



Submit by 5 January 2007

DARWIN INITIATIVE APPLICATION FOR GRANT ROUND 15 COMPETITION:STAGE 2

Please read the Guidance Notes before completing this form. Applications will be considered on the basis of information submitted on this form and you should give a full answer to **each** question. Please do not cross-refer to information in separate documents except where invited on this form. The space provided indicates the level of detail required. Please do not reduce the font size below 11pt or alter the paragraph spacing. Keep within word limits.

1. Name and address of organisation (NB: Notification of results will be by post)

Name: BioNET-INTERNATIONAL	
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2. Project title (not exceeding 10 words)

CONSERVATION OF MICROFUNGI: A VOICE FOR UNPROTECTED AND VULNERABLE ORGANISMS

3. Project dates, duration and total Darwin Initiative Grant requested

Proposed start date: 1 May 2007	Duration of project: 3 years	End date: 30 April 2010			
Darwin funding requested	2007/08	2008/09	2009/10	2010/11	Total
	£ 86700	£ 102530	£ 100630	£	£ 289860

Start date: the start date could be delayed as far as 1 August 2007.

4. Define the purpose of the project (extracted from logframe)

<p>To initiate a global movement for biodiversity conservation of microfungi (a huge array of organisms covered by the <i>Convention on Biological Diversity</i> [CBD], but currently with no explicit protection anywhere in the world) by three key actions:</p> <ul style="list-style-type: none"> • establishing three World Conservation Union [IUCN]-compatible Specialist Groups (for [1] non-lichen-forming ascomycetes & conidial fungi, [2] rusts & smuts, and [3] chromistans, chytrids, myxomycetes & zygomycetes), working through them to prepare global conservation plans for fungi covered by each; • in co-operation with the IUCN's Sampled Red List Project and compatible with its red list assessment criteria, preparing and publishing global conservation status assessments for over 800 sample species of microfungi as baseline information for the CBD's 2010 Biodiversity Target; • building capacity for conservation of microfungi and their sustainable use, prioritizing Africa, by training mycologists, enhancing web-based informational resources for mycology and recycling used equipment.

5. Principals in project. Please provide a one page CV for each of these named individuals

Details	Project Leader	Other UK personnel (working more than 50% of their time on project)	Main project partner and co-ordinator in host country/ies
Surname	Minter		Romero
Forename (s)	David William		Andrea Irene
Post held	Principal Scientist		Investigador Independiente CONICET
Institution	BioNET-INTERNATIONAL		Universidad de Buenos Aires
Department			
Telephone			
Fax			
Email			

6. Has your organisation received funding under the Darwin Initiative before? If so, give details

Reference No	Project Leader	Title
162/11/026	D.W. Minter	Recovering Ukraine's Lost Steppe
162/10/001	D.W. Minter	Biodiversity Conservation in Cuba
162/8/011	D.W. Minter	<i>Biodiversity Information in the former Soviet Union</i>
162/6/056	D.W. Minter	<i>Fungi of the Caribbean</i>

7. IF YOU ANSWERED NO TO QUESTION 6 describe briefly the aims, activities and achievements of your organisation. (Large institutions please note that this should describe your unit or department)

Aims (50 words)
Activities (50 words)
Achievements (50 words)

8. Please list the UK/collaborative (where there are partners in addition to the applicant organisation) and host country partners that will be involved, and explain their roles and responsibilities in the project. Describe the extent of their involvement at all stages, including project development. This section should illustrate the capacity of host country partners to be involved in the project. Please provide written evidence of partnerships.

Partner	Details (including roles and responsibilities and capacity to engage with the project):
Dr A.I. Romero Departamento de Micología, Universidad de Buenos Aires, Buenos Aires, Argentina	Previous involvement. Collaboration since 1984; digitized Patagonian discomycete data; link with Latin American Mycological Association [ALM] and existing IUCN fungal specialist group during project development. Role. Specialist Group 1 (conservation of non-lichen-forming ascomycetes & conidial fungi); continued link with ALM (on Organizing Committee for next congress); interface with existing IUCN fungal specialist group (group member); main partner because Specialist Group 1 covers the most organisms.

Partner	Details (including roles and responsibilities and capacity to engage with the project):
Dr I. Rong Plant Protection Institute, Pretoria, South Africa	Previous involvement. Collaboration since 2004; link with African Mycological Association [AMA] during project development. Role. Organizing training of African mycologists & capacity building for African mycology; continued link with AMA (President); internet information about South African fungi.

Partner	Details (including roles and responsibilities and capacity to engage with the project):
Lic. M. Camino Jardín Botánico Nacional, Havana, Cuba	Previous involvement. Collaboration since 1996; Cuban Co-ordinator of Darwin Initiative project Biodiversity Conservation in Cuba ; helped prepare draft chromistan, chytrid, myxomycete & zygomycete conservation websites. Role. Specialist Group 3 (chromistan, chytrid, myxomycete & zygomycete conservation); commissioning and editing assessments by Cuban mycologists.

9a. Have you consulted stakeholders not already mentioned above?

 Yes No

If yes, please give details:

The following mycologists all consulted during proposal preparation (see accompanying letters of support) will also participate. **Dr S. Nanagulyan** (Yerevan, Armenia) [*Previous involvement.* Collaboration since 2002; began digitizing Armenian fungal records. *Role.* Digitizing data; co-ordinating global microfungi conservation plans], **Dr R. Al-Cashgari** (Jeddah, Saudi Arabia) [*Previous involvement.* Collaboration since 2001. *Role.* self-funded Arabian participant; commissioning and editing assessments produced by Arab mycologists; training in north Africa], **Dr K.V. Sankaran** (Kerala, India) [*Previous involvement.* Collaboration since 1994; digitized fungal records as former Darwin Fellow. *Role.* Database editing], **Dr Yu.Ya. Tykhonenko** (Kiev, Ukraine) [*Previous involvement.* Collaboration since 1993; developed [Kiev Seed Bank](#) in Darwin Initiative project [Recovering Ukraine's Lost Steppe](#); helped prepare draft rust & smut conservation websites. *Role.* Specialist Group 2 (rust and smut conservation); commissioning and editing assessments by Ukrainian mycologists]. Also involved: **Dr G. White** (BioNET-INTERNATIONAL) [*Previous involvement.* None. *Role.* Responsibility for Specialist Groups' public relations / advocacy; identification of further and post-project potential donors and preparation of proposals to them].

