



Submit by 13 January 2006

## DARWIN INITIATIVE: APPLICATION FOR POST-PROJECT FUNDING 2006

Please read the Guidance Notes before completing this form. Give a full answer to each section; applications will be considered on the basis of information submitted on this form and on the merit of your current / recently completed Darwin Initiative project. The space provided indicates the level of detail required. Please do not reduce the font size below 11pt or alter the paragraph spacing. Please note the additional information requirements (CVs and letters of support as detailed in the Guidance for Applicants).

### 1. Name and address of UK organisation

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

### 2. Post-Project details

**Project Title:** Integrating Evolutionary History and Phylogenetic Measures of Biodiversity into Conservation Planning

**Proposed start date:** 1 August 2006      **Duration of project:** 2 years

Darwin funding requested	Total	2006/07	2007/08	2008/09
	£98297	£18036	£57839	£22422

### 3. Original Project Title and Defra reference number

DNA banking, Phylogeny and Conservation of the South African Flora (162/12/008)

### 4. Principals in project. Please provide a one page CV for each of these named individuals where different from the original project. Letters of support must also be provided from the host country partner(s) endorsing the partnership and value of the Post-Project funding.

Details	Project leader	Other main UK personnel (working more than 50% of their time on project)	Main project partner or co-ordinator in host country
<b>Surname</b>	Savolainen		Rouget
<b>Forename(s)</b>	Vincent		Mathieu
<b>Post held</b>	Plant Molecular Systematist/Deputy-Head of Molecular Systematics		Head of Biodiversity Planning Unit
<b>Institution (if different to above)</b>			South African National Biodiversity Institute (SANBI)
<b>Department</b>	Jodrell Laboratory		Biodiversity Directorate
<b>Telephone</b>			
<b>Fax</b>			
<b>Email</b>			

**5. Define the purpose (main objective) of the Post-project in line with the logical framework. How is it linked to the objectives of the original Darwin project?**

The original project purpose was to build the research and conservation potential of plant scientists and conservationists in South Africa by setting up a DNA bank of archived plant genetic resources, under a legal framework in line with South Africa's approach to the CBD. This Post-project seeks to build upon the successful data production and networking of the original project by focusing on four scientific aspects deserving further attention:

- (i) link conservation planning with the phylogenetic data that were produced during the original project, by coordinating follow-up scientific research;
- (ii) calculate extinction risks for taxa within South Africa's three biodiversity hotspots, building on the complete red list for the South African flora (to be published imminently by IUCN);
- (iii) continue to transfer knowledge regarding the use of phylogenetic data to in-country scientists, students and conservationists, by providing training and research opportunities;
- (iv) provide baseline data for the development of future conservation actions within current partnerships and to develop new partnerships (e.g. see below and with other Darwin projects in South Africa), and extend the use of DNA resources to DNA barcoding for conservation (e.g. at the Kruger National Park; KNP).

The core of this application was developed at our workshop in Port Elizabeth last March where we were able to bring together evolutionary biologists and conservation planners to explore the existing, and potential, contribution of phylogenetic diversity (PD) measures in the conservation decision-making process. Two prominent conservation biologists joined the team and will take active roles in the post-project: Prof Richard Cowling (professor in plant conservation; Nelson Mandela Metropolitan U., South Africa) and Dr Dan Faith (pioneer for using PD in conservation planning; Australian Museum). Dr Jonathan Davies (a former MSc student from the University of Cape Town, now researcher in evolution and conservation at U. of Virginia) was also a participant at this workshop and he will work within the post-project.

**6. What have been the main outcomes (achievements) of the original project to date?**

(1) A DNA banking facility has been established, equipped and staffed at SANBI, hosting over 4,000 DNA extracts from South African flora. This facility is used for research in taxonomy and conservation, and over 50 students received some component of their training in molecular phylogenetics there. The DNA bank is in increasing demand as DNA extracts are now routinely requested by scientists, and so far genetic material has been sent to 10 different institutes, representing six countries (South Africa, UK, USA, Belgium, Japan and Australia). This facility is the second largest DNA bank for plants worldwide, which is dedicated to research and in-country conservation. This has generated much interest within the applied and basic scientific community in South Africa and we hope to capitalise on this momentum in this proposed extension. Several scientists in other African countries have also contacted us with the aim to set up similar facilities, e.g. in Namibia, Kenya and Nigeria.

(2) We have been able to compile the first comprehensive manual on DNA banking for use by biodiversity and conservation scientists; it has been jointly published by Kew and IUCN.

