



Submit by Tuesday 1 December 2015

DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 22: STAGE 2

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. Blank cells may render your application ineligible

ELIGIBILITY**1. Name and address of organisation**

(NB: Notification of results will be by email to the Project Leader in Question 6)

Applicant Organisation Name:	Royal Botanic Garden Edinburgh (RBGE)
Address:	20a Inverleith Row
City and Postcode:	Edinburgh, EH3 5LR
Country:	United Kingdom
Email:	
Phone:	

2. Stage 1 reference and Project title

Stage 1 Ref: 3153	Science-based interventions reversing negative impacts of invasive plants in Nepal (10 words, maximum 10)
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3. Project description (not exceeding 50 words)

Developing the scientific knowledge-base and in-country capacity to tackle increasing challenges from invasive plants in Nepal. Engaging local communities in recognition, control and utilisation of invasive plants, and restoring infested lands. Using invasive plant biomass for alternative, carbon-sensitive bioenergy sources to improve livelihoods, reduce poverty, conserve biodiversity and offset carbon.
(50 words, maximum 50)

4. Country(ies)

Which eligible host country(ies) will your project be working in? You may copy and paste this table if you need to provide details of more than four countries.

Country 1: Nepal	Country 2:
Country 3:	Country 4:

5. Project dates, and budget summary

Start date: 1st April 2016	End date: 31st March 2019	Duration: 3 years		
Darwin request	2016/17 £ 102,903	2017/18 £ 100,308	2018/19 £ 90,374	Total request £ 293,585
Proposed (confirmed & unconfirmed) matched funding as % of total Project cost				47%
Are you applying for DFID or Defra funding? (Note you cannot apply for both)		DFID		

6. Partners in project. Please provide details of the partners in this project and provide a CV for the individuals listed. You may copy and paste this table if necessary.

Details	Project Leader	Project Partner 1	Project Partner 2
Surname	Watson	Shrestha	Yadav
Forename (s)	Mark Francis	Kanti	Rajdev Prasad
Post held	Head of Major Floras	Chief, Faculty of Science	Director General
Organisation (if different to above)	RBGE	Nepal Academy of Science and Technology	Department of Plant Resources, MoFSC
Department	Science	Science	
Telephone			
Email			

Details	Project Partner 3	Project Partner 4
Surname	Jha	Pokharel
Forename (s)	Pramod Kumar	Bharat Kumar
Post held	Head of Department	Country Director
Organisation (if different to above)	Central Department of Botany, Tribhuvan University	HELVETAS Swiss Intercooperation, Nepal
Department		
Telephone		
Email		

7. Has your organisation been awarded a Darwin Initiative award before (for the purposes of this question, being a partner does not count)? **YES**

If so, please provide details of the most recent awards (up to 6 examples).

Reference No	Project Leader	Title
EIDPS032	David Harris	Sydney Ndolo Ebika, Darwin Fellowship
EIDPS033	Mark Newman	Phetlasy Souladeth, Darwin Fellowship
EDIPS035	Mark Watson	Sangeeta Rajbhandary, Darwin Fellowship
162/19/007	Anthony Miller	Building capacity for in-situ conservation in Iraq
162/17/022	David Harris	Conservation of the lowland savanna ecosystem in Belize
162/15/011	David Harris	Building capacity for forest inventory in the Republic of Congo

8a. If you answered 'NO' to Question 7 please complete Question 8a, b and c.

If you answered 'YES', please go to Question 9 (and delete the boxes for Q8a, 8b and 8c)

8b. DO NOT COMPLETE IF YOU ANSWERED 'YES' TO QUESTION 7.

8c. DO NOT COMPLETE IF YOU ANSWERED 'YES' TO QUESTION 7.

9. Please list all the partners involved (including the Lead Institution) 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 partners to be involved in the project. Please provide written evidence of partnerships. Please copy/delete boxes for more or fewer partnerships.

<p>Lead institution and website:</p> <p>Royal Botanic Garden Edinburgh (RBGE) UK www.rbge.org.uk</p>	<p>Details (including roles and responsibilities and capacity to lead the project): (max 200 words)</p> <p>Experience: RBGE leads the Flora of Nepal project (www.floraofnepal.org) and has a long-standing research programme on the Himalayan flora, including botany, education, capacity building, sustainable development and conservation, and soft diplomacy.</p> <p>Roles and responsibility: RBGE is responsible for leadership, overall reporting, quality control, finance and liaison with Darwin Initiative. In addition RBGE will contribute botanical expertise, host the Nepalese Project Officer, maintain the database infrastructure, provide technical training and supervision for capacity-building activities, and facilitate use of its herbarium, library and living collections.</p> <p>Involvement: RBGE has led throughout, including project concept, design, development, funding, partnership building, implementation, monitoring and evaluation, and communications. RBGE is the key link with in-country research institutes, facilitated by Bhaskar Adhikari, a Nepalese botanical researcher based at RBGE.</p> <p>Capacity: Mark Watson (Editor-in-Chief, Flora of Nepal) and Colin Pendry (Managing Editor) have long-standing experience in collaborations with Nepalese botanists and working in Nepal. Martin Pullan (informatics expert) has visited Nepal and collaborated with Nepalese botanists.</p> <p>Partnerships: RBGE, NAST, DPR and TU-CDB work together under an MoU (1999) and partnered a successful Darwin Initiative project (2003-2006). All the partners have active working relationships and have been involved in preparing this application through in-country meetings, phone, Skype and email.</p> <p>(200 words, maximum 200)</p>
<p>Have you included a Letter of Support from this institution?</p>	<p>Yes</p>

<p>Partner Name and website where available:</p> <p>Nepal Academy of Science and Technology (NAST) www.nast.gov.np</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Experience: NAST is the national organisation for the promotion of science and technology. It is the lead in-country partner for Flora of Nepal and has an active programme of primary and applied research on plants and plant products, including bioenergy and other development-related bio-resources.</p> <p>Roles and responsibility: NAST is the in-country lead organisation with responsibility for in-country co-ordination, reporting and general finance (including audited accounts). NAST will host the Project Office, oversee contracted staff, and provide leadership in bioenergy research and development, especially biochar technologies. NAST is responsible for liaison with the relevant Government Ministries and with the Nepal Steering Committee of the Flora of Nepal.</p> <p>Involvement: NAST has been involved in all stages of project development, including the <i>Plants and You</i> precursor project, and initiated the signing of the project MoU.</p> <p>Capacity: NAST hosts the Flora of Nepal Office and has capacity to provide office space. Kanti Shrestha is on the Flora's Nepal Steering Committee and Shandesh Bhattarai is a contributor to the Flora, with experience of fieldwork in Nepal, and has visited RBGE for taxonomic training. Rabindra Dhakal is a bioenergy specialist, especially biochar, and other NAST staff are experienced in biodiversity documentation.</p> <p>Partnerships: (see comments under RBGE). (200 words, maximum 200)</p>
Have you included a Letter of Support from this institution?	Yes