Proposal preparation included consulting the [International Mycological Association](#) [IMA], the AMA, the ALM, the [European Mycological Association](#) [EMA] and the [Mycological Society of America](#) [MSA]. All

endorsed the proposal or otherwise responded very positively. The [IUCN Fungi Specialist Group](#) and the [European Council for the Conservation of Fungi \[ECCF\]](#) (the conservation wing of the EMA) support the proposal: at its November 2005 workshop *Red List Assessments for Fungi*, the ECCF established a Microfungi Conservation Working Party specifically to provide European interaction with the present proposal. The IUCN was consulted (it invited Dr Minter to lead the [microfungi](#) component of its *Sampled Red List* project). Editorial boards of the four key journals in fungal systematics (*Mycologia*, *Mycotaxon*, *Sydowia* and *Transactions of the British Mycological Society* [now *Mycological Research*]) and of several other mycological journals have kindly agreed to the digitizing and free internet publication of back issues through [Cyberliber](#) and [Libri Fungorum](#), websites involved in this proposal. The team has excellent scientific contacts worldwide, and good governmental contacts in all countries they represent.

Criteria for choosing participants. Mycologists are rare in regions supported by the *Darwin Initiative*. Participant countries are rich in biodiversity, poor in resources AND have active mycologists with a track-record of successful collaboration and with leadership and professional skills appropriate for this multi-disciplinary project: Participants themselves have, or are close to expertise covering all fungal kingdoms and a very wide range of natural and man-made environments in the new and old world tropics, north and south temperate regions and high latitudes (including agricultural, coastal, desert, forest, freshwater, marine, montane, steppe and urban ecosystems). This is vital because microfungi to be assessed come from all major taxonomic groups and habitats. All participants are able teachers and wish to pass mycological skills to students through this project's courses in other "target" African countries rich in biodiversity but poor in resources. The team is already experienced in environmental and conservation planning, running workshops and working with the internet and computerized databases, and the project offers substantial opportunities for professional development [section 19] enhancing these skills through transfer of UK expertise.

9b. Do you intend to consult other stakeholders?

Yes No

If yes, please give details:

Mycologists in the following target African countries know of this proposal and have expressed interest in involvement: Cameroon (Dr D.C. Mossebo), Egypt (Prof. H. Amra), Kenya (Dr J. Jefwa), Libya (Dr W. Salem), Morocco (Dr A. Mohamed), Nigeria (Dr G.J. Osemeobo), Uganda (Dr P. Ipulet). In the event of funding, they will be contacted: their involvement will facilitate regional training in east, north and west Africa. Further African mycologists identified through the AMA and African [LOOPS](#) of BioNET-INTERNATIONAL, and non-African mycologists (particularly from Australasia, central Asia and North America) will be contacted as appropriate. Developed country participating mycologists will be self-funded. Other participating mycologists will be contracted to produce red list assessments and other work. While the present proposal covers only non-lichen-forming microfungi, every effort will be made to work with the *IUCN Lichen Specialist Group*, encouraging joint activity and avoiding duplication of effort.

9c. Have you had any (other) contact with the government not already stated?

Yes No

If yes, please give details:

CBD national focal points in the following target countries have been informed about the proposed project: Botswana, Ethiopia, Ghana, Kenya, Malawi, Nigeria, Sierra Leone, Sudan, Tanzania, Uganda, Zambia.

PROJECT DETAILS

10. Please provide a Concept note (Max 800 words) (repeat from Stage 1, with changes highlighted)

Despite ample evidence of serious decline in many populations, fungi are almost completely unprotected worldwide. Most conservation law covers only animals and plants. Most protected areas lack policies to manage fungi in their care. The need for fungal conservation is rarely vocalized, so most policymakers are unaware of the issue. The few existing resources are directed only to Basidiomycetes, mainly in Europe and Australasia. For other fungi - microfungi - the conservation gap is total. In 1992, the Rio Convention year, Britain led the world in systematic mycology. Since then, our professional experts in microfungi have declined by over 85%, and average age has increased from 42 to 55. The picture is similar in other countries with previously strong mycological traditions. Urgent action is required to pass on expertise before it is gone forever, but countries with potential to develop future mycology lack key resources. This project addresses those issues, delivering global benefits through the following new and catalytic actions.

- Three specialist groups will be established for conservation of microfungi at a global level, to work eventually within the [IUCN Species Survival Commission Specialist Group](#) framework. The groups will prepare global conservation action plans for the organisms they represent and seek to stimulate awareness of threats, including climate change. A prototype website for each group has already been constructed ([non-lichen-forming ascomycetes & conidial fungi](#), [rusts & smuts](#), and [chromistans, chytrids, myxomycetes and zygomycetes](#)). Those "group" websites will make available each action plan, evolving to become a focus for conservation of microfungi, providing information and advice. **Updates** since September 2005: the EMA has established a Microfungi Conservation Working Party; the existing IUCN fungal specialist group has indicated it supports separate representation for microfungi on the IUCN *Species Survival Commission*.
- Through those groups, and in conjunction and compatible with IUCN's *Sampled Red List* project, global [Sampled Red Lists for Microfungi](#) will be produced, to measure progress towards the [CBD's 2010](#)

