



12-026

Defra Ref: 138

DEFRA

Department for
Environment,
Food & Rural Affairs

DARWIN INITIATIVE

APPLICATION FOR GRANT FOR ROUND 11 COMPETITION: STAGE 2

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. Please do not cross-refer to information in separate documents except where invited on the form. The space provided indicates the level of detail required but you may provide additional information on a separate A4 sheet if necessary. Do not reduce the font size below 10pt or the paragraph spacing.

Submit by 13 January 2003

1. Name and address of organisation

CABI Bioscience (an institute of CAB International) [Redacted]

2. Project title (not exceeding 10 words)

Towards sustainable management of alien invasive weeds in southern China

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

Details	Project leader	Other UK personnel (if working more than 50% of their time on project)	Main project partner or co-ordinator in host country
Surname	Ellison		Jianqing (co-ordinator)
Forename(s)	Carol Ann		Ding
Post held	Senior Project Scientist and Business Development Officer		Associate Research Professor and Research Leader
Institution (if different to above)			Chinese Academy of Agricultural Sciences (CAAS), Beijing, China
Department	Crop and Pest Management, Ascot Centre		Institute of Biological Control
Telephone	[Redacted]		[Redacted]
Fax	[Redacted]		[Redacted]
Email	[Redacted]		[Redacted]

4. Describe briefly the aims, activities and achievements of your organisation. (Large institutions please note that this should describe your unit or department)

Aims
CABI Bioscience is dedicated to improving human welfare worldwide through the dissemination, application and generation of scientific knowledge in support of sustainable development, with emphasis on agriculture, forestry, human health and the management of natural resources, and with particular attention to the needs of developing countries.

Activities
CABI Bioscience is the scientific research and an information arm of CAB International, with concerns focused on:

- Research: in support of biodiversity, crop and environmental protection.
- Capacity building and training.
- Information support: compendia, reference books, and identification services.

Achievements

Within CABI Bioscience (incorporating the International Institute of Biological Control), there is a long history of classical biological control of weeds, insect and diseases, dating back to 1929. Numerous biological control agents have been selected, screened and released throughout the world over this period, on behalf of other countries. For weeds alone, 120 releases of host specific natural enemies have been made, targeting over 27 weed species, with many notable successes. Our involvement with the new and highly successful area of invasive alien weed (IAW) control using weed pathogens, dates back to the early 1980's. Since this time, 6 agents have been released, after thorough screening in our quarantine facility in the UK, and all have become established in the field. The most spectacular success is the suppression of rubbervine weed in Australia, using a rust fungus originally from Madagascar. This rust has made massive savings for the Australian ranchers in reduced weed control and cattle mustering costs, and natural riverine habitats have been protected from destruction. The rust will continue to have this impact in perpetuity.

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

Fungal herbarium database (Ukraine; round 1); Darwin Fellows programme (various; round 1); microbial diversity and culture collections (Indonesia, round 2); effects of logging on invertebrates (Guyana, round 3); conservation of rare plants and their associated fungi (Kenya, round 5); insect biodiversity capacity building (Guyana; round 6); biodiversity management around a Ramsar site (Turks & Caicos Islands, round 7); Biodiversity and Colombian coffee farmers (Colombia, round 10); Recovering Ukraine's lost steppe (Ukraine, round 10).

6. Please list the overseas partners that will be involved in the project and explain their role and responsibilities in the project. The extent of their involvement at all stages in the project should be detailed, including in project development. Please provide written evidence of this partnership.

Institute of Biological Control (IBC), Chinese Academy of Agricultural Sciences (CAAS), Beijing People's Republic of China: Dr. Ding Jianqing is the over-all project co-ordinator and will oversee the awareness campaign aimed at policy makers in Beijing. Through CAAS, IBC is responsible for obtaining the import permit from China Import and Export Inspection Bureau for the introduction of the rust into China. Quarantine facilities will be provided to undertake additional host specificity testing of the rust (by Ms. Chen Liqin), prior to release in Guangdong. CAAS has had a long-term collaborative links with CABI, and has been involved from the inception of this project proposal. A letter of support is provided, in addition to a copy of the MoU between CABI and CAAS.

