



EIDPS043 ref Fellow App 3076



Submit by 27 October 2014

### APPLICATION FOR DARWIN FELLOWSHIP PROGRAMME ROUND 21

Please read the Guidance Notes before completing this form. Where no word limits are given, the size of the box is a guide to the amount of information required. Information to be extracted to the database is highlighted blue.

**1. Name and address of UK Host organisation** (NB: Notification of results will be by email and addressed to the main UK Expert listed in Section 5)

<b>UK Organisation &amp; Address:</b>	<b>Game and Wildlife Conservation Trust</b>
<b>Project Leader Name:</b>	<b>Dr Barbara Smith</b>
<b>E-mail:</b>	
<b>Phone:</b>	

**2. Name and official address of proposed Darwin Fellow** (include email and telephone details where available)

<b>Name:</b>	<b>Dr. Parthiba Basu</b>
<b>Address:</b>	<b>Centre for Pollination Studies &amp; Department of Zoology, University of Calcutta, 35 B.C. Road, Kolkata 700019</b>
<b>E-mail:</b>	
<b>Phone:</b>	

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

<b>Proposed start date:</b> September 8th, 2015	<b>Duration of project:</b> 9 months		
<b>End date:</b> May 29 <sup>th</sup> 2016			
<b>Darwin funding requested</b>	<b>2015/16</b> £9970	<b>2016/17</b> £2600	<b>Total</b> £12,570

**4. Summary of proposed Fellowship** i.e. Outcome and expected outputs and impact

The Fellow will receive training and develop methodologies in natural pest regulation for the Indian context. The output will be an implemented participatory research program in the state of Tripura, This will: 1) strengthen on-going work conserving pollinators in India (currently compromised by the use of chemical pesticides); 2) improve farmer facility to manage pest populations which reduce crop yield and quality. The Fellow will work with the host organisation to produce a review of North / South efforts to conserve ecosystem services and produce a policy document highlighting shared understanding to improve policy implemented by the Government of Tripura.

**5. Principals in the Project.** Please give the details of the individuals from the UK host organisation (and other institutions if relevant) who would be directly involved in supervising/working with the Darwin Fellow. Please provide a one page CV for each of these named individuals. You may copy and paste this table if you need to provide details of more than one project partner.

Details	Project Leader	Other expert	Other expert	Other expert
<b>Surname</b>	Smith	Holland	Williamson	Bruce
<b>Forename(s)</b>	Barbara	John	Stephanie	Toby
<b>Post held</b>	Senior Scientist	Head of Dept.	Staff Scientist	
<b>Institution (if different to UK Host)</b>			Pesticide Action Network	Rothamsted Research
<b>Department</b>	Farmland Ecology	Farmland Ecology	N/A	Dept. Biological Chemistry
<b>Telephone/Skype</b>				
<b>Email</b>				

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

GWCT is a charity that promotes for the public benefit, the conservation of game and its associated flora and fauna. Its activities include: research and development in the creation and conservation of habitats to support ecosystem service provision on farmland; landscape, farm, field and plot scale experimental work to study invertebrate biodiversity and bio-control; long-term monitoring of invertebrates in agricultural ecosystems; an extensive advisory service providing training and advice to farmers and land managers. GWCT has established and maintained two long-term invertebrate monitoring projects (Loddington Farm 19 years; Sussex Study 43 years); brought out 1497 scientific publications since 1975; produced 72 PhDs since 1980; run approx. 30 training courses annually and has involved 22,000 members and supporters. About 70% of the current options available in the Entry level Agri-environment Schemes were developed at GWCT.

**7.** Describe briefly the aims, activities and achievements of the proposed Darwin Fellow's employing organisation. (Large institutions please note this should describe your unit or department)

The **University of Calcutta** established on 24 January 1857, is a public university located in Kolkata, India. Within India it is recognized as a *Grade A+ University* and a *Centre with Potential for Excellence* by the University Grants Commission and the National Assessment and Accreditation Council. The **Centre for Pollination Studies** was established in the university in 2012 as part of an ongoing Darwin Initiative programme. The centre aims to pursue interdisciplinary research on pollination ecology and other ecosystem services in agro-ecosystems and also act as a centre for teaching and learning for agro-ecology. It conducts a certificate course in pollination ecology and is going to initiate a post graduate certificate course in agro-ecology from January, 2015. Within a short period, the Centre has emerged as an active hub of researchers working on various aspects of pollination biology and agro-ecology. The Centre is fast gaining wide recognition within India.

**8.** Describe briefly the proposed Fellow's current role within their organisation and their link to a Darwin project (if applicable), including the project reference number, his/her role in that project

and any ongoing involvement.