Biodiversity Target (prototype “red list” websites advertising this have already been established for [non-lichen-forming ascomycetes & conidial fungi](#), [rusts](#), [smuts](#), [chromistans](#), [chytrids](#), [myxomycetes](#) and [zygomycetes](#)). Resulting lists (composition to be finalized, but over 800 species), will be made available on the internet, with keys and full information about each fungus (scientific name, authors, place of publication, synonyms, description, illustrations, distribution maps with links to source data, associated organisms and substrata, status assessments, identification aids and hyperlinks to literature etc.). For examples of earlier similar work led by Dr Minter see the [Plants of Viñales](#) and [Electronic Distribution Maps of Ukrainian Fungi](#) websites. **Updates** since September 2005: the **EMA** ran a pioneering workshop on applying **IUCN** criteria to fungi; Dr Minter has assessed over 50 microfungi species globally using **IUCN** criteria - the first such assessments - publishing findings in the *IMI Description Sheets of Fungi and Bacteria* series.

- Prioritizing Africa, mycologists will be trained through courses, workshops and meetings, and provided with resources to build capacity and ensure survival of skills nearly extinct in Britain, supporting the [African Mycological Association](#) in delivering an infrastructure for mycology within that continent. Informational resources will be strengthened by digitizing and publishing on-line existing African and other literature-based fungal records (“country websites”), and by increasing the range of scientific names, catalogues and rare but key mycological publications available on-line through [Cyberliber](#), the digital library for mycology (begun under an earlier Darwin Initiative project) and [Index Fungorum](#) (also indirectly supported through earlier Darwin Initiative projects). **Updates** since September 2005: actual or potential mycologists in many African countries were located and contacted; responses, all positive, have already been received from **Cameroon**, **Egypt**, **Kenya**, **Libya**, **Morocco**, **Nigeria** and **Uganda**; *Cyberliber* has expanded from 3,000 to over 75,000 scanned pages of key mycological literature freely available on-line; of mycology’s top journals, all four contacted so far welcomed internet publication of back numbers by *Cyberliber*; one important result is that for over 214,000 names in *Index Fungorum* the image of a catalogue reference, original description or recombination can now be viewed on-line.

The need for this project, which is endorsed by the [African](#), [European](#) and Latin American Mycological Associations, was identified jointly by the UK and overseas partners. Dr Minter [representing the **EMA** in this proposal] will lead the project, bear responsibility for scientific quality, edit websites and organize mycologists to produce individual red list assessments. Advocacy for the new groups and training group members in presentational and public-relations skills will be the responsibility of Dr G. White, the UK partner. Other co-ordinators will be responsible as follows: Dr Romero (non-lichen-forming ascomycetes & conidial fungi); Dr Tykhonenko (rusts & smuts, editing of *Cyberliber*); Lic. Camino (chromistans, chytrids, myxomycetes and zygomycetes); Dr Nanagulyan (action plan development); Dr Rong (capacity building, mainly in Africa); Dr Sankaran (digitizing work).

11a. Is this a new initiative or a development of existing work (funded through any source)?

Please give details:

This is a new initiative.

11b. Are you aware of any other individuals/organisations/Darwin Initiative projects carrying out similar work? Yes No

If yes, please give details explaining similarities and differences, and explaining how your work will be additional to this work and what attempts have/will be made to co-operate with and learn lessons from such work for mutual benefits:

The team knows no other proposal for such work with microfungi. The **IUCN Fungi Specialist Group** is preparing a conservation plan (in practice only for macrofungi) and looks to participants of this project to cover microfungi. Dr Anders Dahlberg, the chairman, is also preparing a red list of European macrofungi. Dr Minter is in regular contact to exchange ideas, and participated in his **ECCF** workshop [section 9a]; they plan to prepare guidelines for applying **IUCN** criteria to the fungi jointly with the **IUCN Lichen Specialist Group**. Few websites provide data about occurrence and distribution of fungi in developed countries, notably Dr Jerry Cooper’s well-resourced and magnificent [New Zealand](#) site, and Dr David Farr’s [USA](#) site. Dr Minter is in friendly contact with both. Outside the developed world, little exists beyond distribution map sites established through earlier *Darwin Initiative* projects [section 6]. One major legacy of those projects, over 500,000 records already digitized but at present unavailable on-line or only as distribution maps, will be enhanced when present work makes their full [GBIF](#)-compatible data newly and freely available). Mycology is poorly served by big initiatives to digitize botanical and zoological literature. Dr Minter and Dr Paul Kirk run mycology’s two main websites for digitized mycological literature ([Cyberliber](#) and [Libri Fungorum](#)), and co-operate to avoid duplication of effort by ensuring all material is freely shared.

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

CBD parties agreed to conserve all forms of life. That includes microfungi. The need and priority were thus clearly identified by the parties themselves. For fungi in general and microfungi in particular, poor awareness of their importance coupled with no readily available information, means they are **completely** overlooked by

over 90% of all national biodiversity strategies and environmental plans. This project's Specialist Groups will draw attention to microfungi, advise on their conservation needs, and provide guidelines to facilitate inclusion in conservation planning. In particular, greatly improved internet resources created, particularly for target African countries [section 16], will enable policy makers to include microfungi in national biodiversity strategies and explore fair and equitable sharing of potential benefits for the first time.

13a. How will the project assist the host country in its implementation of the Convention on Biological Diversity? Please rank the relevance of the project to the relevant article(s) of the CBD thematic programmes and/or cross-cutting themes by indicating percentages.