(3) We have also been able to disseminate our project activities to a wide audience: including the general public via radio and newsletters, several South African government officials via the Environmental Affairs and Tourism Portfolio Committee, and via a letter in the journal *Science*. This has engendered widespread interest in the project and highlighted the pressing need to implement DNA banking strategies in bio-diverse countries such as South Africa.

**7. What steps have been taken to ensure that project purpose and outputs will be achieved within the original project term?**

We foresee that the project 162/12/008 exit strategy will be implemented without problems. Most importantly, the DNA bank manager-Darwin funded post of Ms K. Balele has now been made permanent and funding has been taken forward by SANBI. Together with project partners and several co-authors from various institutions in South Africa, UK, USA and Australia, we have written a final draft on the phylogenetics of the Cape flora and its implication in conservation, and arrangements have been made to communicate this key project output to the Proc. Natl Acad. Sci. USA by the end of February 2006.

**8. Please list the overseas partner organisation(s) that will be involved in the Post-project and explain their role and responsibilities in this work and in the original project (if applicable).**

SANBI (M. Rouget, K. Tolley, J. Davies, F. Forest, J. Donaldson; project co-ordination, liaise with Government Officials, in charge CBD implementation); University of Cape Town (UCT; T. Hedderson, University Training); University of Johannesburg (UJ; M. van der Bank, training, DNA Barcoding in the Kruger National Park), Nelson Mandela Metropolitan University (NMPU; R. Cowling, Conservation Planning). The Australian Museum will also be a new partner (D. P. Faith, training, software, PD models) (see 1).

**9. Please provide written evidence of commitment and capability of overseas partner in achieving the purpose and outputs of this project. Are formal agreements in place for overseas partner responsibility in this project?**

The original project MoU that was signed between SANBI and Kew covers most of the proposed activities and will run for at least another two years (7/10/03 – 7/10/08). As initially planned in this MoU, only appendices will be necessary to formalise the new responsibilities of the partners during this post-project. Additional formal agreements have also been signed for data sharing (e.g. for using the PRECIS distribution data from SANBI-Pretoria). Within South Africa, another MoU will be set up and signed between SANBI and UJ (and Kew as appropriate; with help from CBD officers at Kew) for sharing plant DNA extracts collected in the KNP and that will be stored in SANBI's bank, and also according to KNP's terms and agreements.

**10. What other consultation or co-operation will take place or has taken place already with other stakeholders such as local communities. Please include any contact with the government of the host country if not already provided.**

A workshop was held at Port Elizabeth last March and included 12 delegates from 9 institutions (6 from South Africa, plus USA, Australia and Kew in the UK; see 1 & 7); they discussed the core of the present extension. This project has further been endorsed by the conservation authorities of the Kruger National Park, especially with regards to DNA banking their flora and use of the new technology of DNA barcoding for conservation purposes (see annexes).

**11. Are you aware of any other individuals/organisations carrying out similar work? Are there completed or existing Darwin Initiative projects (other than your original project) which are relevant to your work? Please give details, explaining the similarities and differences. Show how the outputs and outcomes of your work will be additional to any similar work, and what attempts have been/will be made to co-operate with and learn lessons from such work for mutual benefits.**

There are other Darwin projects in South Africa, some completed and others still running, but none of them is duplicating our efforts. We propose to organise a workshop that will help coordinate actions among these projects so that significant added-value can be brought to each initiative. We will work towards maximising the use of our project outputs by the other Darwin projects. For example 'Africulture' by Garden Africa works with medicinal plants, and they could benefit from our DNA bank. We will make our DNA database accessible to them for those species of interest, especially because DNA barcoding can provide species identification, e.g. from plant powder, and be useful in controlling trade. The same applies to the seeds 'Cryoconservation Centre of Excellence' for Sub-Saharan Africa that was funded in the last round and that is based in South Africa. The 'DICE' project focuses on producing maps for prioritising conservation efforts in Maputaland; our project is complementary as it is producing maps of phylogenetic diversity as an aid to conservation planning (e.g. Cape Floristic Region, KNP regions, Gouritz corridor, etc) and it will be essential to compile/combine efforts to cover the entire country. The 'Capacity Building & Climate Change' project of the University of Sheffield will also benefit from our approach on mapping biodiversity and taking into account the evolutionary history of each region of conservation concern.

**12. How will the project assist the host country in its implementation of the Convention on Biological Diversity? Please make references to the relevant article(s), of the CBD thematic programmes and/or cross-cutting themes (see Annex for list and worked example) and rank the relevance of the project to these by indicating percentages. Is any liaison proposed with the CBD national focal point in the host country? Further information about the CBD can be found on the Darwin website or CBD website.**

A comprehensive analysis of the CBD programmes and themes supported by our inter-disciplinary project is published in our DNA banking manual (see 6).