Guangdong Entomological Institute (GEI), Xingang West Road 105, Guangzhou 510260, People's Republic of China: Prof. Li Liying is the local coordinator for the rust implementation programme and will oversee the public awareness campaign. GEI will provide research facilities and field sites. Prof. Han Shichou will undertake the monitoring of rust impact using permanent sample plots. Li Liying has been in long-term contact with CABI regarding this weed, and has participated in the development of the proposal from its inception. A letter of support is provided.

7. What steps have been taken to (a) engage at all appropriate levels within the host country partner organisations to ensure full support for the project and its outcomes; and (b) ensure the benefits of the project continue despite staff changes in these organisations?

- (a) The attached letters of support from the host country partners and the MoU provide clear evidence that all the partner organisations are in full support of the project and its outcomes. On a recent visit to CABI, senior CAAS management personnel were made aware of, and fully supported this Darwin Initiative, since they felt it was an important opportunity to address a specific and serious invasive alien weed problem in China.
- (b) The Chinese Government is showing significant concerns about the impact of IAS both on biodiversity and agroecosystems, and have set up a number of working groups to address these issues and the role of the CBD. Their support for biological control of IAS is clear from the literature and the information given in (a) backs this. The concerns of their scientists lie in the lack of a framework within the country for the assessment, prevention and control of IAS. CAAS, China and CABI Bioscience are planning a dual-funded workshop for 2003 entitled; "Prevention and Management of Invasive Alien Species in China: Strengthening Capacity for Action", driven by senior management within CAAS. The planned workshop illustrates their commitment to continuing with implementation programmes such as this one.

Resources have been allocated from this Darwin Initiative to ensure that new project proposals are in place to apply for additional funded projects, after the completion of the project.

8. 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 not already provided.

Through the Chinese project co-ordinator, Ding Jianqing, this project will have a direct link to national focal point of the CBD in China, the State Environment Protection Agency (SEPA), which is in charge of implementing the CBD. Since 2001, Ding has been an invited expert for the Biodiversity Working Group of the China Council for International Cooperation on Environment and Development (CCICED). CCICED has its secretariat in SEPA, under which, the Biodiversity Working Group is playing an important role in the implementation of CBD in China.

PROJECT DETAILS

9. Define the purpose (main objective) of the project in line with the logical framework.

The purpose of this project is to develop the capability of exploiting pathogens for the sustainable management of invasive alien weeds in China. The project will specifically develop and apply the research already undertaken under a DFID-funded NRI-administered project for the classical biological control of *Mikania micrantha* (mile-a-minute weed) in India, using the highly host specific, neotropical rust fungus *Puccinia spegazzinii*. Training activities and hands-on experience received during the project will empower Chinese scientists with the skills necessary to develop new collaborative proposals. The objective is to develop these proposals during the course of the programme, with support from CABI Bioscience personnel, targeting other invasive weeds that are seriously affecting the biodiversity in native environments in China.

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

This is a development of existing work in Asia (see 9).

11. How will the project assist the host country in its implementation of the Convention on Biological Diversity? Please make reference to the relevant article(s) of the CBD, thematic programmes and/or cross-cutting themes. 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.

The project will help China in its implementation of the CBD through:

- **Development of a national strategy:** specifically, through the development of a classical biological control capability for the management of alien invasive plant species, using fungal natural enemies (Article 5, 6, 21).
- **In-situ conservation:** by helping to preserve conservation areas from invasion by alien weeds (Article 8).
- **Sustainable use:** in theory, and in practice (depending on the pest-natural enemy association), classical biological control offers a long-term solution for the management of alien pests; coevolved natural enemies introduced into exotic ecosystems can exert control indefinitely (Article 10).
- **Research and training:** scientists in China will receive training in exploiting fungi to protect and conserve natural ecosystems from invasion by alien plant species (Article 5, 12, 14, 16, 17,18).
- **Public education and awareness:** a full information campaign is planned (Article 13).
- **Exploitation of genetic resources:** permission to exploit the rust isolate to be release in China will be obtained from the government of the country of collection (Article 15).

