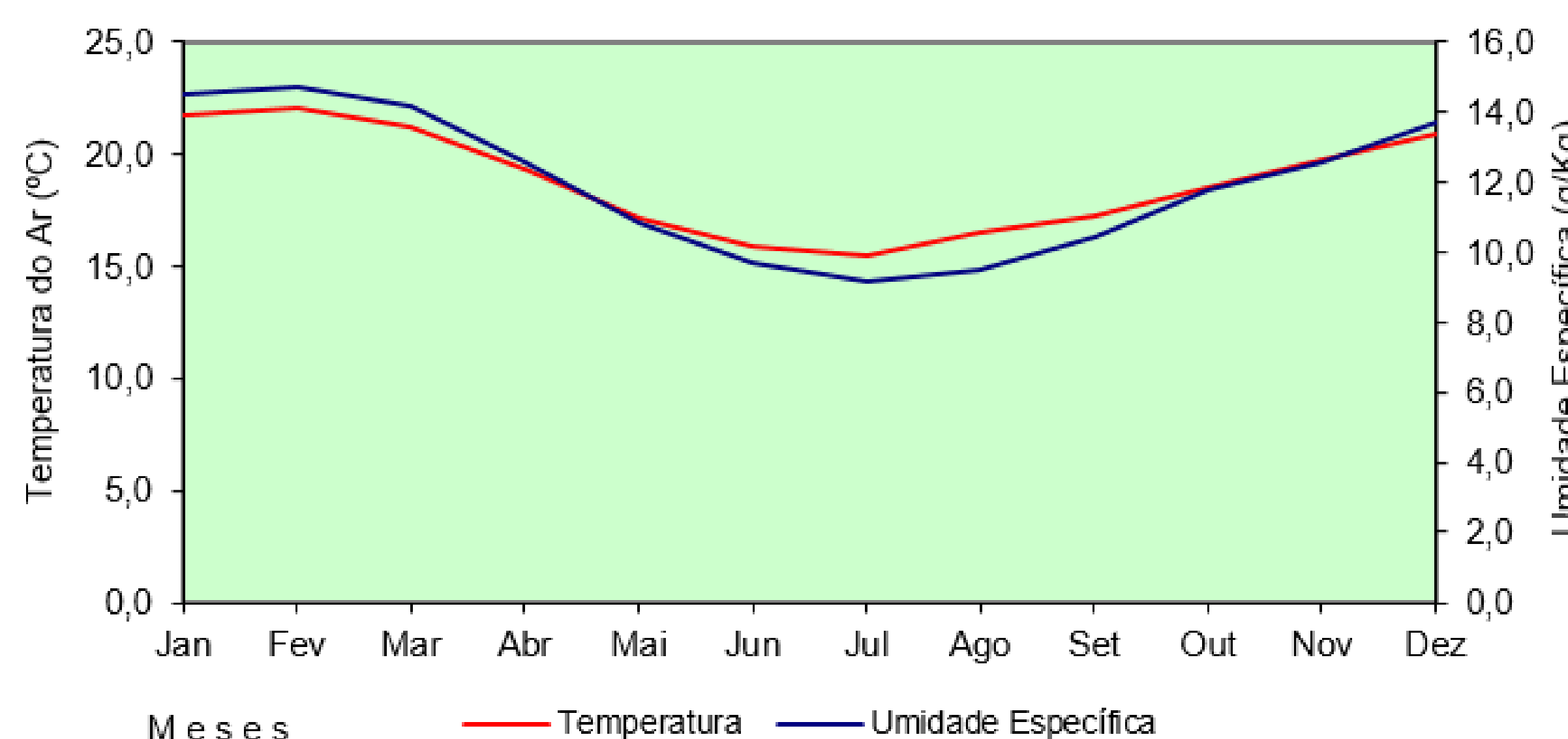


Fig. 4 Monthly average values of temperature and specific humidity IAG station 1960 — 2000
Fonte: Tomás, 2005.