The CBD relevance of this project is spread across many articles and cross-cutting issues. The South African CBD National Report links the DNA bank project most explicitly to Articles 7 and 9 (see 13), but a fuller breakdown is as follows:

Articles (30%; include art 7 on identification and monitoring (5%), 9 on ex situ conservation (5%) 12 on research and training (5%), 15 on access and benefit-sharing (5%), 16 on access to and transfer of technology (5%), 17 on exchange of information (5%) and 18 on technical and scientific cooperation (5%))

Cross-Cutting Programmes: Global Strategy for Plant Conservation (30%; include targets 2 (5%), 3 (5%), 9 (5%), 14 (5%), 15 (5%), and 16 (5%)); 2010 Biodiversity Target (20%: includes action on focal areas (a) and (f)); Access to genetic resources (5%); Global Taxonomic Initiative (5%); Technology Transfer and Cooperation (5%).

SANBI works closely with the CBD National Focal Point in RSA and there is very good communication with government regarding SANBI's role and activities.

The CBD vision for 2006 (e.g. CBD press release at <http://www.biodiv.org/doc/press/2006/pr-2006-01-cbd-en.pdf>) highlights priorities in addressing the 2010 biodiversity target. This project will further explore the use of DNA barcoding and PD for rapid assessment approaches for monitoring towards the 2010 targets.

**13. How does the work meet a clearly identifiable biodiversity need or priority defined by the host country? Please indicate how this work will fit in with the National Biodiversity Strategies or Environmental Action Plans, if applicable.**

Under National Environmental Management Biodiversity Act (NEMBA, Act No. 10 of 2004) SANBI has been mandated by the South African government to co-ordinate and promote research into taxonomy, and indigenous biodiversity, and to monitor and report on the status of the country's biodiversity. In addition, SANBI is responsible for monitoring and reporting to the Minister of Environment on the conservation status of all listed threatened or protected species and ecosystems, with the aim of aiding the Minister in biodiversity planning. The Darwin extension will assist in fulfilling this mandate by making use of and expanding upon the already existing DNA database, DNA bank, and continuing phylogenetic studies to better understand the taxonomy of South African flora. Furthermore, this extension would aid in a direct assessment of the conservation status of species and ecosystems, providing a source of information which SANBI can draw upon to meet the government mandate outlined in NEMBA. This project was clearly endorsed in the South African 2<sup>nd</sup> National CBD Report, especially with regard to Article 7 and Article 9, e.g. *"Together with the Kew Royal Botanic Gardens, the NBI [SANBI] has established a DNA Bank in South Africa. It will represent a unique archive of plant genetic diversity in South Africa, holding over 2 200 genomes from all genera. It will also serve as a resource to facilitate the discovery of novel genes and for the identification of areas of high priority for conservation."*

**14. If relevant, please explain how the project work will contribute to sustainable livelihoods in the host country**

All project outputs and outcome will be widely disseminated and available to any stakeholder, possibly leading to local conservation initiatives (eco-tourism, conservation farming, etc). But perhaps more importantly training young scientists at Hons/MSc levels will be part of establishing and reinforcing international collaborations for this new generation of scientists.

**15. What will be the impact of the work and how will this be achieved? How will these help to strengthen the long-term impact and legacy of your original Darwin project? Please include details of how the results of the project will be disseminated and put into effect to achieve this impact.**

The project will build and transfer additional knowledge to in-country scientists, students and conservationists. It will be crucial to continue training of South African scientists with regard to the use of phylogenetic data and new tools such as DNA barcodes, and to provide graduate research opportunities for young South African scientists. For example, the training received at Kew by the DNA bank manager (K. Balele) under the original project, is now being passed onto two SANBI interns currently working in the laboratory. These interns plan to continue with graduate level studies, and their experience at SANBI is enriching their knowledge and enhancing their scientific skills and career prospects. Both interns are females from previously disadvantaged backgrounds, demonstrating the strong commitment to training individuals that are not well represented in the South African scientific community.

With this extension, we are seeking to fund 3 Hons (UJ) and 2 MSc (SANBI/UCT) bursaries for South African students who will work on conservation planning and DNA barcoding in the KNP.

We also believe that a longer-term post-doc based in South Africa would greatly enhance knowledge transfer, therefore Dr Jonathan Davies (expert in conservation phylogenetics) will be based at SANBI for 18 months to work on identifying extinction risks and extinction hotspots in South Africa, building on the near-available IUCN red listing of this flora. He will transfer his expertise to South African students by giving regular seminars, participate in the course to be organized under this post-project and co-supervise the MSc students. This postdoc will also have overall responsibility for drafting the first two reports and keep the budget updated on financial excel sheets (but see question 24).

