Land degradation in the semi-arid regions of north-east Brazil

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In arid and semi-arid regions biodiversity is under threat by climate change and desertification. The northeast of Brazil is characterized by xerophytic vegetation, which is named „Caatinga", a forest with leaf-deciduous trees and shrubs. The floristic province of the Caatinga occupies with 935,000 km^2 about 11% of the Brazilian territory and belongs together with the Guajiara Peninsula along the Caribeean coast of Colombia and Venezuela and the drylands extending from Chile and Peru into Ecuador to the major arid regions of South America. In contrast to the tropical regions of Brazil like the Amazonas, the environmental situation in the semi-arid regions of Brazil is less in a focus by the public. The paper will characterize the dynamics of the landscape and land degradation in the semi-arid parts of Brazil. Nowadays, the physiognomy of the Caatinga changed drastically. Locally the area is completely devastated and the environmental situation becomes worse due to rural growth in combination with the negative effects of climatic drought periods. The desertification processes leads to a deterioration of soil and water resources and decrease a decrease of biodiversity. Nearly 15% of the area is now affected by desertification. Salinization is a major threat (Fig. 1).

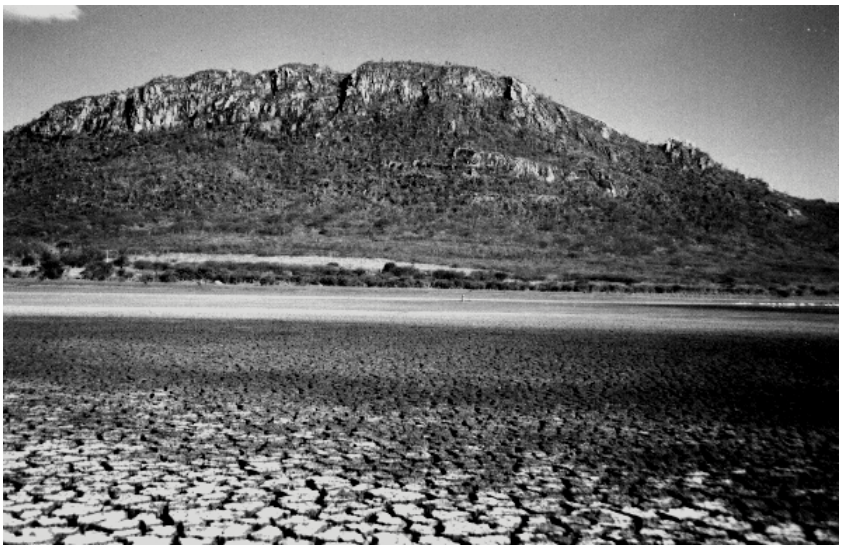

Figure 1: Land degradation and soil salinization in northeast Brazil.

The local economy of the area based on agriculture. In certain areas the losses of crops are high due to the uncertainties of rainfall and the increase of drought periods. Under such climatic conditions crop production requires intensive irrigation. Nowadays, restoration projects are needed to re-establish a vegetation cover. Halophytes are here a suitable tool for the re-establishment of a vegetation cover and soil protections against wind and water erosions.

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