<p>Partner Name and website where available:</p> <p>Department of Plant Resources (DPR), Ministry of Forests and Soil Conservation (MoFSC) www.dpr.gov.np</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Experience: DPR is the National authority for plants and CITES. Established in 1964, DPR has an active programme of taxonomic and applied research, manages the National Herbarium (KATH) and the National Botanical Garden, and is a main partner on Flora of Nepal.</p> <p>Roles and responsibility: Leadership in biodiversity research and documentation (DPR is the in-country botanical authority for plant biodata), and restoration of degraded lands, especially relating to invasive plants and NTFPs. Liaison with Government of Nepal (Department of Forests and Department of National Parks and Wildlife Conservation, and other staff in MoFSC (especially CITES and CBD focal points). DPR will provide hot-desk facilities at KATH, and facilitate use of the herbarium, library and living collections.</p> <p>Involvement: DPR has been involved in all stages of project development, including the <i>Plants and You</i> precursor project. DPR staff have participated in face-to-face meetings to develop the project.</p> <p>Capacity: Many staff beyond those listed in the proposal are experienced taxonomists with field expertise and are keen to participate. They have collaborated with RBGE staff on expeditions and worked with the other project partners. The national reference collection of plants, KATH, also hosts the Flora of Nepal Resource Office.</p> <p>Partnerships: (see comments under RBGE). (200 words, maximum 200)</p>
Have you included a Letter of Support from this institution?	Yes

<p>Partner Name and website where available:</p> <p>Tribhuvan University, Central Department of Botany (TU-CDB) Nepal www.cdbtu.edu.np</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Experience: TU-CDB is part of Tribhuvan University where botany has been taught since 1947. CDB is responsible for all academic programs of Botany within TU, it runs a postgraduate programme (MSc and PhD) and maintains an active research programme. TU-CDB has trained over 2000 M.Sc. (Botany) students since 1965. TU-CDB is a partner for Flora of Nepal and maintains an herbarium (TUCH). It is a centre of excellence for research on invasive plants, and involved in sustainable development programmes, especially relating to NTFPs.</p> <p>Roles and responsibility: TU-CDB leads on research and documentation of weed species, and the biological characterisation and management plans for invasive plants. TUCH herbarium will be made available to project. TU-CDB is responsible for involvement of TU MSc students, including supervision, training and logistical arrangements.</p> <p>Involvement: TU-CDB has been involved in all stages of project development, with staff participating in face-to-face meetings.</p> <p>Capacity: Bharat Shrestha is the technical lead, but TU-CDB has many systematics and ecology scientists who will contribute data and participate in fieldwork. The Botany MSc has 15-16 students per year majoring in systematics and ecology, and there other MSc courses at TU which may be involved (e.g. MSc Forestry).</p> <p>Partnerships: (see comments under RBGE). (200 words, maximum 200)</p>
Have you included a Letter of Support from this institution?	Yes

<p>Partner Name and website where available:</p> <p>HELVETAS Swiss Intercooperation, Nepal nepal.helvetas.org</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Experience: HELVETAS came to Nepal in 1956 and cooperates with many technical and social organizations in all 75 districts. HELVETAS aims to create an environment where people have new choices and become equipped with new skills and abilities to improve their livelihoods. It promotes the principles of decentralization and subsidiarity in decision-making, implementation and accountability for development. Environment and Climate is one of the organisation's working areas, and HELVETAS runs the EU-funded bioenergy project (http://bioenergy.org.np), up-scaling the production and consumption of bioenergy to reduce carbon emissions and enhance local employment in Nepal.</p> <p>Roles and responsibility: HELVETAS's role is in socio-economy, livelihoods and resilience, stakeholder engagement, and bioenergy technology transfer. HELVETAS has responsibility for integration with community stakeholders, facilitating liaison with CFUGS* within the HELVETAS network, and promoting grassroots community-level engagement.</p> <p>Involvement: HELVETAS has been fully involved in the preparation of this Stage 2 application, via Skype and face-to-face meetings, especially in the development of the bioenergy and technology transfer aspects of the project.</p> <p>Capacity: Bharat Pokharel and Moon Shrestha and other HELVETAS staff have extensive experience in this field and are keen to participate as in-kind support and for HELVETAS's community-based network to be used for this project.</p> <p>(198 words, maximum 200)</p>
Have you included a Letter of Support from this institution?	Yes

*CFUGS = Community-based Forest User Groups (including Community Forest User Groups, Buffer Zone Forest User Groups, Leasehold Forest User Groups, Collaborative Forestry Management Groups, etc.)

10. Key Project personnel

Please identify the key project personnel on this project, their role and what % of their time they will be working on the project. Please provide 1 page CVs for these staff, or a 1 page job description or Terms of Reference for roles yet to be filled. Please include more rows where necessary.

Name (First name, surname)	Role	Organisation	% time on project	1 page CV or job description attached?
Bhaskar Adhikari	Project Officer	RBGE	75*	Yes
TBC	Team Leader	NAST/ForestAction	20*	Yes
TBC	Project Officer	NAST/ForestAction	100*	Yes
TBC	Project Assistant (1)	NAST/ForestAction	50*	Yes
TBC	Project Assistant (2)	NAST/ForestAction	50*	Yes
TBC	Project Assistant (3)	NAST/ForestAction	50*	Yes
TBC	Project Officer	NAST	100*	Yes
Mark Watson	Project Leader	RBGE	20	Yes
Colin Pendry	Project Dpty-leader	RBGE	10	Yes
Martin Pullan	Informatics	RBGE	10	Yes
Bharat Pokharel	Co-PI, Partner lead	HELVETAS	5	Yes
Moon Shrestha	Bioenergy expert	HELVETAS	20	Yes

Rajdev Yadav	Co-PI, Partner lead	DPR	10	Yes
Sanjeev Kumar Rai	Biodiversity expert	DPR	20	Yes
Kanti Shrestha	Co-PI, Partner lead	NAST	10	Yes
Shandesh Bhattarai	Coordinator, botanist	NAST	20	Yes
Rabindra Dhakal	Bioenergy expert	NAST	20	Yes
Pramod Kumar Jha	Co-PI, Partner lead	TU-CDB	5	Yes
Bharat Shrestha	Invasive plant ecologist	TU-CBD	20	Yes

*People employed by Darwin funds on the project: 6 in Nepal, 1 in UK

11. Problem the project is trying to address

Please describe the problem your project is trying to address in terms of biodiversity and (essential for DFID projects) its relationship with poverty. For example, what are the drivers of loss of biodiversity that the project will attempt to address? Why are they relevant, for whom? How did you identify these problems?

If your project is working on an area of biodiversity or biodiversity-development linkages that has had limited attention (both in the Darwin Initiative portfolio and in conservation in general) please give details.

69% of people in Nepal are rural poor living in remote regions relying directly on plant resources to sustain livelihoods. 1.9m are climate vulnerable. Community-based Forest User Groups (CFUGS) strive to manage plants and habitats so that they continue to meet daily needs for food, fodder, shelter, fuel, medicine, etc. Project partner engagement with rural communities has shown that invasive plants threaten livelihoods and wellbeing as farmland and forests have become unproductive, and medicinal plants and NTFPs have been lost. The spread of invasive plants is also increasing poverty by reducing employment and income-generating opportunities.¹ Natural resource dependent people in the target districts have requested help to control invasives, restore degraded lands and acquire technologies to convert waste biomass into bioenergy.