As a team, we also plan to publish at least 4 papers for the scientific audience plus one paper for the popular press, organize one university short course (see 20) and two workshops (joint Darwin projects and final post-project workshop), and write a comprehensive report to the CBD authorities to help disseminate our results and maximize impact with policy makers. Project leader and host country coordinator will coauthor all 5 resulting publications; the other partners will also coauthor these publications as appropriate.

**16. Explain how gains from the Post-project work will be distinct and additional to those of the existing project. Show where possible how these gains require limited resources and could not be achieved without the funding.**

A series of conservation assessments and phylogenetic diversity (PD) studies, with the potential to affect significantly further conservation planning, can be addressed within this 24-month extension, and will build upon the DNA bank facility that we have now established in South Africa (see below). This includes: (i) a region wide conservation analysis of PD using the "Acocks data" (i.e. a country-wide botanical survey transect data) and endangerment categories; (ii) a hotspots-wide study using plant genera (extension to the Cape analysis of initial project); (iii) a conservation assessment in the Gouritz region (i.e. a mega corridor that links a number of conservation areas and farms/private lands into a single conservation area; it is situated in one biodiversity hotspots but also is heavily impacted by agricultural land use); (iv) a comparison of PD versus other measures of biodiversity in plants, and an assessment of species threat from plant phylogenetic data. By mapping estimates of extinction risk (IUCN) across the tips (extant species) of a phylogenetic tree, comparative methods can be employed to identify correlates of threat. However, due to the lack of data, these analyses have so far been limited to just a few unrepresentative clades, restricted almost entirely to mammals.

We also plan to train several young conservation scientists (see 20) at a minimum cost: most material has been collected and is available via the DNA bank at SANBI. Our DNA banking efforts have also lead to several new initiatives and significant endorsement through the Sloane and Moore Foundation's interest in plant DNA barcoding for species identification. Kew and SANBI (along with partners from across the world) have obtained funding to take the plant DNA barcoding initiative one step forward and identify the 'universal plant DNA barcode' by December 2006; together with UJ, we will undertake under this post-project a pilot study on DNA barcoding the flora of the KNP for conservation purposes. UCT and SANBI are already undertaking DNA barcoding of about 1/3 of the target-taxa identified for the Moore/Sloan project, so that the Darwin post-project can co-ordinate actions in terms of what the final standard DNA barcode will be. Furthermore, our DNA barcoding study will be providing at least 1000 new DNA samples for the DNA bank and help achieve the initial aim to have a DNA sequence and a representative in a phylogenetic tree for every plant genus in South Africa (with at least 200 new rbcL sequences to be added to the current database).

**17. How will the work leave a lasting legacy in the host country or region?**

The extension would assist with capacity building in South Africa by providing several Hons and MSc students with the opportunity to work on projects that are relevant to conservation and by providing bursaries to these students. Furthermore, it would give them the chance to receive training and expertise in an international context, giving them contact with overseas post-docs (and one to be based in South Africa) and researchers in addition to the South African partners. An entire network of scientists will be strengthened and transfer of knowledge will be multi-directional; this will help achieve excellent research and judicious conservation planning.

**18. Please provide a clear exit strategy and describe what steps have been taken to identify and address potential problems in achieving impact and legacy**

All stakeholders have already committed themselves to work together towards the project goals; all expertise is present among partners and collaborators but what is now needed is to coordinate actions and transfer knowledge. Should some partners not be able to perform their job (e.g. resignation, health, etc), Dr John Donaldson (Head of Kirstenbosch Research Centre in South Africa) or Dr Mark Chase (Head of Molecular Systematics at Kew) will designate replacements. Should Dr Davies not be able to take his duties as postdoc in South Africa, another postdoc will be hired following an advertising/interview process lead jointly by the project leader and the host-country coordinator. The DNA banking facility will continue to run under funding by SANBI and following the appropriate training that will take place during the post-project. The DNA barcoding database will be available (also to CITES), and KNP/UJ will be able to continue using this technology for conservation and monitoring. The publications and deposition of data in appropriate databases (e.g. GenBank) will enable easy access for future researchers to continue to expand knowledge of the South African flora and its requirements for sustainable use.

**19. How will the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?**

The Darwin Initiative will be duly acknowledged in all publications. Two articles in newsletters will be circulated internationally (Kew Scientist and SANBI's Plant Conservation Projects). The Darwin logo will be used in all presentations at local, national and international conferences, hands-on protocols for University students, Master theses, project website and reports to conservation authorities.