Dr. Parthiba Basu works as an Associate Professor in the Department of Zoology and also as the Director of the Centre for Pollination Studies (CPS). He leads a team of team of 13 researchers in the Ecology research Unit in the department of Zoology and runs several research projects. He is the Project coordinator in India in the on-going Darwin Initiative project titled 'Enhancing relationship between people and pollinators in Eastern India (Project number 19-024) led by the applicant Dr Barbara Smith. He has also been exploring the avenues for raising fund for sustaining the CPS after the on-going project comes to an end. In his capacity as the Director of CPS he has been networking with researchers within India and abroad working in the area of agro-ecology.

**9. Provide a concept note on the Darwin Fellowship. This should include:**

9a. A clear outline of the aim and objectives of the Fellowship

A Darwin Initiative project (19-024) which focused on the conservation of insect pollinators in Eastern India revealed that conservation of pollinators is likely to be compromised by chemical pesticide use and that this understanding is shared by the farming community. Due to the absence of any effective alternative solution, those conserving non-target invertebrates are unable advise farmers to abandon pesticides. There is an urgent need to develop benign methods of pest regulation. Addressing this need is our principle aim. However, we acknowledge that across the globe there have been efforts to develop sustainable approaches to ecosystem service provision but these have not been collated and integrated, Furthermore there is a division in approaches between 'north and south' . There would be real benefit in integrating research and understanding to inform policy.

The aim of the Fellowship is to twofold:

- 1.) to develop capacity in the Centre for Pollination Studies, Calcutta University to design and implement research and policy development for natural pest regulation in the subsistence farming context thereby protecting ecosystem service delivery
- 2) to deliver a review of North / South efforts to conserve ecosystem services and produce a policy document which will in combination with 1) inform Indian state governments on best practice for policy development.

Five objectives have been deigned to achieve these aims:

Objective 1.1: Build capacity via training with partners whose expertise lies in natural pest regulation

Objective 1.2: Develop methodologies in natural pest regulation for the Indian subsistence farming context

Objective 1.3: Develop a participatory research programme to test pest regulation methodologies

Objective 2.1: Build capacity in review techniques and review North / South advances in ecosystem service provision.

Objective 2.2: Develop a shared understanding of the respective advances in agro-ecology and produce a working policy document to advise state governments in India.

9b. The role of the UK Host organisation, and others where relevant (including contacts)

The UK host organisation (GWCT) will provide direct training and coordinate training with Fellowship partners, Dr Barbara Smith will monitor standards and ensure delivery. GWCT will provide hands on-training in research methods and analysis using current research in progress. Dr John Holland currently leads an EU FP7 project: Quantification of Ecological Services for Sustainable Agriculture (QuESSA) investigating natural pest regulation and Barbara Smith is the UK case study leader. The Fellow will be introduced to the QuESSA EU partner network and be encouraged to develop dialogue and partnerships where appropriate ([www.quessa.eu](http://www.quessa.eu)), Using experience of systematic review methodologies Barbara Smith will share methodologies with Dr Basu to produce a review of global advances in ecosystem service provision.

Dr Toby Bruce of Rothamsted Research will host the Fellow to share novel strategies for pest population regulation which he has developed in Africa successfully. He will collaborate on the design of research in the Indian context.

Dr Stephanie Williamson of the Pesticide Action Network (PAN) will co-ordinate training on non-pesticidal approaches to managing pests, diseases and weeds. Dr Williamson is currently working on Darwin Initiative project 20-018.

GWCT and PAN both have extensive experience of working with farming communities to manage and deliver ecosystem service provision and the Fellow will learn from these experiences to further develop the participatory elements.

GWCT, Rothamsted and PAN will work with the Fellow to develop a participatory research programme which he will implement in the state of Tripura, India, using the structure put in place by Darwin Initiative project 19-024.

Additional Institutions who will welcome a visit from the Fellow to widen his experience include: FERA and Harper Adams University with whom Barbara Smith is collaborating on research into ecosystem service provision in agro-ecosystems.

9c. Where appropriate, how the Fellowship will contribute towards biodiversity conservation and, where relevant, poverty alleviation i.e. what the expected outcome of the Fellowship will be, with regard to the higher goals of the Darwin Initiative.