Articles	% Relevance	Themes	% Relevance
5. Co-operation		Access and Benefit Sharing	
6. General measures for Conservation and Sustainable Use		Agricultural Biodiversity	
7. Identification and Monitoring	20%	Alien Species	
8. <i>In-situ</i> Conservation		Biodiversity and Tourism	
8h. Alien Species		Biosafety	
8j. Traditional Knowledge		Climate Change and Biodiversity	
9. <i>Ex-situ</i> Conservation		Economics, Trade and Incentives	
10. Sustainable use of components of Biological Diversity		Ecosystems approach	
11. Incentive measures		Forest Biodiversity	
12. Research and Training	20%	Global Strategy for Plant Conservation	
13. Public education and awareness	10%	Global Taxonomy Initiative	
14. Impact assessment and minimizing adverse impacts		Impact Assessment, Liability and Redress	
15. Access to genetic resources		Indicators	
16. Access to and transfer of technology		Inland Waters Biodiversity	
17. Exchange of information	20%	Marine and Coastal Biodiversity	
18. Technical and scientific co-operation	10%	Mountain Biodiversity	
19. Handling of biotechnology and distribution of its benefits		Protected Areas	
20. Financial resources		Public Education and Awareness	
21. Financial mechanism		Sustainable Use and Biodiversity	
22. Relationship with other international conventions		Traditional Knowledge, Innovations and Practices	
23. Conference of the Parties			
24. Secretariat			
25. Subsidiary Body on Scientific, Technical and Technological advice	20%		
26. Reports			

Note. Only main relevances to **CBD** articles are indicated and only very approximately. Being global in scope and dealing with whole kingdoms of neglected organisms, this project assists ALL parties to the **CBD**, establishes many totally new *Darwin Initiative*–**CBD** links, and has relevance to most **CBD** articles and almost all **CBD** themes. **The first key action** establishes Specialist Groups which assist ALL parties by providing a global source of information and advice, hitherto entirely absent, relating to *in-situ* and *ex-situ* conservation of microfungi and to impact assessments for these organisms. Group websites will also promote public education and awareness about microfungi worldwide. Conservation plans generated will address many **CBD** themes from the completely novel perspective of microfungi. **The second key action** addresses the **CBD 2010 Biodiversity Target** (not listed above). Although microfungi are included in this target, there is still no baseline information against which to assess their rates of biodiversity loss. By preparing global conservation status assessments of sample species, using **IUCN** criteria in co-operation with its *Sampled Red List* project, the present project will provide that base line. By example, it will also stimulate production of regional and national assessments. The project therefore assists ALL parties in implementation of the **CBD 2010 Biodiversity Target**. **The third key action** builds capacity in target African countries by training new mycologists. That training together with continued recycling of used equipment donated for biodiversity work (previous *Darwin Initiative* projects [section 6] have delivered several tons of equipment and literature, including microscopes, analogue and digital cameras, books, journals, about 300 computers and one electron microscope to partners) will provide access to and transfer of technology. Country websites established through this action will make available fungal database information, and will enhance identification and monitoring all globally, thereby benefiting ALL parties.

13b. Is any liaison proposed with the CBD national focal point in the host country? Yes No
If yes, please give details:

If the proposal is funded, communications with the **CBD** national focal points cited in section 9c above will be followed up, and further focal points will be contacted, particularly in Africa and countries represented by project participants.

14. If relevant, please explain how the work will contribute to sustainable livelihoods in the host country. (Max 200 words)

In this project, 40 target country young scientists will be trained to identify and advise on mycology. Country websites will make freely available an enormous existing database of hitherto inaccessible microfungi records [section 16]. Many records (over 80% in some countries) relate to agents of crop, human and animal diseases; others to biological control agents of insects, invasive plants and other pests - a valuable new resource for agronomists, doctors and vets in impoverished countries; yet others to fungi in natural ecosystems, enabling them to be included for the first time when assessing the economic value of those ecosystems. Climate change affects geographical distributions of not only animals and plants, but also fungi: for example, baseline information about current fungal disease distribution will be essential in ensuring successful relocation of crops to new areas. This project will strongly endeavour to make information in country websites as accessible as possible to users for whom English is not a first language.

15. What will be the impact of the work, and how will this be achieved? Please include details of how the results of the project will be disseminated and put into effect to achieve this impact. (max 200 words)

New and innovative work conserving microfungi will be started. Three new Specialist Groups will exist, with group websites providing global conservation plans, and advice and help for **CBD** national focal points to include fungi in national plans. Baseline conservation status assessments will exist for microfungi, against which rates of biodiversity decline can be measured for the *2010* and similar subsequent **CBD** objectives, and will be freely available on the red list websites. Country websites will provide information about fungi of participant and target countries [section 16]. Capacity to identify and conserve microfungi will be enhanced by many thousands of pages from key literature, particularly rare publications and works specializing in African fungi, digitized and freely available on-line. At least 40 young scientists, most or all African, will be trained through regional courses in systematic mycology. Donated used equipment will be delivered for biodiversity work. Scientific material will be disseminated through websites, CDs, paper publications, conferences, courses and workshops. In addition, as with existing **IUCN** specialist groups, policy and issues relating to conservation of microfungi will be brought to governmental attention, with public debate through radio, television and the press.

16. How will the work leave a lasting legacy in the host country or region? (max 200 words)

As well as global legacies (Specialist Groups, conservation plans, a **CBD 2010** baseline, free internet access to mycological literature etc.), country websites will exist for participant and target countries, similar to but more sophisticated than the existing website [Electronic Distribution Maps of Ukrainian Fungi](#) and the checklist [Fungi of Ukraine](#) (produced through an earlier *Darwin Initiative* project) combined. They will use existing databases curated by Dr Minter to provide information about occurrence and geographical distribution of microfungi and associated organisms, with illustrations, maps, keys and links to taxonomic and bibliographic websites and to data underpinning each record. Over 900,000 [numbers approximate] edited records (500,000 from earlier *Darwin Initiative* projects [section 11b] plus 400,000 others) world wide, plus over 100,000 (all African, keyboarded through this project) will newly become available on-line in an integrated searchable format (test results for the database's prototype internet interface show it is powerful, robust, reliable and fast). These websites will catalyse long-term work in mycology. The track-record of this team guarantees their collaborative work on mycology will continue after the project ends, wherever possible including the trained young scientists, who will also have a strengthened **AMA** within which to develop African mycology.