**20. Will the Post-project include training and development? Please indicate who the trainees will be and criteria for selection indicating where they were involved in the original project. How many will be involved, and from which countries? How will you measure the effectiveness of the training and will those trained then be able to train others? Where appropriate give the length and dates (if known) of any training course. How will trainee outcomes be monitored after the end of the training?**

Training will be a key component of this post-project. Students will be selected according to the entrance requirements for South African Universities, and applicants from previously disadvantaged backgrounds will be strongly encouraged to apply. The students will be expected to successfully complete their degree by the end of academic year 2008. Each student will co-author one scientific paper as project outputs, preferably as lead author for the MSc students. Students will benefit from day-to-day co-supervision by project partners and postdoc J. Davies, who will be based at SANBI for 18 months. A course on 'Phylogenetic Diversity for Conservation Planning' will also be organised at UCT to reach a wider audience (students will apply to T. Hedderson and be selected by a panel of 3 project partners since the course will have to be limited to 20 of the most promising students, but again also recruiting from previously disadvantaged backgrounds). The course will be given by project partners and with invitee D Faith.

## LOGICAL FRAMEWORK

21. Please enter the details of your project onto the matrix using the note at Annex 1 of the Guidance Note.

Project summary	Measurable indicators	Means of verification	Important assumptions
<p><b>Goal:</b></p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> <li>the conservation of biological diversity,</li> <li>the sustainable use of its components, and</li> <li>the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul>			
<p><b>Purpose</b></p> <p>(i) co-ordinate research; (ii) calculate extinctions risks; (iii) transfer knowledge to in-country scientists, students and conservationists with regard to the use of phylogenetic data and DNA barcodes; (iv) integrate the human dimension; (v) publish concerted conservation actions</p>	<ol style="list-style-type: none"> <li>1. Research and training activities in partnership with academic and governmental sectors increase</li> <li>2. Awareness of biodiversity issues increase among students and young scientists</li> <li>3. In country CBD strategy and monitoring of 2010 targets take into account post-project outputs &amp; outcomes</li> </ol>	<ol style="list-style-type: none"> <li>1. Joint supervision and research documents and correspondence between SANBI, UJ, UCT &amp; Kew</li> <li>2. Records of requests to undertake Hons/MSc, participate in projects, and attend courses by students and young scientists</li> <li>3. Conservation &amp; CBD documents updated</li> </ol>	<p>Strategies developed throughout the post-project are of high quality and in demand by wider scientific and nature conservation authorities</p> <p>Joint programme of activities has proven useful and partnership continues</p> <p>SANBI's statutory mission continues to be supported by Government</p>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. DNA Barcoding</li> <li>2. Training</li> <li>3. Dissemination</li> <li>4. Conservation assessments</li> <li>5. South African Conservation Scientists network enhanced</li> </ol>	<ol style="list-style-type: none"> <li>1. 500 DNA barcodes produced</li> <li>2. 20 training-weeks, 2 MSc, 3 Hons, 2 postdocs (total 89 month-person)</li> <li>3. 5 papers submitted/2 newsletters circulated</li> <li>4. 3 assessments published</li> <li>5. &gt;15 staff working together</li> </ol>	<ol style="list-style-type: none"> <li>1. DNA sequences available in GenBank</li> <li>2. Attendees lists/diplomas</li> <li>3. Manuscripts available, correspondence with editors/publishers</li> <li>4. Reports available</li> <li>5. Meeting reports available</li> </ol>	<p>There is a broad interest from staff and students for training and networking in biodiversity and conservation</p> <p>Material produced is of good quality &amp; accepted for publication</p> <p>Collecting permits continue to be issued by KNP</p>



Activities	Activity Milestones (Summary of Project Implementation Timetable)
1.DNA extractions and sequencing for DNA barcoding and for hotspots-wide surveys 2.Data compilations; assessing extinction risks 3.PD analyses 4.Workshops 5.Course	<p><u>Months 1-12:</u>            Data compilations (IUCN, phylogenies) and extinction risks analyses start (08/06); training course analyses at UCT (01/07); 2 MSc and 2 Hons research projects start (02/07); presentation of results at conference (06/07); one paper submitted (08/07);</p> <p><u>Months 13-24:</u>            Darwin Initiative officer start (09/07); 250 DNA barcodes produced (11/07); 2 Hons completed (11/07); Workshop at SASSB VII ((01/08); 2 Hons start (02/08); Extinction risks analyses completed (02/08); 1 paper submitted and 1 press release (03/08); 250 additional DNA barcodes produced; 3 additional papers submitted (06/08); Workshop (07/08); Conservation assessments completed and reports produced (07/08).</p>