Government of Nepal (GoN) recognises the spread of invasive plants as a 'Key Challenge', damaging habitats, forests and farmland, and causing biodiversity loss. Nepal's *National Biodiversity Strategy and Action Plan*² emphasises the increasing emergence and fast spread of invasive plants as a major threat to forest biodiversity and an emerging issue in understanding impacts of climate change. In alignment with Aichi Targets 9 & 15, Bonn Challenge, and Sustainable Development Goal 15, GoN considers it a 'Strategic Priority' to control infestation and spread of invasives and restore degraded lands.³ Priority actions include:

- Enhancing national capacity for detailed surveying and early detection,
- Building the knowledge base - filling gaps in botanical identification, appearance and characterisation,
- Producing multi-lingual manuals on recognition and control,
- Informing and filling policy gaps for better management of forest resources,
- Raising awareness of local people on identification of invasives and impacts,
- Providing technical assistance and involving local people in controlling/managing invasives,
- Making bio-briquettes, biochar and other low-emission bioenergy from invasives.

DPR, NAST and TU are GoN lead agencies, and all partners have extensive experience in this field.

(300 words, maximum 300)

¹ Shrestha, U.B. & Bawa, K.S. (2014). Economic contribution of Chinese caterpillar fungus to the livelihoods of mountain communities in Nepal. *Biological Conservation*, 177: 194-202.

² *National Biodiversity Strategy and Action Plan*(2014-2020) www.cbd.int/countries/?country=np

³ NBSAPv2 and 5th *CBD National Report* www.cbd.int/countries/?country=np

12. Biodiversity Conventions, Treaties and Agreements

Which of the conventions supported by the Darwin Initiative will your project support? Note: projects supporting more than one convention will not achieve a higher scoring

Convention On Biological Diversity (CBD)	Yes
Nagoya Protocol on Access and Benefit Sharing (ABS)	No
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	No
Convention on International Trade in Endangered Species (CITES)	No

12b. Biodiversity Conventions

Please detail how your project will contribute to the objectives of the convention(s), treaties and agreements your project is targeting. You may wish to refer to Articles or Programmes of Work here. Note: No additional significance will be ascribed for projects that report contributions to more than one convention

CBD is supported by providing tools to preserve and share authenticated knowledge of alien plants (Art.7a;8j;17.1&2), empowering Forest Officers and local communities (encouraging government/private sector cooperation, Art.10e) through training and capacity building (Art.12) to identify and monitor species (Art.7b), manage biological resources (Art.8), and understand which require urgent conservation measures and which have greatest potential for sustainable use (Art.7b;10b&c).

We will raise awareness of the damaging effects of invasive plants, promoting environmentally sound, sustainable development (Art.8e), imparting knowledge to local communities helps prevent introduction of, control and eradication of aliens (Art.8h), contributing to better management and protection of species/ecosystems (Art.8c&d), and informing management plans for restoring degraded areas (Art.8f;10d). Restoration of degraded habitats contributes to the Bonn Challenge¹, SDG 15², Aichi Target 15³, REDD+⁴ and Rio+20 land degradation goals.⁵ The focus on invasive plants directly addresses Aichi Target 9, and Targets 1,2,4,5,7,14 &19 are also addressed.

We will undertake and encourage international collaborative research and training (Art.12b;18.1&2&4&5), promote its use in conservation and sustainable use (Art.12c), and advise government on revising national lists. We will work with Nepalese media to promote a wider understanding of these issues (Art.13a), and help develop an educational resource at the National Botanic Garden (Art.13b).

(200 words, maximum 200 words)

12c. Is any liaison proposed with the CBD/ABS/ITPGRFA/CITES focal point in the host country?

YES if yes, please give details:

Government of Nepal, Ministry of Forests and Soil Conservation (MoFSC) is the lead agency for the CDB and will be involved through its Department of Plant Resources – one of the main partners of the project. The CDB focal point is based at the MoFSC head office and will be involved with this project.

¹ www.bonnchallenge.org

² Sustainable Development Goals, www.un.org/sustainabledevelopment/sustainable-development-goals

³ Aichi Targets, www.cbd.int/sp/targets

⁴ www.un-redd.org

⁵ www.uncsd2012.org/

13. Methodology

Describe the methods and approach you will use to achieve your intended outcomes and impact. Provide information on how you will undertake the work (materials and methods) and how you will manage the work (roles and responsibilities, project management tools etc.).

(Max 500 words – this may be a repeat from Stage 1, but you may update or refine as necessary. Tracked changes are **not** required.)

Activities focus on three rural districts of Nepal, but maintain wider perspective by covering nationally important invasive plants and informing government policy. HELVETAS network districts in western Nepal include the poorest, least developed regions, suffering acute problems from invasive plants - especially *Mikania*, *Ageratina*, *Chromolaena* and *Lantana*.

15 CFUGS will be actively engaged throughout the project, representing 750 households and at least 3750 people (ca. 2000 women). Outreach will be extended through articles in national newspapers, internet and radio, engaging the public, farmer networks and environmental NGOs.

Output 1: Local communities, particularly those involved in forest management and forest-based enterprise, will be engaged in capacity building workshops, fieldwork and practical demonstrations on invasive plants, ensuring knowledge products are appropriate to their needs, and theory is understood and put into practice. CFUGS will be trained, and supported by follow-up visits, in land restoration using economically useful plants supplied through the project.

Output 2: Scientific research will fill knowledge gaps identified in NBSAPv2, raise awareness and underpin interventions targeting invasive plants and reclaiming infested lands. We will use the *Plants and You* platform (DFID-UK's KNOWFOR programme) to publish image-rich bilingual plant profile knowledge products for use by local communities and to inform government. These include information called for by NBSAPv2 on identification, invasive potential, control methods and alternative uses. Data recorded during fieldwork and interviews will be augmented with data from herbaria and literature in Nepal/UK. GIS niche modelling will assess the potential spread of non-native species, and Remote Sensing will be trialled on three invasive plants in collaboration with UTAS¹. Six Nepalese botanists/forestry professionals and 20 MSc students will be trained.

Outputs 3/4: Technologies for converting invasive plant biomass, and other waste biomass (dead leaves, rice husks, old newspapers, etc.) into sources of bioenergy, will be transferred to local communities by working with HELVETAS, ForestAction² and AECP³. They will introduce appropriate technologies which have proven successful in converting invasive plants and into bio-briquettes/pellets. Biochar is a less mature technology. As well as deploying known systems, we will undertake research and development to improve the charring methods. Community groups will be supplied with charring and compressing equipment, trained in its use, and supported in the production of bioenergy products. Community groups will be trained in marketing these products and supported in the path to market. The demonstration of higher economic and other benefits of productive restored land, and the use of other waste plant biomass for bioenergy, will mitigate against the perverse result of permitting the continued growth of invasive plants for bioenergy.