17. Please give details of a clear exit strategy and state what steps have been taken to identify and address potential problems in achieving impact and legacy. For example, what steps have been taken to ensure the benefits of the project will continue despite any staff changes in these organisations? (max 200 words)

Specialist Groups will become part of **IUCN** perhaps catalysing an **IUCN** Mycology Desk (the preferred option), or autonomous bodies under tutelage of the **IMA**, **ALM**, **AMA**, **EMA** and **MSA**, each promoting its own conservation plan and maintaining its own conservation status assessments. Further use of assessments will depend on **CBD** parties respecting and following up the *2010* objective. A strengthened **AMA** will be responsible for further developing African mycology. Participants and trained students will have enhanced capacity for future work. Since 1993, mycologists representing main contributors have collectively curated and managed the databases used in this project. That arrangement (already used by earlier *Darwin Initiative* project websites and [Index Fungorum](#), with wind-up safeguards similar to those of [Index Fungorum](#)) is expected to continue. After the project, websites will be hosted free of charge and maintained with the databases on the [Cybertruffle](#) server as an open resource, and used in bids for future funding. A system to permit website and database corrections and updates from participants will be provided. Maintenance of country websites on individual servers in each participating / target country will be implemented whenever

credible and adequate support for mycology in a given country arises. The number and variety of participants protect this project against large impacts resulting from staff changes.

18. How will the project be advertised as a Darwin project and in what ways will the Darwin name and logo be used? (max 100 words)

The *Darwin Initiative* name / logo will be used on all websites, publications, training courses and workshops generated by this project. Equipment delivered through this project will bear the *Darwin Initiative* name and logo. *Darwin Initiative* support will also be acknowledged in conference presentations and in contacts with radio, television and the press. The current work is independent of, separate and easily distinguished from the larger *IUCN Sampled Red List* project with which it is associated.

19. If your project includes training and development, please indicate a) who the trainees will be, b) the criteria for selection, c) what the level and content of training will be, d) how many people will be involved, e) which countries will they be from, f) how will you measure the effectiveness of the training, g) will those trained then be able to train others and h) how will trainee outcomes be monitored after the end of the training? (max 300 words)

This project includes considerable training for target country scientists, and professional development for other participants [section 9a]. Senior mycologists in Britain and elsewhere will transfer skills to 40 able young scientists, through regional taxonomy and identification courses for taxa of each Specialist Group.

- a) Postgraduates.
- b) Selection will be from nominations by the **AMA**, African LOOPs of BioNET-INTERNATIONAL, and responses to course advertisements. Able and interested candidates with initiative and potential, employed where new skills are useful will be preferred.
- c) Postgraduate level. Taxonomy courses will cover: techniques for finding, collecting and examining fungi, including use of stereo and compound microscopes and slide preparation; principals of fungal taxonomy; identification of collections to ordinal level for all fungi, and to family, genus and below for key groups; use of dichotomous and synoptic keys; use of internet resources; description of material; handling mycological data.
- d) At least 40 will be trained.
- e) Most trainees are expected from target African countries with at least some mycological activity (eg Botswana, Cameroon, Egypt, Ghana, Kenya, Libya, Mauritius, Morocco, Nigeria, South Africa, Uganda and Zimbabwe).
- f) There will be an examination at the end of each course. Outstanding students may attend other courses or receive further teaching, eg through study visits.
- g) A final course will give promising students experience, under supervision, of training others, with evaluation and feedback.
- h) The **AMA** will monitor students after training, reporting to the project.

Professional development for named project participants, other contracted or self-funded mycologists and promising trainees will include workshops on making and editing *IUCN* compatible conservation assessments of microfungi, preparing national plans for fungal conservation, and on databasing and editorial standards. Suitable individuals will also gain experience of management of SQL-compatible databases and use of HTML and PERL programming languages for web design and displaying database query results.

LOGICAL FRAMEWORK

20. Please enter the details of your project onto the matrix using the note at Annex C of the Guidance Note. This should not have substantially changed from the Logical Framework submitted with your Stage 1 application. Please highlight any changes.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal: 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"> • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of benefits arising out of the utilisation of genetic resources 			
<p>Purpose To initiate a global conservation movement for endangered microfungi.</p>	<p>Three specialist conservation groups exist, with conservation action plans prepared for fungi of each group; evidence of activity advocating and assisting in conservation of microfungi.</p> <p>Sampled red lists of microfungi exist, prepared in collaboration and compatible with the IUCN Sampled Red List project, providing baseline for CBD 2010 objective.</p> <p>Mycologists trained in conservation techniques; equipment delivered; country and literature websites provide mycological information relevant to conservation.</p>	<p>Group websites fully functional, with plans and visible history of activity by each group. Groups listed by IUCN Species Survival Commission or recognized by mycological societies; evidence of advocacy in media and internet.</p> <p>Red list websites with Sampled red lists as described in proposal, compatible with the IUCN Sampled Red List project.</p> <p>Reports of workshops, courses and meetings; names of African (and other) trained mycologists; photographs of delivered equipment; country and literature websites functional.</p>	<p>IUCN Species Survival Commission / mycological societies remain willing to welcome / recognize new specialist groups for microfungi.</p> <p>Enough expert mycologists still exist to produce red lists; there is access to sufficient information; uniform quality standards can be enforced.</p> <p>Suitable African (and other) trainee mycologists can be found; they remain in the science after training; donated equipment can be sourced.</p>
<p>Outputs Three specialist conservation groups (for [1] non-lichen-forming ascomycetes & conidial fungi, [2] rusts & smuts, and [3] chromistans, chytrids, myxomycetes & zygomycetes), with conservation action plans prepared by each group for their fungi. Sampled red lists of microfungi, prepared in collaboration and compatible with the IUCN Sampled Red List project, providing baseline for CBD 2010 objective. Enhanced capacity for microfungal conserva-</p>	<p>Group websites fully functional, with visible history of activity by each group. Groups recognized by IUCN or mycological societies. Action plans for each group available on internet. Evidence of work begun to implement action plans.</p> <p>Red list websites with sampled red lists as described in proposal, compatible with the IUCN Sampled Red List project.</p> <p>Reports of training through workshops,</p>	<p>View group websites; view websites of IUCN / mycological societies. View action plans.</p> <p>View websites; check compatibility with IUCN criteria, and value for the CBD's 2010 Biodiversity Target.</p> <p>View assessments of trained mycologists</p>	<p>Specialist mycologists willing to form groups can be found. IUCN Species Survival Commission / mycological societies remain willing to welcome / recognize new specialist groups for microfungi.</p> <p>Expert mycologists exist to produce lists; access to sufficient information possible; quality standards can be enforced.</p> <p>Suitable African (and other) trainee mycologists can be found;</p>