**22. Provide a project implementation timetable that shows the key milestones in project activities.**

Project implementation timetable		
Date	Financial Year	Key milestones
Jul 06	Apr – Mar 2006/07	Pre-project meeting at SASSB VI in KNP organised by UJ; MSc opportunities advertised
Aug 06		Project launch; Postdoc extinction risk analyst starts at SANBI (TJD); Working visit from Dr F. Forest to SANBI
Jan 07		Training course at UCT; Annexes for MoU between SANBI/Kew signed
Feb 07		2 MSc start at SANBI/UCT, 2 Hons start at UJ
Apr 07		Apr – Mar 2007/08
May 07	MoU for DNA barcoding KNP/banking signed between UJ/SANBI	
Jun 07	International conference attended and results of post-project presented (Evolution meeting)	
Aug 07	Conservation/science article submitted to popular press	
Sep 07	Darwin Initiative officer starts duties for post-project	
Nov 07	Apr – Mar 2008/09	250 DNA barcodes of KNP produced
Jan 08		Workshop with other Darwin projects, possibly at SASSB VII
Feb 08		1 Hons start at UJ Extinction hotspots and extinction risks for plant lineages identified
Mar 08		1 research paper on extinction risks submitted to high-profile science journal (IF > 2)
April 08		International press release (SANBI) 250 DNA barcodes of KNP produced
May 08	2 research papers submitted by MSc students	

Jun 08	1 joint research paper by partners submitted to high-profile conservation journal (IF > 2); 200 rbcL produced Final Darwin workshop;
Jul 08	All conservation assessments finished and written up as scientific papers plus a general report made available to CBD authorities; End of post-project (all MSc/Hons completed for this end of academic year)

**23. Set out the project's measurable outputs using the separate list of output measures.**

<b>PROJECT OUTPUTS</b>		
<b>Year/Month</b>	<b>Standard output number (see standard output list)</b>	<b>Description (include numbers of people involved, publications produced, days/weeks etc.)</b>
2008/Jul	2	2 MSc
2008/Jul	4A/B	3 undergrads for 10 months per year (Hons)
2007/Jan	4C/D	20 students for 1-wk course at UCT
2008/Feb	5	1 postdoc for 18 months at SANBI
2008/Jul	6A/B	1 Darwin Initiative Project Officer (10 months)
2007/Jan	7	1 training material produced (course UCT)
2008/Jul	8	8 wks spent by UK staff in RSA
2008/Jul	9	3 sp/management plans (Cape, Gouritz, KNP)
2008/Jul	11A/B	4 peer-reviewed papers
2008/Jul	12A	1 DNA Barcoding computer databases
2008/Jul	12B	1 DNA bank computer databases enhanced
2008/Jul	13A	1 sp ref collection (500 barcodes + 200 rbcL)
2008/Jul	13B	2 sp reference collection (Compton Herb, KNP)
2008/Jul	14A	2 workshops (Darwin projects + Final Wshp)
2007/Jun	14B	1 conferences attended (Evolution meeting)
2008/Mar	15A/B	1 press release in host
2008/Mar	15C	1 press release in UK
2008/Jul	16	2 newsletters (SANBI & Kew Scientist)
2008/Jul	17B	1 network enhanced (PD/Barcoding)
2006/Dec	20	1 laptop (£800)
2008/Jul	23	£196,483 (see 25c & 26)

## MONITORING AND EVALUATION

**24. Describe, referring to the Indicators in the Logical Framework, how the progress of the project will be monitored and evaluated, including towards delivery of its outputs and in terms of achieving its overall purpose. This should be during the lifetime of the project and at its conclusion. Please include information on how host country partners will be included in monitoring and evaluation.**

The partners will exchange quarterly e-bulletins to help with monitoring; all following figures will be updated against the targets of the project:

- (a) Number of students and staff trained, university degrees attained;
- (b) Workshops and courses organised, number of applicants.
- (c) Conservation assessments and phylogenetic analyses made;
- (d) Progress on manuscripts; publications in preparation, submitted and published;
- (e) Report produced and press releases;

The responsibilities of each partner in this project are already/will be defined in the MoU and will be part of the respective forward job plans of the people in charge of duties.

Partners will also have regular informal telephone meetings to discuss and review progress. Host country partners will take a lead role with monitoring progress and ensure that targets are met; together with host country partners, the postdoc (under supervision by host country coordinator) will draft the reports for the Darwin Initiative before being completed at Kew. Towards the conclusion of the project when pressure for achieving more numerous targets are important (year 2), Darwin Project Officer Mr G. Gigot will dedicate his time at Kew with the project coordination and rbcL sequencing (he is currently Darwin Project Officer on MesoAmerican orchids (14/001) and his duties with this project terminate in August 2007).

