

WHAT DO WE NEED TO CONSERVE IN AGRICULTURAL LANDSCAPES AND WHAT IS POSSIBLE? CONSERVATION FARMING IN BIODIVERSITY HOTSPOTS IN SOUTH AFRICA

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South Africa contains a remarkable richness of plant and animal species. Although the country comprises less than 0.8% of the total land area of the world, it contains ca. 8% of the world's vascular flora, as well as between 2% and 7% of the world's amphibian, reptile, bird and mammal species. Poorly known groups such as insects and fungi are probably equally rich in species.

Despite a reserve network that covers ca. 6% of the land area, a significant proportion of South Africa's biological diversity (especially plants and invertebrates) exists only outside reserves, mainly in agricultural landscapes. Managing biodiversity in agricultural landscapes is therefore critical for the conservation of biodiversity and the GEF has funded a study focusing on four biodiversity hotspots in this region. Our studies examine patterns of biodiversity in relation to current and historical land use, we evaluate the processes that impact on elements of biodiversity and we predict the probability of extinction under different scenarios, we identify key ecosystem services and how they are related to biodiversity (including carbon sequestration), we put an economic value on biodiversity and ecosystem services, and we examine the sociological context in which novel ideas for managing biodiversity will spread through farming communities. The data that are emerging from this study show that even farmers who are ecologically aware often cannot implement practices that conserve a wide range of biodiversity because of economic constraints. It is therefore important to determine which elements of biodiversity should be conserved in agricultural landscapes and to identify economically viable farming practices that will contribute significantly to biodiversity conservation.