<p>tion, prioritizing Africa, by training mycologists, delivering equipment and enhancing web-based informational resources.</p>	<p>courses and meetings; names of mycologists so trained; equipment delivered; country websites exist for fungi.</p>	<p>and lists of delivered equipment; read reports of workshops, courses and meetings; assess country websites for fungi.</p>	<p>they remain in the science after training; donated equipment can be sourced.</p>
<p>Activities</p> <p>Form each expert group; debate activities; formalize websites; accumulate information and ideas for action plans; produce plans; communicate aims through media.</p> <p>Establish list of red list sample species; prepare standards guide; commission suitable mycologists to work on each species; edit resulting work and publish on internet.</p> <p>Courses, workshops, meetings; sourcing resources; database & internet work.</p>	<p>Activity milestones (summary of project implementation timetable)</p> <p>Jul. 2007: trawls for group members. Sep. 2007: members named on websites. Autumn 2007: publicise websites; debate activities. Mar. 2008: main activities agreed; action plans format established; work communicating aims through media starts. Mar. 2009: first drafts. Nov. 2009: second drafts. Apr. 2010: plans published. Sep. 2007 - Apr. 2010: presentation of groups and their work at international conservation meetings and scientific congresses.</p> <p>Aug. 2007: list of sample species established; standards guide prepared, mycologists contracted. Sep. 2007: first red list workshops to prepare mycologists (Kiev, Havana). Oct. 2007: mycologists begin work on species. By Jul. 2008: 350 sample species assessed; locations of second phase red list workshops established. Sep. 2008: first editorial workshops (Kiev, Havana); second phase red list workshops. By Jul. 2009: 700 sample species assessed. Sep. 2009: second editorial workshops. By Apr. 2010: over 800 sample species assessed and all edited and published on internet.</p> <p>May 2007: trawl for first training course candidates. Aug. 2007: first training course candidates identified and selected. Nov. 2007: first training course held. Jan. 2008: trawl for second training course candidates. Mar. 2008: second training course candidates identified and selected. Jul. 2008: second training course held. Sep. 2008: trawl for third training course candidates. Nov. 2008: third training course candidates identified and selected. Jan. 2009: third training course held. Jun. 2009: fourth training course candidates selected from most able students of earlier courses. Oct. 2009: fourth training course held. May 2007: data capture of new records for African country websites started. Sep. 2007: country websites for Cuba and Ukraine established with working database interface. Jul. 2008: similar country websites established for Argentina, Armenia, India, Saudi Arabia and South Africa; target African countries for further country websites selected (probably Egypt, Ghana, Kenya, Libya, Malawi, Nigeria, Sierra Leone, Sudan, Tanzania, Uganda and Zambia). Nov. 2009: similar country websites established for selected target African countries. Apr. 2010: at least 100,000 African records keyboarded, edited and assimilated into databases and country websites. Cyberliber website providing free access to scanned images of over 200,000 pages of mycological literature (125,000 more than in January 2007).</p>	<p>Assumptions</p> <p>As above; also viruses don't destroy data; internet remains a valid, effective and independent medium for dissemination of data; international air travel not seriously affected by terrorism; political problems don't prevent collaboration.</p>	