See 8 above for details of liaison with CBD national focal point in China.

12. How does the work meet a clearly identifiable biodiversity need or priority within the host country?

In China, there is an increasing emphasis on preserving whole ecosystems and, as a consequence, National Conservation Areas have been designated and established. Invasive alien weeds (IAW) have been identified as one of the actual and perceived serious threats to the biological integrity of these areas.

The CBD calls on governments to "prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species" (Article 8h). Recently, research on management of invasive alien species (IAS) has been given a high priority by the Chinese government. The Chinese State Environment Protection Agency (SEPA), which is in charge of the implementation of CBD in China, has held several national and international workshops on IAS since 2001. Under the co-ordination of SEPA, the "Strategy for Controlling Alien Invasive Species in China" was recently proposed. Through China's "National Invasive Alien Species Commission" an "Invasive Alien Species Expert Committee" will be established soon.

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

Mikania is both a major environmental and agricultural weed. The rust will potentially significantly reduce the impact of the weed in agro-ecosystems, increasing crop yields, and/or reducing the time farmers will need to spend on weeding activities associated with this dominating species. Hence, farmers can engage in other activities to improve their livelihoods.

By increasing the value and sustainability of the land currently under cultivation, farmers may be less likely to encroach on undisturbed natural ecosystems.

China is currently developing its tourist industry. By protecting the biodiversity of its natural environment (for which China is valued as a tourist destination), from alien invasive weeds, this project will contribute to the sustainable livelihoods of its people.

14. What will be the impact of the work, and how will this be achieved? Please include details of how the project outputs will be disseminated and put into effect to achieve this impact.

Locally, this work will potentially significantly reduce the impact of the invasive, alien weed *Mikania micrantha*, by the release of the host-specific and damaging rust fungus *Puccinia spegazzinii*. Nationally, this output of the project will provide a model to base follow-on projects.

The dissemination of the project outputs will achieve this impact by the training of Chinese scientists in this new approach to IAW suppression, and have in place all the necessary tools (pathogen, training, Official Licences) to achieve the outputs. This project aims to empower Chinese scientists to undertake similar implementation projects in the future.

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

This approach to weed control is environmentally benign, safe and self-perpetuating. Once the pathogen has been established in the field it will continue to suppress the noxious weed *Mikania micrantha* in perpetuity, and with no additional costs. In addition, the training element will empower Chinese scientists to undertake similar programmes for other invasive alien weeds in the future.

16. What steps have been taken to identify and address potential problems in achieving impact or legacy?

- Obtaining an Import Licence for the rust: Collaborative scientist Dr. Ding Jianqing has been in contact with the China Import and Export Inspection Bureau and has been assured that CAAS would be issued with a licence to import the rust into quarantine within 2 months of receiving the application. Since the Indian government has already provided an import licence for the same rust to be introduced into India (with the same dossier information), we see no problems will arise.
- Susceptibility of Chinese biotypes of the weed to the rust: The first stage of this programme is to screen a representative range of populations of *Mikania micrantha*, from its invasive range in China (Guangdong), against the seven strains of the rust that are currently held by CABI Bioscience in the UK. A broad range of populations of *Mikania* from its Asian weedy range has already been screened against these strains, and all have proven susceptible and significantly damaged by the infection. Since DNA studies have shown the Asian weed populations to come from a limited number of introductions, it is strongly anticipated that the Chinese populations will be fully susceptible to this aggressive rust

17. How will the work be distinctive and innovative? How will the project be advertised as a Darwin project and in what ways would the Darwin name and logo be used?