The roles and responsibilities of partners have been outlined in the attached MoU. The Activities in the logframe have been subdivided into tasks and assigned to partners. Deliverables, milestone and deadlines will be set out in a detailed Gantt chart and progress monitored in project meetings/reports. Participatory assessments establish baselines (building on 2011 census), and repeated at the end of the project to assess impact. An Outcome Monitoring Frame will be used to assess achievements against measurable indicators.

(500 words, maximum 500)

¹ University of Tasmania, Australia www.utas.edu.au

² ForestAction www.forestaction.org

³ Alternative Energy Promotion Centre, Ministry of Science, Technology and Environment
www.aepc.gov.np

14. Change Expected

Detail the expected changes this work will deliver. You should identify what will change and who will benefit a) in the short-term and b) in the long-term.

- If you are applying for Defra funding this should specifically focus on the changes expected for biodiversity conservation and its sustainable use.
- If you are applying for DFID funding you should in addition refer to how the project will contribute to reducing poverty. Q15 provides more space for elaboration on this.

Natural resource dependent people empowered to identify and tackle invasive plants that degrade their lands. Invasive plants cleared from 15 CFUGS, and degraded areas restored with native plants, reversing biodiversity loss. Longer-term, economically important NTFPs generate income. Communities self-sufficient in habitat restoration, combating re-infestation, and using local plant resources sustainably. Biodiversity strengthened, livelihoods and well-being secured.

Women-based groups produce bioenergy bio-briquettes/pellets from waste biomass (invasives, rice husks, etc.) to replace firewood in homes/small businesses. These provide safer, less laborious alternatives to cutting wood, reducing pressures on forests (expected 30% reduction in fuelwood use), creating healthier households (less smoke) and providing income generation opportunities – especially for women and girls who undertake this work. Longer-term, entrepreneurs establish small businesses based on demonstrated success, creating employment opportunities. Pilot pellet production in Nawalparasi has up-scale potential to supply Kathmandu/industry.

Biochar produced from invasives by 15 CFUGS and used to enhance soil fertility –restoring forests and agricultural land, reversing negative effects of invasive plants on livelihoods and poverty. Research and development on charring methods will improve the technologies. Longer-term benefits include sequestration of carbon and generation of tradable carbon credits.

Raised capacity for scientific study of invasive plants (>25 students and researchers trained). A reliable scientific knowledge base and field guide will underpin NGO development programmes and correct errors of the past. Knowledge products enable early detection and reporting of invasive plants – prevention is better than cure - and shared knowledge will build resilient communities.

GoN can implement science-based policies, establish a priority national list of invasive plants, and fulfil its obligations under international conventions (notably CBD Aichi Target 9).

Public awareness raised on the problems of invasive plants, dangers of introducing new invasives and how they can help. Invasive plants are intrinsically linked with climate change, so personalise issues and support drivers for mitigation.

(300 words, maximum 300)

15. Pathway to poverty alleviation – ESSENTIAL FOR DFID PROJECTS, OPTIONAL FOR DEFRA PROJECTS

Please describe how your project will benefit poor people living in low-income countries. Give details of who will benefit and the number of beneficiaries expected to be impacted by your project. The number of communities is insufficient detail – number of households should be the largest unit used. If possible, indicate the number of women who will be impacted.

Nepal is amongst 20 poorest countries in the world: 56% live below \$2/day international poverty line, and 25.2% below national poverty line. 69% are natural resource dependent rural poor, the target beneficiaries. 750 natural resource dependent households, from 15 CFUGS, will benefit by engagement in the project, representing at least 3750 people (ca. 2000 women). Migrant working cause high absentee levels, with women left in charge. Since 2001, female-headed households have risen 11%, to 26%¹ - this project will disproportionately benefit women.

Wild NTFPs and crops are vital for sustaining livelihoods and wellbeing. The poor depend upon local plants for personal health and income generation - it is the poor who generally collect NTFPs.² Women usually undertake the management, collection, processing and sale of medicinal plants, often a major contribution to household income (e.g. 53% of household cash income for Yarsagomba²). Invasive species threaten these livelihoods by degrading habitats and out-competing native plants: NTFPs are lost and productive farmland ruined, increasing poverty and harming wellbeing.

15 CFUGS will be empowered to tackle invasive plants, becoming self-sufficient in restoring degraded areas into productive lands so that they sustain livelihoods and provide enhanced income generating opportunities through sale of NTFPs. People will be able to share their knowledge, and be able to propagate plants for further restorations - including NTFPs which can be managed sustainably for personal use or sale.

Bioenergy technologies established in the 15 CFUGs and Womens Groups will give opportunity to using waste biomass to make alternative fuels to replace fuelwood, generate income, improve land fertility and trade in carbon credits. 3 women-based cooperatives making high-quality bio-briquettes/pellets will be earning income and generating employment as well as providing for personal use (heating/cooking). Biochar will enhance the fertility of cultivated lands, increasing yields and improving food security and income generation.

(300 words, maximum 300 words).

¹ Population Monograph of Nepal, Vols 1-3. (2014). Central Bureau of Statistics, National Planning Commission, Government of Nepal

² Subedi, B.P. Non-Timber Forest Products Sub-Sector in Nepal: Opportunities and Challenges for Linking Business with Biodiversity Conservation. www.ansab.org/wp-content/uploads/2010/07/NTFPs_Nepal.pdf

³ Shrestha, U.B. & Bawa, K.S. (2014). Economic contribution of Chinese caterpillar fungus to the livelihoods of mountain communities in Nepal. *Biological Conservation*, 177: 194-202.

16. Exit strategy

State whether or not the project will reach a stable and sustainable end point. If the project is not discrete, but is part of a progressive approach, give details of the exit strategy and show how relevant activities will be continued to secure the benefits from the project. Where individuals receive advanced training, for example, what will happen should that individual leave?

The project will reach a stable and sustainable end point with the training/capacity building of CFUGS and community groups so that they are self-sustaining in degraded land restoration, the manufacture and marketing of briquettes/pellets and the production and use of biochar. This will be supported by the publication of printed/digital manuals and knowledge products designed to be intuitive and reusable by others. An expert cohort of botanists and socio-economists will be able to independently continue this work into new areas, some as staff of project partners, and others will have heightened opportunities for employment in the environment sector.

RBGE has a long-term commitment to collaborate with DPR, NAST and TU-CDB in biodiversity research and capacity building in Nepal, including producing plant knowledge products, and to maintain the data management system which serves digital and printed outputs. However, should RBGE be unable to do this, in-country access to information garnered by the project will be ensured by distributing PDF versions of plant profile pages and publications to each partner. Such documents can be independently utilised, modified and maintained and made publically available in by reprinting or on-line. RBGE will commit to their long-term archiving and archiving the infrastructure and underlying database.

(200 words, maximum 200 words).

17a. Harmonisation

Is this a new initiative or a development of existing work (funded through any source)? Please give details (Max 200 words)

In 2012 FCO funded a 3-month £30k Great Himalayan Trail project to publish botanical information for the trekking/tourism sector in Nepal, informing guides and trekkers on plants they encounter and raising awareness of their value to local people and their importance in ecosystems. Participatory development with stakeholders resulted in a prototype A5 booklet with one Plant Profile page per species. A standard template presented images and information so that each species/page was standalone and could be combined with others in multiple printed products. This concept was well received by the development, environment and tourism sectors.