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

Project implementation timetable		
Date	Financial year	Key milestones
31 May 31 July 31 August 30 September 31 October 30 November 31 January 31 March	Apr. 2007-Mar. 2008	<p>Trawls for first training course candidates; keyboarding of African records for country websites started.</p> <p>Trawls for specialist group members.</p> <p>List of red list sample species established; red list standards guide prepared and made available on internet; mycologists with appropriate expertise for making assessments identified and contracted to produce assessments. First training course candidates identified and selected; donors of equipment identified and approached.</p> <p>Specialist Groups established; specialist group members named on group websites; group websites publicised. First red list workshops to prepare mycologists making assessments (Kiev, Havana). Country websites for Cuba and Ukraine established with working database interface.</p> <p>Contracted mycologists begin work on species red list assessments.</p> <p>Specialist group activities debated. First training course held.</p> <p>Trawl for second training course candidates.</p> <p>Main activities of specialist groups agreed; action plans format established and work preparing plan drafts begun; work communicating aims through media started. 100 red list species assessed. Second training course candidates identified and selected; first tranche of donated equipment acquired and delivered.</p>
31 July 30 September 30 November 31 January 31 March	Apr. 2008-Mar. 2009	<p>300 sample species assessed; locations of second phase red list workshops decided. Second training course held. Country websites established for Argentina, Armenia, India, Saudi Arabia and South Africa with working database interface; target African countries for further country websites selected (probably Egypt, Ghana, Kenya, Libya, Malawi, Nigeria, Sierra Leone, Sudan, Tanzania, Uganda and Zambia).</p> <p>First assessment editorial workshops (Kiev, Havana); second phase red list workshops. Trawl for third training course candidates.</p> <p>Third training course candidates identified and selected.</p> <p>Third training course held.</p> <p>First drafts of global conservation plans completed. 350 red list species assessments edited and on internet. Second tranche of donated equipment acquired and delivered.</p>
30 June 31 July 30 September 31 October 30 November 31 March	Apr. 2009-Mar. 2010	<p>Fourth training course candidates selected from most able students of earlier courses.</p> <p>700 sample species assessed.</p> <p>Second drafts of global conservation plans completed. Second assessment editorial workshops.</p> <p>Fourth training course held.</p> <p>Country websites established for selected target African countries; third tranche of donated equipment acquired and delivered.</p> <p>3 Specialist Groups fully functioning, with group websites.</p>
30 April	Apr. 2010-Mar. 2011	<p>Global conservation plans published on internet and in paper form. Final <i>Darwin Initiative</i> report written and submitted.</p> <p>800 assessments edited and on internet. 100,000 African records keyboarded, edited and assimilated into databases and country websites; 125,000 more scanned images of pages of mycological literature available through Cyberliber.</p> <p>Also: Sep. 2007 - Apr. 2010: presentation of groups and their work at various international conservation meetings and scientific congresses.</p>

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

PROJECT OUTPUTS		
Year/Month	Standard output number (see standard output list)	Description (include numbers of people involved, publications produced, days/weeks etc.)
April 2010 [detailed breakdown on request]	4C; 4D	14 postgraduates each year; 4 week-long training courses
	6A; 6B	8 workshops (each 4 days long, 2 in year 1, 4 in year 2, 2 in year three); 6 working weeks
	7	1 (conservation assessment guidance notes, first year) [existing teaching materials will be used for fungal taxonomy courses]
	8	UK partner 8 weeks each year in host countries
	9	7 conservation plans, for ascomycetes, rusts, smuts, chromistans, chytrids, myxomycetes and zygomycetes (global, not one-country). 800 individual species global red list assessments
	10	extensive field guide style information for microfungi, available on-line, possibly also on CD in a format similar to the Plants of Viñales website
	11B	7 (this team increasingly publishes on the internet, but the project will generate at least seven paper publications)
	12B	3 existing databases (for nomenclature & taxonomy, observations & collections, and literature) shared as an international resource enhanced and freely available to all for interrogation on-line (team already has necessary skills); original national data sets freely available for participant and target countries; enormous shared scanned literature resource on-line for all
	14B	project work will be presented at 2 global and 5 continental level mycological congresses
	15; 16	press releases and electronic newsletters expected; numbers unpredictable
	17A	3 international Specialist Groups established to conserve microfungi
	20	£ (most budgeted equipment is for participant and target countries)
	23	£: access to CABI databases (£) [BioNET-INTERNATIONAL shares Egham site with CABI, and they liaise closely]; internet server space and related support (£); donated salaries / time of self-funded participants (£); donated equipment (£); records keyboarded through <i>Global Biodiversity Information Facility</i> DIGIT project (= £). But nb not included: further separately funded Middle East component (Saudi Riyals result of application awaited); donated salaries from self-funded scientists not yet identified; value of legacy equipment.

PROJECT BASED MONITORING AND EVALUATION

23. 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 the monitoring and evaluation.

Specialist Groups (first logical framework indicator). The Specialist Group leaders (Dr Romero, Dr Tykhonenko and Lic. Camino) and Dr White (advocacy / public relations), all senior scientists with much experience of project management, will themselves monitor and evaluate the groups, reporting regularly to Dr Minter. He will review their reports at least annually in consultation with the *IUCN Species Survival Commission* secretariat, Dr A. Dahlberg, chairman of the existing *IUCN Fungi Specialist Group* [section 11b], Dr C. Scheidegger, chairman of the *IUCN Lichen Specialist Group* [section 9b], Mr A. Bohlin, *ECCF* Chairman, and Ms S. Evans [Conservation Officer of the *British Mycological Society*], all independent and external. Conservation plan drafts will be reviewed collectively by Dr Minter and Specialist Group leaders: the present project draws on considerable Cuban experience producing a national fungal conservation plan

and [management plans for 25 Cuban protected areas](#) through earlier *Darwin Initiative* projects [section 6], and collaborative experience in Ukraine producing a **DEFRA Environmental Plan for Balaclava**, all with positive external assessment. The plans will be subject to scrutiny and review by the same external panel.

Red list assessments (second logical framework indicator). Assessments will be edited by senior participants with editorial workshops to ensure consistency. Quality of assessments will be monitored and evaluated by Dr Minter for compatibility with **IUCN** criteria and the guidelines for applying them to fungi [section 11b]. Independent mycologists with experience of conservation will be asked to peer review a sample of about 10% of the assessments.

Capacity building (third logical framework indicator). All team members are experienced teachers, so course and workshop quality is not expected to be a problem. Student numbers, course lengths and quality of student work will be reported. Their scientific activities will be monitored by the **AMA** after the end of the project. Detailed database quality standards already exist and will be applied to the internet-accessible database and upgraded where appropriate. Most team members have already contributed large amounts of information to these resources, so already have proven ability and experience. Numbers visiting websites will be logged.