The work is distinctive in that it is using biodiversity (of pathogens on a plant in its native range) to help restore and protect biodiversity (in the invasive range of the now weed). By gradually reducing the impact of a major invasive alien weed (IAW) by the affect of a natural enemy, the native flora is able to regenerate and hence there will be an increase in biodiversity. Although this process happens naturally in many situations, it may be necessary to re-seed some area where no adequate seed bank remains.

The introduction of arthropod natural enemies is a well-proven method of IAW suppression, and has been implemented in China. However, the use of pathogens is a new and exciting approach, although, already, with a number of spectacular successes. The introduction of the rust *Puccinia spegazzinii* for the control of *Mikania micrantha* will be the first pathogen ever to be introduced into China for the control of a weed.

The role of the Darwin Initiative in the project will be promoted by the following:

- Training courses will be described as Darwin Courses, and the logo will be used accordingly on training manuals, literature and the promotional material produced as part of the public information campaign. Broadcasts will acknowledge the role of Darwin Initiative.
- Study and release sites in Guangdong in China will be sign-posted with the appropriate logos of collaborating organisations and funding bodies.
- Results of all the studies will be published in peer-reviewed scientific journals and the assistance provided by the Darwin Initiative will be duly acknowledged.
- Reports on project to relevant ministries in China, will have the Darwin connection reported.

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

No. CABI Bioscience (incorporating the International Institute of Biological Control) is unique in offering a comprehensive service for classical biological control of weeds.

19. Will the project include training and development? Please indicate who the trainees will be and criteria for selection. 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 Activity, Location, Date	Participants, Selection Criteria	Assessment on monitoring
Inception workshop, CAAS, China. June 2003, 10 days.	All senior project personnel: 2 UK, 4 China (although may link with CAAS-CABI Workshop on IAS).	Project work plan developed and activities put in motion. Information passed on to other junior staff. Project achieves outputs.
Handling of rust fungi as classical biological control agents, CABI, UK August 2003, 4 weeks.	2 Chinese scientists (one from CAAS, one from GEI) selected by Chinese co-ordinators.	Scientists and junior staff able to successfully propagate rust in China.
Principles and practices of classical biological control of weeds, GEI, China. April 2004, 5 days.	20 local scientists selected by GEI local co-ordinator.	Scientists able to instigate public awareness campaign and train extension workers.
Development of new project proposals, GEI April 2004, 5 days; CAAS January 2006, 5 days.	All senior project personnel (6) & administrative/scientific support (4) staff selected by Chinese co-ordinators.	Proposals developed and submitted to donors.
End of project workshop (January 2006).	All senior project personnel (6)	Results presented, proceedings produced.

20. How are the benefits and/or work of the project expected to continue after the end of grant period? Please provide a clear exit strategy.

The principal aim of the project is to develop and promote a capability for Chinese Scientists in the use of fungal biocontrol agents for the management of invasive alien weeds (IAW), with special reference to *Mikania*. The main output will be the release of a rust biocontrol agent against *Mikania* weed and monitoring its impact. It is confidently expected for this impact to be obvious and critical within 5 years of release, which the GEI personnel will continue to monitor through provincial government funding once the Darwin Initiative has finished.

A further output of this project is to develop new China-led proposals that aim to expand this project, to enable a detailed assessment of IAW throughout China, as well as targeting other key weed species. It is anticipated that this will be supported by the recommendations from the forthcoming workshop to be held and funded by CABI and CAAS in Beijing in mid-2003, and that a multi-donor funded long-term programme will be developed.

CABI has been recently involved in discussions with CAAS on potential collaborative efforts to protect the biodiversity of China from invasive alien species (IAS) under the auspices of the Global Invasive Species Programme (GISP), of which CABI is a core member. GISP is a global net work of organisations with complementary expertise in dealing with IAS issues. Other core members include IUCN and SCOPE (Scientific Committee on Problems of the Environment). This Darwin project would provide a solid framework for developing a wider collaboration between China and GISP.