The Fellowship will lead to research into and implementation of sustainable farm management strategies which will lead directly to the protection and conservation of biodiversity, particularly the fauna which plays an active role in providing ecosystem services such as pollinating insects and beneficial insects which regulate pest populations. The Fellowship will result in a participatory scheme where farmers develop and then have access to affordable alternatives to expensive chemical inputs which will ultimately lead to improved crop yields and increased autonomy. The Fellow will develop a policy document in collaboration with Dr. Barbara Smith that will inform state governments in India about linkages between conservation of important ecosystem services and poverty alleviation through the adoption of agro-ecological approaches. Policy advice resulting from the Fellowship will lead to policy directed at conserving the biodiversity that protects ecosystem service provision. Specifically the outcome of the Fellowship will contribute to: ensuring areas under agriculture and forestry are managed sustainably, ensuring conservation of biodiversity (**Aichi Goal B; Target 7**) by developing sustainable management approaches to improving pollination and natural pest control services; ensuring that ecosystems provide essential services (**Aichi goal D; Target 14**) including pollination, natural pest control and crop yield; improving the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, and ensuring this is widely shared, transferred, and applied (**Aichi Goal E, Target 19**), working in partnership with indigenous communities to share the benefit of understanding indigenous genetic resources locally (Nagoya Article 12),

**10. Legacy.** Provide information on how the Darwin Fellow will utilise, promote and disseminate the benefits of the Fellowship on return to his/her home country. Will a strategy be developed during the Fellowship to ensure this is achieved?

The Fellow will utilise his experience in UK to develop a research program in India on natural pest control and allied ecosystem services and to develop a suitable project proposal with the UK partners to implement in India. After three months in the UK he will return to submit the proposal for funding within India and initiate a pilot project in the state of Tripura. He will then return to the UK where he will share his experience from the pilot project with the partners and make adjustments if necessary. On completing his Fellowship he will upscale the project in India. Via this research, the fruit of his experience in the UK will be widely disseminated among academic partners and the farming community. The review of North / South efforts to conserve ecosystem services will be integrated with the results of the pilot project and communicated to the Tripura government through channels established by the Darwin project 19-024 and will also be disseminated more widely through the newly formed Indian Society of Agro-ecology of which the Fellow is a co-founder. The Darwin Initiative will be acknowledged in all associated material including on websites.

**11.** How will the Fellowship assist the Fellow's organisation and/or local communities and/or home country in working towards the objectives (or implementation) of the CBD/CITES/CMS? Please refer to specific Articles or cross cutting themes as appropriate.

The outcome of the Fellowship will directly contribute towards local communities and state governments need to meet India's CBD commitment to conserve pollinators by introducing non-pesticidal pest management. Use of biodiversity in natural pest control has been highlighted in COP5 of India's CBD (Decision 5). The work will enable the Centre for Pollination Studies (CPS) to contribute evidence to help farmers ensure areas under agriculture and forestry are managed sustainably, ensuring conservation of biodiversity (**Aichi Goal B; Target 7**) and by developing sustainable management approaches to improving natural pest control services will help ensure that ecosystems provide essential services (**Aichi goal D; Target 14**). The CPS will work in partnership with indigenous communities to share the benefit of understanding indigenous genetic resources locally (**Nagoya Article 12**).

**12.** What collaboration has there been with the Darwin Fellow to date in developing the proposal, and what collaboration is planned for the duration of the Fellowship? Where relevant, describe any consultation or collaboration by the proposed Fellow within his or her own country.

The proposal has been developed in close collaboration with the proposed Darwin Fellow. The need of the Fellowship emerged through discussion between the proposed Fellow and the Applicant during her visit to India in September – October, 2014. Consultations with local communities and regional governments have indicated the need for expertise in natural pest control to support the conservation of biodiversity in agro-ecosystems. The programme of works was agreed collaboratively and a rolling programme of monitoring and evaluation will be in place throughout the Fellowship to ensure that the relationship between all partners remains positive. The Fellowship will be in two parts and this is to ensure that the work generated by the Fellow can be developed in partnership with collaborators in India. The second part of the Fellowship will include evaluation of the work implemented as a result of the first part. The Fellowship will rest on a strong foundation of collaborative work between the Applicant and the Fellow.

**13.** Where will the Darwin Fellow be based? Please be specific with organisational details and dates (where more than one location).

The Fellow will be based at the Game and Wildlife Conservation Trust for the duration of the fellowship as follows: Farmland Ecology Unit, Game and Wildlife Conservation Trust, Burgate Manor, Fordingbridge, Hampshire, SP6 1EF.

Visits to partner organisations and other contacts will be for a limited time and for no more than two or three days at a time.