Plants and You, a 10-month £90k project funded by DFID-UK KNOWFOR programme (ended in March 2015), developed this approach with Forestry Sector stakeholders to improve Plant Profile design and information content, and develop a database-driven information management system so that pages are authored via a webpage. Pages are stored digitally in a 'Botanical Knowledge Bank' that will enable reuse and future development of digital knowledge products. Each species has a Main Page with general information and one or more Sector Pages giving further, sector-specific data.

The proposed project will build on this technology, developing Main Pages and Development Sector Pages for invasive plants and NTFPs.

(200 words, maximum 200 words)

17b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work? **No**

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

18. Ethics

Outline your approach to meeting the Darwin Initiative's key principles for research ethics as outlined in the guidance notes.

RBGE has been working closely with organisations in Nepal for 25 years and is familiar with legal and ethical obligations in both countries. Long-running MoUs include statements on legal and ethical obligations. Access and Benefit Sharing is of particular concern, and RBGE works with DPR to abide by the letter and spirit of local and international legislation. RBGE collects herbarium specimens with written permission (including statements on benefit sharing) and export and CITES permits.

This project includes strong leadership and participation from Nepal, and local communities involved are already part of HELVETAS network. Engagement with Government officials and local communities is developed and led by Nepalese partners, in collaboration with community leaders and local organisers, thereby ensuring the interests and perspectives of all involved are properly addressed and that people's rights and privacy will be respected.

Nepalese staff understand that unrecorded traditional knowledge may be discovered during this project, and PIC must be obtained if this to be recorded in Species Pages. Informants will be told that these will be made available online under a Creative Commons licence, and information only recorded with prior agreement.

Project partners are experienced in conduct similar research and so well aware of issues around maintaining independence and integrity, intellectual detachment, and credibility of research results.

The well-being of all those involved in the project is of paramount concern, especially health and safety in Nepal where this is often lacking. At appropriate times in the project staff will be briefed on the importance of H&S, assessing risks, and the rigorous standards expected (e.g. using adapted RBGE Risk Assessment Absence on Duty Forms). Staff will be given medical and travel insurance for field visits, and (as for RBGE-led expeditions) will be given briefings and medical kits when visiting remote areas (lone working fieldwork is not permitted).

(300 words, maximum 300 words).

19. Raising awareness of the potential worth of biodiversity

If your project contains an element of communications, knowledge sharing and/or dissemination please provide a description of your intended audience, how you intend to engage them, what the expected products/materials there will be and what you expect to achieve as a result. For example, are you expecting to directly influence policy in your host country or is your project a community advocacy project to support better management of biodiversity?

Raising awareness of the value of Nepal's biodiversity, the threats posed by non-native invasive plants, and what can be done to restore degraded lands are at the heart of this project.

This is a community advocacy project, with printed and electronic knowledge products supporting community-based capacity building. Knowledge empowerment and practical support is needed for people to effectively combat invasive plants and restore degraded lands into productive areas with enhanced biodiversity. These bilingual, illustrated materials will provide a long-term reference and basis for extending the teaching into other communities.

Through DPR, we will directly influence government policy using research to inform the creation of a national list of invasive plants, supported by authoritative species profiles and predicted distribution models.

The general public will be engaged through monthly articles on invasive plants in Nepalese newspapers, print and online (facilitated by a former Darwin Scholar who writes environmental articles), and TV and radio. The public need to be aware of inadvertent introduction of invasive plants and discouraged from spreading them.

Case studies from this project will be used to create learning materials and interpretation panels for the children's Biodiversity Education Garden being built by RBGE and DPR in Nepal's National Botanic Garden.

(200 words, maximum 200 words).

20. Capacity building

If your project will support capacity building at institutional or individual levels, please provide details of what form this will take and how this capacity will be secured for the future.

At the grass-roots level capacity will be built so that natural resource dependent people understand the issues of invasive plants, know how to tackle them, and have the skills and experience to restore invaded degraded lands into productive forest and farmland. Local people will also gain capacity (knowledge, practical experience, equipment) to produce bioenergy products for their own use and for market. Capacity building will be at the community group level (CFUGS, women's groups, cooperatives) and community-focused training materials left with these groups. If people leave, capacity within the group will remain and be shared with new recruits. Experience shows that once high-quality biofuels are in production then entrepreneurs wish to invest and more small-scale business are formed.

MSc students and early-career scientists will be involved in the project and taught the theory and practice of inventory research, ecological assessment, plant identification, biodiversity documentation, socio-economic surveys, etc. Many will use this as part of their coursework. From past projects, increased expertise, particularly working with international experts, will give them a boost in pursuing careers in the environmental/conservation/development sectors, and increases Nepal's capacity to better manage its biodiversity.

Plant samples collected will be included in Nepal's national reference collection - the KATH herbarium. These accurately named, data-rich specimens will enrich the collections and increase national capacity for identification and documenting plant species. Lowlands areas of western Nepal are poorly collected, particularly weedy plants, and we expect several new country records, making a significant contribution to future planning. Capacity will be built for rapid image capture to support herbarium digitisation, by providing a professional quality digital SLR camera and training. KATH staff are actively databasing specimens, and imaging is a rate-determining step: the dSLR will increase significantly their capacity to photograph specimens, and will continue this beyond the life of the project.

(300 words, maximum 300 words)

21. Access to project information

Please describe the project's open access plan and detail any specific costs you are seeking from Darwin to fund this.

RBGE and project partners recognise the importance of open access to publicly-funded research, the data generated, reports and publications. We will make these widely and freely available to maximise societal and economic benefits. Following the 'Finch Report' on *Accessibility, sustainability, excellence: how to expand the access to research publication*, and the UK and Scottish Governments' responses to this, we will comply with the recommendations for Open Access.

Whenever possible project outputs, including Plant Profiles, will be bilingual and made freely available in digital format via the project website, usually as PDF download.

Printed publications, at least those published during the project term, will be fully funded and distributed *gratis* to project participants, linked organisations and interested individuals. Funding for this is included as Darwin and matched funding in the budget. All materials produced will be the joint intellectual property of project partners, and they will be able to reprint the materials.

Research articles will be published in peer-reviewed journals, and as book chapters, etc. Open Access publication will be sought wherever possible so that these articles are available at no charge to the user. Fees for Open Access are not included in the budget and would be sought elsewhere if required.

We will use all available avenues to inform the public in the UK and Nepal, including TV, radio, printed and electronic media, so as to raise awareness of the Darwin Initiative, the value of biodiversity and its links to sustainable development and in lifting Nepalese people out of poverty.

(250 words, maximum 250 words).

22. Match funding (co-finance)**a) Secured**

Provide details of all funding successfully levered (and identified in the Budget) towards the costs of the project, including any income from other public bodies, private sponsorship, donations, trusts, fees or trading activity.