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

Project implementation timetable	
Date	Key milestones
June 2003	Inception Workshop Beijing, China
June 2003	Dossier submitted to obtain Licence to Import rust in quarantine in China
July 2003	Permanent sample plots established in Guangdong, weed impact assessed
August 2003	Training of 2 Chinese scientist in handling rust
September 2003	Rust import into quarantine in China
January 2004	Licence to release rust applied for
April 2004	Workshop held at GEI on Principles and Practices of Classical Biological control of Weeds with Pathogens. New project proposals developed
April 2004	Public awareness campaign implemented in Guangdong: Regional and local media broadcasts and popular articles facilitated to inform population about release of rust and implications; extension, forestry and conservation workers, and farmers local to the area of release of the rust, targeted for an information campaign Policy makers awareness campaign implemented Beijing
May 2004	Rust released in Guangdong and spread monitored
May 2005	Rusted plant redistributed within invasive range of weed in Guangdong
October 2005	Impact of rust on weed within permanent sample plots determined; and spread at end of project established.
January 2006	End of Project Workshop, China Proceeding produced Finalisation of new project proposals Capacity put in place for long-term monitoring of rust impact Scientific papers prepared and published Assessment report written for Chinese government policy makers

22. How will the most significant outputs contribute towards achieving the purpose of the project? (This should be summarised in the Log Frame as Indicators at Purpose level)

SHORT TERM: *Puccinia spegazzinii* (rust) established in the field in China

LONG TERM: *Mikania* weed controlled & conservation areas protected. Conservation authorities adopt classical biological control using fungi as an alternative strategy for the management of alien invasive weeds. Impact of weed in agro-ecosystems reduced below economic threshold.

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

PROJECT OUTPUTS		
Year/Month (starting April)	Standard Output Number (see standard output list)	Description (include numbers of people involved, publications produced, days/weeks etc)
2003 / June	8: 2 / 14A:1	Inception Workshop Beijing, China for 5days, 6 people involved. Project work plan produced.
2003 / June		Dossier submitted to China Import and Export Inspection Bureau to obtain Licence to Import rust into quarantine in China. Main input from CABI (2 people) with contributions from CAAS (1 person).
2003 / July	22: 10	Permanent sample plots established in Guangdong, to assess weed impact and for rust releases and monitoring of impact.
2003 / August	6A: 2, 6B: 4	Training of 2 Chinese scientist (one from CAAS, one GEI) in handling rust for 4 weeks in the UK.
2003 / September		Rust import into quarantine in China
2004 / January		Licence to release rust applied for to the China Import and Export Inspection Bureau, based on addition screening undertaken in quarantine
2004 / April	14A / 8: 1 / 7: 3	Workshop held at GEI for 5 days on Principles and Practices of Classical Biological control of Weeds with Pathogens, 20 Chinese participants. New project proposals developed for 5 days, 6 people involved.
2004 / April	15B: 3 / 15D: 3 / 19:C: 3	Public awareness campaign implemented in Guangdong: Regional and local media broadcasts and popular articles facilitated to inform population about release of rust and implications; extension, forestry and conservation workers, and farmers local to the area of release of the rust, targeted for an information campaign; 6 people involved.
	15A: 1 / 19A: 1	Policy makers awareness campaign implemented Beijing, 3 people involved
2004 / May		Rust released in Guangdong and spread monitored
	15C: 1	National press release UK on rust release
2005 / May		Rusted plant redistributed within invasive range of weed in Guangdong
2005 / October		Impact of rust on weed within permanent sample plots determined; regeneration of native flora monitored; and spread of rust from initial release sites established.
2006 / January	8: 1 / 14A:1 9: 1 11A&B: 6	End of Project Workshop, China, for 1 week, 6 people involved Proceeding produced of project outputs Finalisation of new project proposals, for 1 week, 10 people involved Capacity put in place for long-term monitoring of rust impact Scientific papers prepared and published Assessment report written for Chinese government policy makers