**14. Provide a programme of work, including key milestones, through the duration of the Fellowship**

Activity	Duration	2015/16									2016/2017					
		J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
Orientation and introduction to GWCT. Introduction to monitoring systems for Fellowship	Five days			x												
Fellowship team meeting (with GWCT, Rothamsted and PAN)	One day			x												
Introduction to projects, protocols and analytical methods	Twenty days			x	x	x										
Exposure to GWCT partners and collaborators	Five days			x	x											
Training at Rothamsted	Two days				x											
Training at PAN	Two days				x											
Research programme design completed in collaboration with partners	Twenty days					x	x									
Research programme set-up and running	(3 months in India)						x	x	x							
Application for funding to Dept. Science and Technology, Government of India to scale-up the research.									x							
Review and adjustment of programme with partners in UK	Ongoing									x	x	x				
Training in review methodology	Five days									x						
Work on review: Integrating North/South developments in agro-ecological approaches to ecosystem service provision	60 days									x	x	x				
Review document produced	10 days											x				
Policy note drafted	3 days											x				
Evaluation of Fellowship	2 days											x				

**15. Costs. Using UK Government Financial Years ie April 2015 – March 2016etc), please set out your budget for the Fellowship**

	Unit cost	No of months		Total	Total
		2015/16	2016/17	2015/16	2016/17
<b>Fellow's Subsistence contribution</b>					
Arrival allowance	£300	NA	NA	300	
London based	£1,200 pcm				
UK (outside London)	£1,000 pcm	4	2	4000	2000
Overseas	£tbc*	N/A	N/A		
<b>Host organisation's costs</b>					
UK	£300 pcm	4	2	1200	600
Overseas	£tbc*				
<b>Total Fellow and Host costs</b>					
<b>Travel costs to Fellowship location (up to £2,000)</b>					
Return airfare	Details: 2 return flights (return for second visit in next financial year but cost less if booked and paid for as 'return' rather than single)			1600	
Travel to/from airports	Details: London – Bournemouth return x 2			200	
Visas, insurance, medical cover etc	Details: Visa			150	
<b>Additional travel costs (up to £500 local travel OR £1,500 for international travel)</b>					
Purpose of additional travel	Details: To spend time training with Fellowship partners				
Airfares/train fares	Details: Train fare to Rothamsted and PAN (Brighton)			100	
Travel to/from airports/stations	Details:				
Subsistence costs (inc number of days and rates)*	Details: Allowance of £100 daily subsistence and accommodation total 4 days			400	
Visas etc	Details:				
<b>Total travel costs</b>					
<b>Fees and training costs</b>					
Academic fees	Details: Fees for formal training from PAN			2020	
English language training costs**	Details:				
<b>Total fees</b>				<b>2020</b>	
<b>TOTAL REQUEST FROM DARWIN £</b>				<b>9970</b>	<b>2600</b>

\*for advice on rates please call the Darwin Application Unit 0131 440 5181

\*\*these costs are ring fenced and should be surrendered if not used.

**16. Other sources of funding: provide details and amounts**

Time of staff from the partner organisations and costs of normal logistics will be borne by the partner organisations. The Darwin Initiative would be the principle funder of this Fellowship. A breakdown of in-kind costs can be provided if necessary.

## FCO NOTIFICATION

Please check the box if you think that there are sensitivities that the Foreign and Commonwealth Office will need to be aware of should they want to publicise details of the Darwin Fellowship and the resultant work in the UK or the Darwin Fellow's home country.

## CERTIFICATION

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 CVs for project principals and letters of support as requested in the Guidance Notes. Our most recent audited accounts and annual report are also enclosed/can be found at (*delete as appropriate*):

<b>Name (block capitals)</b>	<b>BARBARA SMITH</b>
<b>Position in the organisation</b>	Senior Scientist

Signed

*Barbara Smith*

Date:

27/10/2014



## Fellowship Application - Checklist for submission

	Check
Have you provided actual start and end dates for the Fellowship?	<b>x</b>
Have you provided your budget based on UK government financial years ie 1 April – 31 March?	<b>x</b>
Have you checked that your budget is complete, correctly adds up and that you have included the correct final total on the top page of the application?	<b>x</b>
Has your application been signed by a suitably authorised individual? <b>(clear electronic or scanned signatures are acceptable. Please do not type yourname)</b>	<b>x</b>
Have you included a 1 page CV for the proposed Fellow and the experts listed in Section 5?	<b>x</b>
Have you provided the relevant letters of support?	<b>x</b>
Have you included a copy of your most recent annual report and accounts? <b>An electronic link to a website is acceptable.</b>	<b>x</b>
Have you read the Guidance Notes?	<b>x</b>
Have you checked the Darwin website immediately prior to submission to ensure there are no late updates?	<b>x</b>

Once you have answered Yes to the questions above, please submit the application, not later than 2359h GMT at the end of **27 October 2014** to [Darwin-Applications@LTSI.co.uk](mailto:Darwin-Applications@LTSI.co.uk) using the name of the proposed Fellow as the subject of your email. 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).

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.