24. FINANCIAL ASPECTS

Please state costs by financial year (April to March). Use current prices – and include anticipated inflation, as appropriate up to 3% pre annum. NB: The Darwin Initiative will not be able to agree increases in grants to cover inflation on UK costs once grants are awarded.

Please Show Darwin funded items separately from those funded from other sources.

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

	2007/08 %	2008/09 %	2009/10 %	2010/11 %
UK project team member and role				
Minter [Project Leader, computing, editor, training]	30%	40%	40%	
White [public relations / advocacy]	10%	10%	10%	
Host country/ies project team members and role				
Al-Cashgari [editor]	25%	25%	25%	
Camino [Specialist Group 3, editor]	50%	50%	50%	
Nanagulyan [conservation plan document]	25%	25%	25%	
Romero [Specialist Group 1]	25%	25%	25%	
Rong [organizing training in Africa]	20%	20%	20%	
Sankaran [database editor]	30%	30%	30%	
Tykhonenko [Specialist Group 2, editor]	40%	40%	40%	

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	2007/08		2008/09		2009/10		2010/11	
	Darwin	Other	Darwin	Other	Darwin	Other	Darwin	Other
Minter								
White								
Al-Cashgari								
Camino								
Nanagulyan								
Romero								
Rong								
Sankaran								
Tykhonenko								
Commissioned work [digitizing pages of key mycological publications and published biological records (prioritizing African fungi) at least 225,000 items @ ca 15p), preparing assessments of at least 800 species @ ca £40 per assessment, etc.]								
TOTAL COST OF SALARIES								

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

	2007/08	2008/09	2009/10	2010/11	TOTAL
Rents, rates, heating, cleaning, overheads					
• Darwin funding					
• Other funding					
Office costs eg postage, telephone, stationary					
• Darwin funding					
• Other funding					
Travel and subsistence					
• Darwin funding					
• Other					
Printing					
• Darwin funding					
• Other					
Conferences, seminars etc.					
• Darwin funding					
• Other funding					
Capital items/equipment (please break down)					
• Darwin funding [2nd-hand laptops, scanners, digital cameras, new server for project websites]					
• Other funding [donated computers, scanners, cameras, microscopes and other equipment (estimate)]					
Other costs (including Audit costs to a maximum of £500) (Please specify and break down)					
• Darwin funding Audit costs Transport of donated equipment and resources Honoraria for external reviewers Element to cover UK inflation					
• Other funding CABI databases & library (estimate) internet server space and related support (estimate)					
Salaries (from previous table)					
• Darwin funding					
• Other funding					
TOTAL PROJECT COSTS					
TOTAL COSTS FUNDED FROM OTHER SOURCES					
TOTAL DARWIN COSTS					

25. How is your organisation currently funded? (max 100 words)

BioNET-INTERNATIONAL is a not-for-profit inter-governmental organization owned by the governments establishing it. It operates on a not-for-profit and fee-for-service basis.

26. Provide details of all confirmed funding sources identified in Question 24 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 unconfirmed funding the project will attract to carry out additional work during or beyond the project lifetime. Indicate those funding sources which are confirmed.

Confirmed:

- £ (estimate): Dr Al-Cashgari is participating on a self-funded basis, contributing 25% of her time.
- £ (estimate): Extensive access by this project to the enormous CABI abstracts databases and mycological library is critical for the red list assessments and preparation of global conservation plans.
- £ (estimate): providing internet server space and related support. Many hyperlinks in the present proposal connect to this server, which has hosted websites for *Darwin Initiative* and other projects for several years.

Unconfirmed:

- £ (estimate): if funded, this project will continue to solicit freely donated used equipment, particularly computers, microscopes and cameras, and other appropriate resources - an activity successfully followed for over ten years. The need is clear, donations are frequent: association with the *Darwin Initiative* name and modest financial support for packaging overcome problems of transport and delivery.

27. Please give details of any further funding resources (confirmed or unconfirmed) sought from the host country partner (s) or others for this project that are not already detailed in Questions 24 and 26. This will include donations in kind or un-costed support eg accommodation. (max 50 words)

Financial resources:

- US) contributed by **GBIF** towards keyboarding 400,000 records in the *CABI Bioscience* reference collection. Bar some editing, that work is complete, adding substantially to the around 500,000 other computerized records, already keyboarded through earlier *Darwin Initiative* and other projects.
- Saudi Riyals requested by Dr R. Al-Cashgari in a proposal to a Saudi Arabian donor for a Middle East component to this work. Result of application awaited.

Funding in kind:

Legacy equipment from 12 years of earlier projects ([Darwin Initiative](#), [Royal Society](#), [British Council](#), [DEFRA](#), [DFID](#), [FCO Environment Fund](#), [Royal Geographical Society](#)) will be freely available for this work. Every effort will be made to minimize travel and subsistence costs by providing and accepting accommodation and transport as donations in kind wherever possible. The added value from this might be between £ and £ per year.

FCO NOTIFICATIONS

Please check the box below if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise the project's success in the Darwin competition in the host country.

Please indicate below whether you have contacted the local UK embassy or High Commission to discuss security issues (see Guidance Notes); and attach any advice you have received from them.

Yes

Yes, advice attached

No

CERTIFICATION 2007/08

On behalf of the trustees/company (*delete as appropriate*) BioNET-INTERNATIONAL

I apply for a grant of £86,700 in respect of expenditure to be incurred in the financial year ending 31 March 2008 on the activities specified in questions 20 and 21.

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 [WHERE NECESSARY] a copy of the organisation's most recent audited accounts and annual report, CVs for project principals and letters of support.

Name (block capitals)	David William Minter
Position in the organisation	Principal Scientist

Signed

Date:

4 January 2007

Please return this form in Word format by e-mail to ECTF at darwin-applications@ectf-ed.org.uk by **5 January 2007**. Please put the title and application number 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 5 January 2007.

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.