MONITORING AND EVALUATION

- 24. Describe how the progress of the project, including towards delivery of outputs, will be monitored and evaluated in terms of achieving its overall purpose. This should be both during the lifetime of the project and at its conclusion. Please make reference to the indicators described in the Logistical Framework.**

The overall purpose of the project is to develop the capability of exploiting pathogens for the sustainable management of invasive alien weeds in China. This is to be achieved by implementing a pilot project; the release of a rust against an important invasive alien weed (IAW) (*Mikania micrantha*) in Guangdong province. Through this project, in-country and UK based training of Chinese nationals will be undertaken, as well as developing the capacity of national and local scientist to develop new projects that aim to exploit this management method for IAW in natural habitats. The inception workshop will establish a work plan, to be agreed by all senior project staff and will include the six monthly reporting schedule. Yearly visits from the UK collaborations will help ensure that any host country difficulties are regularly addressed and solutions implemented.

The monitoring and evaluation are built-in to the progression of the project. For each output to be achieved a previous stage has to be successfully completed: Permits to release the rust will only be issued by the presentation of the correct documentation and dossiers. Host country scientists will be trained in the handling of rust pathogens, which will enable them to implement the screening and release procedures. Permanent sample plots will be established which will enable the weed impact to be compared pre- and post-pathogen release. Targeted information needs to be produced in order to implement a public and policy maker awareness campaign. Full project costs will only be redeemed when all collaborators submit interim and final reports. Time and resources are allocated to undertake the development of new projects, this will help ensure continuity once the Darwin is complete.

- 25. How will host country partners be involved in monitoring and evaluation of the project?**

As discussed in 24 above, the host country partners are integral to the monitoring and evaluation of the project. At each development of the project all collaborators are required to contribute and hence the monitoring is in-built. The project will stay on track by regular contact and reporting (both directly and via e-mail). The ease of contact between all collaborators has been demonstrated during the development of this proposal.

- 26. How will you ensure that the project achieves value for money?**

The long-term benefits of this project will be considerable, both in economic (quantifiable) and environment (non-quantifiable) terms. Once the rust is established, impact is likely to be obvious and critical within 3-5 years. Within the sample plots, a measurable decline in the weed should be visible by the end of the second season after release of the rust. The project is particularly value for money, since classical biological control is a sustainable and safe approach to weed suppression. Once the rust is released, not further input is required, the rust is self-perpetuating. The 'apparent' nature of the rust should stimulate local interest and together with the impact of the awareness campaign, help support the new proposal that will be prepared during the course of the project.

- 7. Reporting Requirements. All projects must submit six monthly reports (by 31 October each year) and annual reports (by 30 April each year). Please check the box for all reports that you will be submitting, dependent on the term of your project. You must ensure that you cover the full term of your project.**

Report type	Period covered	Due date	REQUIRED?
Six month report	1 April 2003 – 30 September 2003	30 October 2003	Yes
Annual report	1 April 2003 – 31 March 2004	30 April 2004	
Six month report	1 April 2004 – 30 September 2004	30 October 2004	
Annual report	1 April 2004 – 31 March 2004	30 April 2005	
Six month report	1 April 2005 – 30 September 2005	30 October 2005	
Annual report	1 April 2004 – 31 March 2005	30 April 2006	
Six month report	1 April 2006 – 30 September 2006	30 October 2006	
Final report	1 April 2004 – project end date	3 months after project completion	Yes

