



Project no. 018340

**Project acronym: EDIT**

**Project title: Toward the European Distributed Institute of Taxonomy**

Instrument: Network of Excellence

Thematic Priority: Sub-Priority 1.1.6.3: "Global Change and Ecosystems"

## **C3.5.8 Report on collaboration with SANBI: Analysis of mega-datasets on southern Africa flora**

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<b>Dissemination Level ( "X" in the relevant box)</b>		
<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	

## Context

An international Agreement to Collaborate (<http://www.e-taxonomy.eu/node/669>) has been recently signed among EDIT, ABRS and SANBI with the purpose of establishing a basis for long-term institutional collaboration and integration in areas of taxonomic and biodiversity research, natural history collections maintenance, improvement and expansion, and capacity building.

The AtC is intended to encourage and gradually improve collaboration and integration of the signatory institutions in the various fields mentioned above. It is a concrete and specific step forward in international collaboration which build on the general commitment set out in the EDIT contract and Consortium Agreement.

The Partners have agreed to work co-operatively to globalise taxonomy and the opportunities for collaboration by: (i) enhancing international staff exchange by temporary work in foreign collections, thereby exposing scientists to different collections and new ideas, sharing expertise, and accessing important global collections; (ii) strengthening global capacity by twinning of research staff with taxonomic and data analysis expertise; and (iii) developing a strategic plan for seeking funding for the Partners through action on globally relevant issues, notably climate change and biosecurity, among others.

Concrete action and work plans have been made explicit in seven appendices attached to the AtC and signed by the individual participating institutions.

## Appendix 2 of the AtC: Analysis of mega-datasets on southern African flora

In the framework of Appendix 2 of the AtC “Analysis of mega-datasets on southern African flora”, collaboration activities have been started between EDIT and SANBI.

The purpose of this collaboration is to strengthening global capacity building by twinning of research staff with taxonomic and data analysis expertise. It was decided that the means to achieve that would be: (i) collaborating with experts on e.g., data mining and the modelling of spatial information using data bases and sets on the flora of S. Africa, and (ii) opening postdoctoral and staff-twinning programmes for early career European scientists to work with an experienced and/or early career South African/Australian counterpart.

In order to find funding to start further collaboration, a pre-proposal research project entitled 'Using botanical diversity patterns to quantify current and future values of ecosystem services that support human well-being in South Africa', has been written and submitted to NWO /WOTRO(Netherlands Organisation for Scientific Research), for the Integrated Programmes call 2010.

## Pre-Proposal research project

### 1. Motivation

South Africa harbours the world's most diverse temperate flora which is threatened by land-use changes, climate change, and alien invasive species. At the same time, a large proportion of the rural human population depends on natural vegetation. Next to direct benefits (e.g. provisioning of marketable plants), natural vegetation provides amongst other things

ecosystem services like water provision and purification, soil fertilisation, pollination. These services are often not sufficiently recognized, valued, nor taken into account by policy makers.

Making use of over 1 million digitized plant records of South Africa, combined with state of the art ecological and systematic modelling techniques, allows the identification and valuation of direct and indirect functions of and threats to natural vegetation at an unprecedented high spatial resolution, while taking predicted impacts of climate change into account. Mainstreaming these results will guide policy towards a sustainable environment and the reduction of poverty and hunger, e.g. through economic instruments to safeguard ecosystem services.

## 2. Summary of the research proposal

Through utilising comprehensive georeferenced taxonomic datasets, in combination with modern spatial biodiversity analysis methodologies such as species distribution modelling, the project will provide up-to-date information to guide decision-makers on the value of ecosystem services securable from a healthy environment. Much of the biodiversity-rich South African landscape is classified as dryland, and especially rural communities in such areas increasingly depend on natural products and services to ensure sustainable livelihoods. These approaches, linked to an investigation into assessing the economics of ecosystems and biodiversity, will inform a broad-based analysis of the monetary value of ecosystems and biodiversity as well as an exploration of pro-poor PES options. The results of these will, in turn, be critically important to facilitate taxonomic and biodiversity advocacy. Human capacity will be built through training and skilling two South African PhD students in innovatively dealing with research questions based on environmental conditions prevalent under current, and predicted climate scenarios.