Confirmed:

- Tokyo University has agreed to provide £XXX in kind support for herbarium digitisation in the Tokyo Herbarium
- HELVETAS has agreed to provide ca. £XXX in kind support in using its District and community-level network for logistics and communication, and £XXX for printing of the guide book.
- HELVETAS and AEPC have agreed to cover the costs of their staff participating in training activities, total cost estimated as £XXX
- In kind salary costs of the Nepal partner organisations total £XXX.
- In kind salary costs of RBGE staff total £XXX.
- In kind costs for DPR nursery material for replanting £XXX
- University of Tasmania has agreed to provide in kind staff time support for Remote Sensing pilot study £XXX

22b) Unsecured

Provide details of any matched funding where an application has been submitted, or that you intend applying for during the course of the project. This could include matched funding from the private sector, charitable organisations or other public sector schemes.

Date applied for	Donor organisation	Amount	Comments

22c) None

If you are not intending to seek matched funding for this project, please explain why.

(max 100 words)

PROJECT MONITORING AND EVALUATION

MEASURING IMPACT

23. LOGICAL FRAMEWORK

Darwin projects will be required to report against their progress towards their expected outputs and outcomes if funded. This section sets out the expected outputs and outcomes of your project, how you expect to measure progress against these and how we can verify this.

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Impact</p> <p>Reduction and ultimate eradication of invasive plants in forests, farmland and wild habitats in Nepal: improving biosecurity, safeguarding globally significant biodiversity, and improving livelihoods and wellbeing of natural resource-dependent people. (30 words, maximum 30)</p>			
<p>Outcome</p> <p>Increased knowledge, awareness and effective management of invasive plants in Nepal. Safeguarding and restoring biodiversity, creating climate smart alternative sources of bioenergy and soil improvement, and enhancing livelihoods and wellbeing. (30 words, maximum 30)</p> <p>CFUGS = Community-based Forest User Groups</p> <p>VDC = Village Development Committee</p>	<p>0.1 15 CFUGS (representing 750 households/3750 people - of which 2000 are women) in 3 VDCs in 3 districts in Western, Mid-Western and Far Western Development Regions of Nepal (Nawalparasi, Dailekh and Bhajura) engaged in capacity building activities and provided with a clear understanding of invasive plants and climate reliance/adaptation methodologies by Year 1, actively implementing invasive plant management guidelines by Year 2.</p> <p>0.2 30% of invasive species-dominated forest areas (both natural and managed, total area of infested forests in 3 VDCs established in Year 1 baseline survey) restored, with the management of regrowth of native species undertaken, and nursery areas for replanting established or linked with 15 Community Forests and private lands by Year 3.</p> <p>0.3 Establishment of a comprehensive science-based knowledge-base for weed species in Community Forests and</p>	<p>0.1 VDC annual reports, interviews with CFUGS, project reports on workshops, training and invasive plant management guidelines.</p> <p>0.2 VDC annual reports, interviews with CFUGS, photographs, land-use survey project reports.</p> <p>0.3. Fieldwork and weed survey project report, project publications.</p> <p>0.4. Media articles, invasive plant manual, interviews with CFUGS, household socio-economic survey reports.</p> <p>0.5. Household socio-economic survey project reports, interviews with women's groups, women's group records/annual reports.</p> <p>0.6 VDC annual reports, bioenergy project reports.</p> <p>0.7 District Forest Officer annual report verifies progress of change of CFUG</p>	<p>1. The political situation in Nepal remains stable to permit work, and that earthquakes, landslides and other natural disasters present no more than short-term obstacles.</p> <p>Mitigation: Partners are not politically aligned and have been able to work effectively under past regimes. Similarly, partners are experienced in coping with extreme environmental conditions and can schedule work to minimise impact.</p> <p>2. Local communities actively engage with the activities of the project.</p> <p>Mitigation: We will work with local communities within the established MSFP network as trust and effective, two-way communication are already set up and proven successful.</p> <p>3. Local communities recognise the economic, health and environmental benefits from management practices and technologies and decide to adopt them.</p>

	<p>agricultural ecosystems in 3 districts of Nepal, including horizon scanning for potential future invasive plants, by Year 2.</p> <p>0.4 Public awareness raised of the 20 nationally most problematic invasive plants in Nepal; 15 CFUGS capable of identifying all local invasive plants and reporting new plant invaders in their local area; and 750 rural households (disaggregated by gender) empowered with knowledge on uses of invasive plants to improve livelihoods by Year 3.</p> <p>0.5 With reference to Government of Nepal 2011 Census data and Year 1 baseline socio-economic survey data, a 30% increase in the use of alternative bioenergy sources in 750 rural households (disaggregated by gender), and 30% reduction reported in the use of wood as the primary fuel by end of Year 3, and contributing to enhanced wellbeing of household members.</p> <p>0.6 3 local women's groups (including people from ca. 30 households) with enhanced livelihoods by producing and deriving incomes from charcoal densified products (e.g. bio-briquettes, pellets) by end of Year 3.</p> <p>0.7 Low-tech, local biochar manufacture facilities established in 3 VDCs, 15 CFUGS using biochar to increase soil fertility and sequester carbon in restored lands by Year 3.</p>	<p>members livelihoods.</p>	<p>Mitigation: Local communities will be deeply involved in training and information sharing events, promoting engagement and understanding.</p> <p>4. Household members (particularly women) recognise the benefits to themselves and the environment, and are self-motivated to adopt bioenergy and change from traditional fuel sources (wood) to bioenergy alternatives, and using biochar.</p> <p>Mitigation: Heads of households will be engaged and informed on the personal livelihood and wellbeing benefits of switching fuel, in addition to the wider environmental benefits. Partners provide information with engaging audio-visual aids and technology with good coordination.</p> <p>5. Partners involved remain committed to the project.</p> <p>Mitigation: Partners have an excellent track record in collaborative projects, and this will be maintained through regular communication and involvement in monitoring and evaluation.</p> <p>6. The recent fuel crisis in Nepal caused severe transport problems and critical shortages of gas for cooking and heating. A benefit has been the raised awareness for alternative bioenergy sources, demand for bio-briquettes and pellets has far outstripped demand. Furthermore, wood was imported into Kathmandu (under rationing) putting forests under pressure.</p>
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			Mitigation: partners are experienced in working during periods of fuel shortages and adapt workplans to cater for restrictions.
<p>Output 1 Capacity for managing and controlling invasive plants built, practical control methods employed, and restoration of land degraded by invasive plants into economically and environmentally beneficial habitats initiated in 15 CFUGS.</p>	<p>1.1 15 CFUGS in 3 districts of Nepal are engaged in training and provided with management guidelines, training and supervision, and practical guidance in managing and controlling invasive plants by Year 1. Best practices incorporated into CFUGS management plans</p> <p>1.2 15 CFUGS engaged in practical control measures for invasive plants undertaken in 15 Community Forests and private lands by Year 2, and effective management of regrowth/seedlings of invasive plants undertaken by Year 3. Checks on active cultivation of alien species as a bioenergy source undertaken in Years 2 and 3.</p> <p>1.3 Selection and documentation of 15 native, economically and/or environmentally important plants which are suitable for use in restoring degraded habitats (e.g. cleared of invasive plants) by Year 1. Nursery areas established in or existing nurseries linked with 15 CFUGS by Year 3.</p> <p>1.4 15 CFUGS engaged in initiating forest restoration plans, including replanting of native species in 15 areas cleared of invasive plants by Year 3.</p>	<p>1.1 Project workshop reports, guideline documents, CFUGS interviews and management plans.</p> <p>1.2 CFUGS interviews, fieldwork surveys, project reports.</p> <p>1.3 Replanting guidelines project report, Government policy brief.</p> <p>1.4 Interviews with CFUGS and households, photographs, fieldwork surveys, project reports.</p>	Assumptions as above, especially 2 & 3.
<p>Output 2 Weed species researched and evaluated, and local community understanding of invasive plants enhanced. A national list of priority invasive plants established, supported by a bilingual identification manual and</p>	<p>2.1 Science-based inventory of weed species in 3 districts of Nepal completed in Year 2, highlighting known invasive plants and spotlighting potential future problematic species. At least 20 MSc students trained in fieldwork techniques.</p>	<p>2.1 Annotated inventory of weed species project report, fieldwork reports.</p> <p>2.2 Interviews with CFUGS, project workshop reports.</p> <p>2.3 National priority invasive plant report</p>	Assumptions as above, especially 2 & 3.