This post-project, for the most part, supports personnel and resources in the host country, with 3 Hons/2 MSc bursaries, 18 person-months at post-doctorate level and 20 students for 1 week-course, i.e. total 89 person-months requested in South Africa, versus only 10 person-months at band D level requested at Kew (UK).

## FINANCIAL ASPECTS

**25. Please state costs by financial year (April to March). Use current prices - do not include any allowance for assumed future inflation. For programmes of less than 2 years' duration, enter 'nil' as appropriate for future years. Show Darwin funded items separately from those funded from other sources. Please note that although three financial years are shown here, funding will only be awarded for a maximum period of two calendar years**

**Table A: Staff time. List each member of the team; their role in the project rate and the percentage of time each would spend on the project each year.**

	2006/2007	2007/2008	2008/2009
	%	%	%
Dr V. Savolainen (Project Leader F)	15	15	15
Prof M. Chase FRS (Plant DNA Barcoding Leader F)	5	5	5
Ms R. Cowan (Plant DNA Barcoding Coordinator C)	5	0	0
Mr G. Gigot (Darwin Project Officer D, from 1/9/07 onwards)	0	100	100
Ms K. Davis (CBD Implementation Officer D)	5	0	0
Mr M. Powell (DNA Sequencing Specialist D)	10	5	5
Dr K. Tolley (Head of Molecular Systematics Laboratory, SANBI)	7.5	7.5	7.5
Dr M. Rouget (Head GIS/Conservation Planning; Host Country Coordinator SANBI)	30	40	30
Ms Kholiwe Balele (DNA bank manager)	20	20	20

Dr F. Forest (Visiting Scientist)	20	5	5
Extinction Risk Analyst (TJD 18 months SANBI)	100	100	100
Dr R. Lahaye (DNA Barcoding Officer UJ from)	100	100	100
Prof R. Cowling (Prof of Conservation, N Mandela U)	10	10	10
Prof T. Hedderson (Course, MSc Supervisor UCT)	20	30	20
Dr M. van der Bank (Kruger DNA barcoding UJ)	20	30	20

**Table B: Salary costs. List the project team members and show their salary costs for the project, separating those costs to be funded by the Darwin Initiative from those to be funded from other sources.**

Project team member	2006/2007		2007/2008		2008/2009	
	Darwin	Other	Darwin	Other	Darwin	Other
V Savolainen						
M Chase						
R Cowan						
G. Gigot						
K Davies						
M Powell						
K Tolley						
M Rouget						
K Balele						
F Forest						
Extinction Risk Analyst						
R Lahaye						
R Cowling						
T Hedderson						
M van der Bank						
<b>Total cost of salaries</b>						

**Table C. Total costs. Please separate Darwin funding from other funding sources for every budget line.**

	2006/2007	2007/2008	2008/2009	TOTAL
<b>Rents, rates, heating, lighting, cleaning,</b>				
• Darwin funding				
• other funding				
<b>Office costs eg postage,</b>				
• Darwin funding				
• other funding				
<b>Travel and subsistence</b>				
• Darwin funding				
• other funding				
<b>Printing</b>				
• Darwin funding				
• other funding				
<b>Conferences, seminars etc</b>				
• Darwin funding				
• other funding				
<b>Capital items/ equipment (please break down)</b>				
• Darwin funding 1 laptop				
• other funding				
<b>Other costs (please specify and break down)</b>				
• Darwin funding 2 MSc (14000), 3 Hons (3000), audit (500), consumables DNA (2500)				
• other funding MSc UJ (5500), DNA consumables (15000)				
<b>Salaries (from previous)</b>				
• Darwin funding				
• other funding				
<b>TOTAL PROJECT COSTS</b>	58550	120937	55293	234780
<b>TOTAL COSTS FUNDED FROM OTHER SOURCES</b>	40514	63098	32871	136483
<b>TOTAL DARWIN COSTS REQUESTED</b>	<b>18036</b>	<b>57839</b>	<b>22422</b>	98297

**25. Please provide a written justification of why alternative funding is not available from within your own organisation or from other sources.**

Together with partner SANBI, Kew's programmes in Africa include the African Plant Initiative partnership (API), which aggregate data on African plants from various regions of the world and support an online database of the resources (i.e. digitalisation of African plant types). Kew is also involved in several conservation programmes in tropical Africa (especially Cameroon) and coordinates the Millenium Seed Bank project in African drylands, with the aim to preserve seeds for 10% of these arid-zone floras, and where SANBI is a key player. Therefore, funding is not available to undertake this post-project from within our organisations.