LOGICAL FRAMEWORK

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

Project summary	Measurable indicators	Means of verification	Important assumptions
<p>Goal:</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"> the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <p>To develop the capability of exploiting pathogens for the sustainable management of invasive alien weeds in China.</p>	<p>SHORT TERM: <i>Puccinia spegazzinii</i> (rust) established in the field in China</p> <p>LONG TERM: <i>Mikania</i> weed controlled & conservation areas protected. Conservation authorities adopt classical biological control using fungi as an alternative strategy for the management of alien invasive weeds.</p>	<p><i>Mikania</i> weed no longer an ecological threat. New proposals employing pathogens as classical biological control agents developed; technical reports, scientific papers and publicity generated.</p>	<p>Government of China does not change current policy on introduction and release of exotic biocontrol agents.</p> <p>China maintains its commitment to the CBD.</p> <p>Assumes political situation in China does not prevent project activities.</p>
<p>Outputs</p> <ol style="list-style-type: none"> Chinese scientists & weed control practitioners trained in weed biocontrol with pathogens Permanent sample plots established & weed impact assessed in China Biocontrol agent imported & released in China Rust impact studies initiated Public awareness campaign implemented Results publicised & new project proposal developed 	<ol style="list-style-type: none"> Scientists visit UK & receive training; workshop held Plots established & methodology agreed with collaborators Permit for import & release applied Methodology agreed with collaborators Targeted information produced (leaflets, posters, videos); media contacted Articles/proposals developed 	<ol style="list-style-type: none"> Reports from trainees & in-country institutions 2, 4 & 6 Project report/ scientific papers; proposals submitted Document from CAAS Media broadcasts/ popular articles published 	<p>Suitable participants available for training courses</p> <p>Import Licence issued</p> <p>Biocontrol agents perform according to expectations</p> <p>Technology transfer allows the scientists to implement the strategy effectively</p> <p>Media uptake</p>
<p>Activities</p> <p>Training</p> <p>Implementation of biocontrol strategy</p> <p>Promotion of programme</p>	<p>Activity Milestones (Summary of Project Implementation Timetable)</p> <p>Yr 1: Inception workshop for all collaborators, China (10 days); two Chinese scientists to visit UK (4 weeks). Yr2: Workshop held in China on the principles and practices of classical biological control, run by CABI Bioscience (5 days); new project proposals developed (5 days). Yr 3: End of project workshop for all collaborators to discuss results & follow on activities (5 days); finalization of new project proposals (5 days).</p> <p>Yr 1: Permanent sample plots set up in nature reserve, China; weed impact assessed; rust imported into China for completion of additional host specificity screening; dossier submitted to China for release of rust. Yr 2: Rust released in Guangdong; establishment and spread monitored. Yr 3: Rust spread monitored and impact within sample plots assessed; capacity put in place for long-term monitoring of rust impact.</p> <p>Yr 2: Public awareness campaign implemented in Guangdong; policy maker's awareness campaign implemented Beijing. Yr 3 scientific paper prepared and published; assessment report written for Chinese government policy makers.</p>		

FINANCIAL ASPECTS

29. 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 3 years' duration, enter 'nil' as appropriate for future years. 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 rate and the percentage of time each would spend on the project each year.

	2002/2003	2003/2004	2004/2005
	%	%	%
United Kingdom project team members and role			
Carol Ellison (Project Leader, biocontrol training and pathology)	30	20	30
Sean Murphy (Ecologist, field monitoring methodology, statistics and public awareness campaign)	10	10	10
Djamila Djeddour (Training)	10		
Sue Paddon (Technical support, plant and pathogen culture)	20	20	
Host country/ies project team members and role			
Ding Jianqing (Co-ordinator, Beijing)	20	20	10
Chen Liqin (Pathogen screening in quarantine, Beijing)	10	50	10
Technical assistance to pathologist	10	50	10
Li Liying (Regional co-ordinator and public awareness campaign supervisor, Guangdong)	20	20	30
HAN Shichou (Field co-ordinator, Guangdong)	40	40	40
Field assistance	40	40	100