<p>the raising of public awareness.</p>	<p>2.2 15 CFUGS with enhanced understanding of local invasive plants and skills in identifying new invasive and potentially problematic plants, and CFUG Management Plans updated by Year 3.</p> <p>2.3 Evidence-based national list of 30-40 priority invasive species compiled and documented, and submitted to Government of Nepal to underpin policy decisions by Year 2.</p> <p>2.4 GIS niche modelling of 10 potentially invasive species undertaken, and horizon scanning reported to Government of Nepal by Year 3. Pilot study applying Remote Sensing methodologies to detect <i>Lantana camara</i> and two other invasive species completed by Year 3.</p> <p>2.5. Bilingual identification manual covering the national priority invasive plant species published and 20 monthly newspaper and online popular articles featuring invasive plants published by Year 3.</p> <p>2.6 Project website established in Year 1 and used to give free and open access to project reports and other outputs during the project.</p>	<p>submitted to Government of Nepal.</p> <p>2.4 Invasive plant species horizon scanning project report, research paper submitted to international peer-reviewed journal.</p> <p>2.5 Published identification manual, articles in national newspapers and online (e.g. project website).</p> <p>2.6 Project website.</p>	
<p>Output 3 Charcoal densification technologies (e.g. beehive bio-briquettes and pellets) successfully introduced and densified charcoal products made from invasive plants and other waste biomass. DCPs used as an alternative to fossil fuels and firewood as a domestic fuel source, and small-scale women-run co-operatives derive alternative incomes from bio-</p>	<p>3.1 15 CFUGS and 7 Women's Groups, representing ca. 4000 individuals (at least half of which are women or girls), provided with information resources and engaged in practical training on the species selection and use of invasive plants and other waste biomass (e.g. fallen leaves, newspaper) for producing bio-briquettes/pellets by Year 1</p>	<p>3.1 Interviews with CFUGS and Women's Groups, workshop reports, bioenergy project report.</p> <p>3.2 Interviews with Women's Groups, Women's Group records, photographs, project reports and socio-economic survey.</p> <p>3.3 Household socio-economic survey,</p>	<p>Assumptions as above, especially 2, 3 & 4.</p>

<p>briquettes/pellets.</p>	<p>3.2 30 women from local women's groups recruited for training in bio-briquette/pellet manufacture, at least 3 co-operatives/enterprises set up with employment to 21 people (women/target community), which produce and market ca. 120,000 bio-briquettes/pellets using 45 metric tons of charcoal by Year 3. This represents ca. 45 metric tons generating extra income and enhancing livelihoods of poor communities.</p> <p>3.3 250 rural households (30% increase from 2011 census baseline) adopting bio-briquettes/pellets as at least a partial alternative to fossil fuels and firewood, improving wellbeing by reducing time spent collecting firewood by Year 3.</p>	<p>photographs, project report.</p> <p>3.4 District Forest Officer annual report verifies progress of change of CFUG members livelihoods.</p>	
<p>Output 4 Biochar technologies successfully introduced, biochar manufactured locally and used to improve soil fertility of degraded land and to sequester carbon.</p>	<p>4.1 15 CFUG, representing 750 rural households, provided with information resources and practical training on the species selection and use of invasive plants for producing biochar by Year 1.</p> <p>4.2 Local biochar production facilities, using appropriate low-tech technologies, established and manufacturing biochar in 3 VDCs by Year 2, and making 90 metric tons of biochar by end of Year 3.</p> <p>4.3 15 CFUGS using biochar to increase soil fertility and sequester carbon, and 20% of households using biochar for soil improvement, with estimated increase in crop yields of 20% by end of Year 3 improving livelihoods and income generation potential.</p>	<p>4.1 Interviews with CFUGS, workshop reports, project reports.</p> <p>4.2 VDC annual report, workshop reports, photographs, bioenergy project report.</p> <p>4.3 VDC annual report, photographs, project report.</p>	<p>Assumptions as above, especially 2, 3 & 4.</p>
<p>Activities</p> <p>Output 1. Invasive plants controlled and degraded lands restored</p> <p>1.1 Hold planning and stakeholder workshops, taking a participatory approach to providing training, enhancing the knowledge of local communities and raising awareness on the identification, impact, control and management of invasive plants.</p>			

- 1.2 Work with CBFUGs to undertake effective practical action for the removal and on-going control of invasive plants, with training and support, and assess the impact of this work.
- 1.3 Hold meetings with experts to agree on target species for replanting and work with government and local plant nurseries, and CBFUGs, to undertake replanting of reclaimed lands with native, economically useful plants.
- 1.4 Research, build and disseminate a science-based knowledge resource for invasive plants, and take a participatory approach to incorporating into CBFUG Management Plans the lessons learned in best practice in restoration of lands degraded by invasive plants.

Output 2, Weed species evaluated and communicated

- 2.1 Research, evaluate and publish inventories of the district-level weed flora in the study areas with fieldwork, sample collection and identification, enhancing reference collections, and training and capacity building of MSc students.
- 2.2 Research and evaluate a national list of priority invasive species, and submit a report through Government partners to inform Government of Nepal policy.
- 2.3 Research, develop and publish a photographic identification manual (and other educational materials on a project website), tested by communities, to inform and raise awareness of invasive plants both at a local level with communities and nationally with the general public.
- 2.4 Use the improved species distribution mapping to investigate the likely unrestricted spread of 10 current or potentially invasive plants using GIS niche modelling techniques, and undertake a Remote Sensing pilot study on one high-priority problem species, submitting papers for publication.

