



## Plant taxonomic capacity in South Africa

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### Abstract

South Africa's exceptionally rich and diverse flora faces challenges in terms of utilisation, management and conservation; these actions are underpinned by taxonomic research. The principal purpose of this review is to determine whether South Africa has the human capacity and resources to conduct taxonomic research that is required to support end-users of plant taxonomic information, and to identify shortages of capacity or resources that might prove to be an obstacle for plant taxonomic research. From an analysis of the existing gaps in taxonomic information, current research trends, and resources, it is apparent that there is a critical shortage of human capacity in South Africa to conduct plant taxonomic research for the benefit of biodiversity and society. Training institutions need to ensure the supply of suitably trained graduates including concentrating on those who meet Employment Equity targets. The need for more taxonomists is clearly justified, but may not be a priority in a country that already has such shortages of capacity in education and social services. Aside from lobbying for more jobs to be created, there is an urgent need to utilise available resources (human and other) effectively, and to implement a strategy for taxonomic research to ensure that priority activities are conducted.

**Key words:** biodiversity, megadiverse, herbarium, systematics, taxonomists, training, university

### Introduction

South Africa is a megadiverse country with more than 20 000 species and infraspecific taxa of vascular plants and bryophytes (Germishuizen *et al.* 2006). This exceptionally rich and diverse flora faces challenges in terms of management and conservation. Careful planning, sufficient human capacity and financial resources, and efficient use of these are required to ensure that the demands of management and conservation are appropriately and comprehensively met. This review focuses on assessing the current (as of December 2014) capacity in South Africa for conducting taxonomic research on plants of the country, to determine whether there are sufficient resources in terms of: (1) human capacity, (2) research material and (3) financial or other resources, to conduct taxonomic research that is required to support the generation and dissemination of plant taxonomic information to end-users, and to identify shortages that might prove to be an obstacle in implementing a taxonomic research strategy in the future. In this review the term taxonomy is used as synonymous with systematics, to refer not only to the study of classification, but also the investigation of the causes and processes of evolution and the study of phylogeny.

The most recent comprehensive assessment of the state of taxonomy in South Africa was initiated by the South African National Committee for the International Union of Biological Sciences in 1979. The resulting report (Du Plessis 1985) concluded that the state of taxonomy was 'gloomy', and deteriorating. It was recommended that an effort be made to stimulate plant taxonomy, which led to the formation of a National (Stimulation) Programme for Plant Systematics along with the Working Group for Plant Systematics within then the Foundation for Research and Development, now the National Research Foundation (NRF). This working group arranged a variety of activities to promote and stimulate plant taxonomy in the country. From 1988 to 1996, 18 training workshops, five symposia and five joint inter-institutional collecting trips were conducted (Smith *et al.* 1996). Following these activities, South African botanists and colleagues from nine other southern African countries established the Southern African Botanical Diversity Network (SABONET) project in 1996, funded by the Global Environment Facility-United Nations Development Programme.