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	2003/2004		2004/2005		2005/2006	
	£		£		£	
	Darwin	Other	Darwin	Other	Darwin	Other
Carol Ellison						
Sean Murphy						
Djamila Djeddour						
Sue Paddon						
Ding Jianqing						
Chen Liqin						
Technical assistance to pathologist						
Li Liying						
HAN Shichou						
Field assistance						
TOTAL COST OF SALARIES						

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

	2003/2004	2004/2005	2005/2006	TOTAL
Rents, rates, heating, lighting, cleaning, overheads				
• Darwin funding				
• other funding				
Office costs e.g. postage, telephone, stationery				
• Darwin funding				
• other funding				
Travel and subsistence				
• Darwin funding				
• other funding				
Printing				
• Darwin funding				
• other funding				
Conferences, seminars etc				
• Darwin funding				
• other funding				
Capital items/equipment (please break down)				
• Darwin funding Microscope (CAAS) Misting system (GEI)				
• other funding				
Other costs (please specify and break down)				
• Darwin funding Quarantine rental Lab. and glasshouse consumables Awareness campaign				
• other funding Quarantine rental Field plot rent Awareness campaign				
Salaries (from previous table)				
• Darwin funding				
• other funding				
TOTAL PROJECT COSTS				
TOTAL DARWIN COSTS				
TOTAL COSTS FUNDED FROM OTHER SOURCES				

30. How is your organisation currently funded?

Only 3% of the annual budget comes directly from the member countries of CAB International in membership fees; the remainder is earned from sale of scientific information and products and service fees. The organisation is required by its 41 member countries to operate on a not-for-profit and fee-for-service basis. CABI Bioscience is 60-80% supported by project funding, the shortfall is made up from the publishing profits.

31. Provide details of all other funding sources identified in Question 29 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 which are confirmed.

DFID UK: Confirmed - UK based support of pathogen culture work (glasshouse costs, scientific and technical support, salaries);communication; input to awareness campaign

CABI International. Support for workshop on invasive species

CAAS: Support for workshop on invasive species. Scientific personnel support (salaries); input to awareness campaign

GEI: Scientific personnel support (salaries); field plot rent; UK travel training grant; internal travel support; input to awareness campaign

32. Please give details of any further resources sought from the host country partner institution(s) or others for this project that are not already detailed in Questions 29 and 31. This will include donations in kind and un-costed support e.g. accommodation.

33. Please separately indicate in Table D the amounts of grant requested under the Darwin Initiative and any confirmed funding/income from elsewhere (where these may be costed). Add together to show total project costs.

Table D Darwin funding request

	2003/2004	2004/2005	2005/2006
Amount of Darwin Initiative funding requested	61,868	59,010	56,530
+ Funding/Income from other sources	61,884	17,399	10,100
= Total project cost	123,752	76,409	66,630

34. 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 the project's success in the Darwin competition in the host country

CERTIFICATION 2003/04

On behalf of the trustees/company (*delete as appropriate*) CABI International

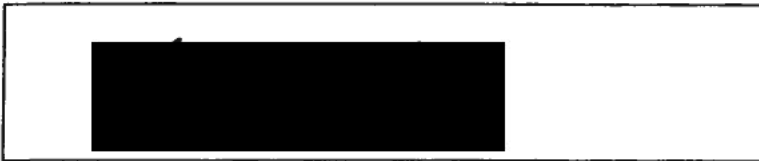
I apply for a grant of **£61,868** in respect of expenditure to be incurred in the financial year ending 31 March 2004 on the activities specified in paragraphs 21 and 23.

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 organisation's most recent audited accounts and annual report, CVs for project principals and letters of support.

Name (block capitals)	DR. CAROL A. ELLISON
Position in the organisation	Senior Project Scientist and Business Development Officer

Signed



Date:

12 January 2003

Please return completed form to Defra by **13 January 2003** by e-mail to darwin@defra.gsi.gov.uk or in paper form to Zone 4/A2 Ashdown House, 123 Victoria Street, London SW1E 6DE.