**26. Will matched funding be provided? Provide details of all other funding sources that will be put towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity. Please include any additional funding the project will lever in to carry out additional work during or beyond the project lifetime. Indicate those funding sources that are confirmed.**

An EU-funded project on 'understanding and conserving the Earth's biodiversity hotspots' (£1.2m) will help with the Hotspots wide analysis as it will fund one PhD student based at Kew (co-supervision by project leader) who will be working on this topic at the plant/pollinator interface. Networking activities will be partly funded by this EU project.

UJ has also purchased (last March) an automated DNA sequencer for the DNA barcoding of the KNP part of the project, worth ca. £60K.

The UJ and South African NRF will put forward some additional funding for the DNA barcoding of the KNP, especially towards supporting one 2-year postdoc (R Lahaye) dedicated to this project. One MSc and one PhD already funded by NRF to UJ will also help with this part of the post-project (£5,500)

Funding for a course at UCT already applied to the Royal Society by T Hedderson (UCT) and VS (Kew) (£5,000 requested, decision next March - UK/South African networks programme). Additional funding will be applied for from UCT at South African NRF for this course.

UCT also has waived its 10% overheads as matched funding (£1100).

SANBI will provide £5,000 of laboratory costs as matched funding (R10,000 general costs plus R50,000 for K. Balele's running costs in the DNA bank)

Kew's core budget will be used for rbcL sequencing (£10K) and travel (Evolution conference for VS and trip from one DNA bank manager for duplicating DNAs; £3,000). Additional funding will be applied for to the Bentham-Moxon fund for complementary travel money if necessary.

**27. Please give details of any further funding resources sought from the host country partner institution(s) or others for this project that are not already detailed above. This will include donations in kind and un-costed support eg accommodation.**

Accommodation, vehicle rental and laboratory bench fees will be subsidised by SANBI.

Accommodation at UJ campus and in the Kruger Park will be subsidised by UJ.

**28. What was the amount of funding for the original Darwin Project?**

	<b>Total Project Costs £</b>
<b>Amount of original Darwin Initiative project funding</b>	116,187
<b>+ Funding/Income from other sources</b>	197,307
<b>= Total original project cost</b>	313,494

**FCO NOTIFICATION**

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise details of the Darwin Post-project and the resultant work in the UK or in the host country.

**CERTIFICATION 2006/7**

On behalf of the trustees (*delete as appropriate*)

I apply for a grant of £18036 in respect of expenditure to be incurred in the financial year ending 31 March 2007 on the activities specified in the Logical Framework.

I certify that, to the best of our knowledge and belief, the statements made by us in this application are true and the information provided is correct. I am aware that this application form will form the basis of the project schedule should this application be successful.

I enclose a copy of the CVs for project principals and letters of support.

<b>Name (block capitals)</b>	DR VINCENT SAVOLAINEN
<b>Position in the organisation</b>	PLANT MOLECULAR SYSTEMTATIST/DEPUTY-HEAD OF MOLECULAR SYSTEMATICS

<b>Signed</b>	<i>SIGNED</i>	<b>Date:</b>	13 January 2006
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Please return this form by e-mail to ECTF at [darwin-applications@ectf-ed.org.uk](mailto:darwin-applications@ectf-ed.org.uk) by **13 January 2006**. Please put the title of the proposed project into the subject line of the e-mail. As much of the supporting documentation as possible should be sent along with the e-mailed application. However, if you are e-mailing supporting documentation separately please include in the subject line an indication of the number of e-mails you are sending (eg whether the e-mail is 1 of 2, 2 of 3 etc). **In addition**, hard copies of all applications and supporting documents should be submitted to the Darwin Applications Management Unit, c/o ECTF, Pentlands Science Park, Bush Loan, Penicuik EH26 0PH **postmarked not later than 13 January 2006**.

**DATA PROTECTION ACT 1998:** Applicants for grant funding must agree to any disclosure or exchange of information supplied on the application form (including the content of a declaration or undertaking) which the Department considers necessary for the administration, evaluation, monitoring and publicising of the Darwin Initiative. Application form data will also be held by contractors dealing with Darwin Initiative monitoring and evaluation. It is the responsibility of applicants to ensure that personal data can be supplied to the Department for the uses described in this paragraph. A completed application form will be taken as an agreement by the applicant and the grant/award recipient also to the following:- putting certain details (ie name, contact details and location of project work) on the Darwin Initiative and Defra websites(details relating to financial awards will not be put on the websites if requested in writing by the grant/award recipient); using personal data for the Darwin Initiative postal circulation list; and sending data to Foreign and Commonwealth Office posts outside the United Kingdom, including posts outside the European Economic Area. Confidential information relating to the project or its results and any personal data may be released on request, including under the Environmental Information Regulations, the code of Practice on Access to Government Information and the Freedom of Information Act 2000.