Output 3. Bio-briquette technologies successfully implemented

- 3.1 Hold workshops and meetings with community stakeholders to inform and train people in the use of invasive plant biomass, and other waste plant material (e.g. dead leaves, newspaper) to produce bio-briquettes/pellets.
- 3.2 Provide capacity building to local stakeholder groups in the formation of cooperatives for bio-briquette/pellet production, which have the necessary equipment, technological knowledge and practical experience.
- 3.3 Support local cooperatives in the production, distribution, marketing and use of bio-briquettes/pellets as an alternative source of fuel for cooking and heating.
- 3.4 Undertake base line and monitoring socio-economic surveys to assess impact and benefits of introducing bio-briquette/pellet production on livelihoods and well-being, and incorporating best practice into CBFUG Management Plans

Output 4. Biochar technologies successfully implemented

- 4.1 Hold workshops and meetings with community stakeholders to inform and train people in the use of invasive plant biomass, and other waste plant material, to produce biochar.
- 4.2 Provide capacity building and support the establishment of low-tech pyrolysis methods for biochar production and the use of biochar to improve the soil fertility of land reclaimed from invasive weed infestations.
- 4.3 Undertake base line and monitoring surveys to assess the impact and benefits of biochar production and its use in improving soil fertility, restoration of lands cleared of infestations and crop yields, incorporating best practice into CBFUG Management Plans

24. Provide a project implementation timetable that shows the key milestones in project activities. Complete the following table as appropriate to describe the intended workplan for your project (Q1 starting April 2016)

Activity	No of months	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Output 1 Invasive plants controlled and degraded lands restored													
1.1 Hold planning and stakeholder workshops, taking a participatory approach to providing training, enhancing the knowledge of local communities and raising awareness on the identification, impact, control and management of invasive plants.	3												
1.2 Work with CBFUGs to undertake effective practical action for the removal and on-going control of invasive plants, with training and support, and assess the impact of this work.	12												
1.3 Hold meetings with experts to agree on target species for replanting and work with government and local plant nurseries, and CBFUGs, to undertake replanting of reclaimed lands with native, economically useful plants.	16												
1.4 Research, build and disseminate a science-based knowledge resource for invasive plants, and take a participatory approach to incorporating into CBFUG Management Plans the lessons learned in best practice in restoration of lands degraded by invasive plants.	30												
Output 2 Weed species evaluated and communicated													
2.1 Research, evaluate and publish inventories of the district-level weed flora in the study areas with fieldwork, sample collection and identification, enhancing reference collections, and training and capacity building of MSc students.	18												
2.2 Research and evaluate a national list of priority invasive species, and submit a report through Government partners to inform Government of Nepal policy.	10												
2.3 Research, develop and publish a photographic identification manual (and other educational materials on a project website), tested by communities, to inform and raise awareness of invasive plants both at a local level with communities and nationally with the general public	30												

25. Project based monitoring and evaluation (M&E)

Describe, referring to the Indicators above, how the progress of the project will be monitored and evaluated, making reference to who is responsible for the project's M&E. Darwin Initiative projects are expected to be adaptive and you should detail how the monitoring and evaluation will feed into the delivery of the project including its management. M&E is expected to be built into the project and not an 'add' on. It is as important to measure for negative impacts as it is for positive impact.

M&E is an integral part of all the project activities, and will be continuous process through the life of the project. The Logical Framework, detailed Gantt Chart (expanding on 24), detailed task list (giving finer breakdown on Activities and responsibilities) and M&E Outcome Monitoring Frame ('M&E plan') will be used by the Project Management Team (PMT - comprising key representatives from the main partner organisations and implementing partners) to monitor progress towards Milestones, Outputs and Outcome using the Measurable Indicators.

RBGE is responsible for overall M&E project management - an 'adaptive management' approach will be taken. Assumptions and activities identified at project initiation will be reassessed to steer activities to achieve the Outcome. NAST Project Officer will liaise with the RBGE Project Officer on progress, and convene 3-monthly in-country PMT meetings - RBGE participating by Skype/phone. RBGE staff will attend two PMT meetings per year (RBGE PI will attend annually), aligned with 6-month and yearly reporting. PMT meetings will review progress against milestones, learn from experiences, discuss challenges, opportunities and needs of the communities, support detailed planning of project objectives, and agree adjustments and adaptations. Delivery will be improved using satisfaction surveys. Reports of PMT meetings will include narratives on each activity, recording important steps in their development and relevant output indicators. These will be used to reassess activities and targets, and monitor finances. PMT will also monitor progress informally through email/Skype/phone communications to identify and quickly address any changing conditions or arising issues.

Project staff at ForestAction will be responsible for regular evidence collection for M&E, including establishing required baselines. Socio-economic surveys will use standard methods developed by FA, AEPC and HELVETAS. Quantitative and qualitative data will be recorded during fieldwork studies working with individuals and community groups. Project staff will be required and supported to maintain their own meeting records, financial accounts, and analysing feedback, questionnaires, interviews and survey forms which are the means of establishing baselines, verifying outcomes and evaluating impacts.

Socio-economic indicators include: number of households and individuals (disaggregated by gender) participating in training events, the clearance, restoration and replanting of infested land, bioenergy cooperatives, production and marketing of bio-briquettes/pellets, production and use of biochar; number of bioenergy production units established; weight of bio-briquettes/pellets made; weight of biochar made; reduction in use of firewood by households; reduction in time spent collecting firewood; perceived changes in wellbeing and livelihoods; increase in cultivated lands yield using biochar.

Biodiversity conservation indicators include: area of infested land restored and under active management; increased species diversity in restored lands; increase in the availability of NTFPs; number of invasive species fully documented and reported to Government. **The risk of active cultivation of invasive plants for bio-energy sources will be monitored and responded to with enhanced community-based education.**

Project 'influencing' indicators include: number of households and individuals (disaggregated by gender) adopting alternative bioenergy sources for heating and cooking, reducing use of wood; number of CFUGS adopting control and restoration programmes and including them in Management Plans; number of additional bioenergy production units established, or intended to be established, by entrepreneurs and others; distribution of educational manuals; and production of policy supporting documents for GoN.

(500 words, maximum 500 words)

Total budget for M&E	£43,400*
Percentage of total budget set aside for M&E	14.5%

* This is calculated on Darwin-funded staff time spent on M&E activities plus funds supporting M&E work. Matched funding salaries spent on M&E are not included.

FUNDING AND BUDGET

Please complete the separate Excel spreadsheet which provides the Budget for this application. Some of the questions earlier and below refer to the information in this spreadsheet. You should also ensure you have read the 'Finance for Darwin' document and considered the implications of payment points for cashflow purposes.

NB: The Darwin Initiative cannot agree any increase in grants once awarded.

26. Value for Money

Please explain how you worked out your budget and how you will provide value for money through managing a cost effective and efficient project. You should also discuss any significant assumptions you have made when working out your budget.

The required staff time for partners is based on actual time spent on the project as recorded in our detailed activity Gantt Chart. As in current DI-funded projects, RBGE's standard practice is to use Full Economic Costing (FEC), and so 40% FEC for employment costs is included in the budget as overheads. Overheads for partner organisations in Nepal are charged at 15%, as is their standard practice.

Salaries for contracted staff (UK and Nepal) are based on standard government rates appropriate to grade/qualifications. They have been agreed during partner meetings and so consistent with existing staff working on the project. T&S and fieldwork allowances are based on government rates and were agreed during partner meetings.

Exchange rate of £1=155.5NRS was used in budget calculations. This was the effective rate at the time. Salary rises in UK and Nepal is assumed to be 3%pa.

A detailed budget plan has been prepared alongside our Gantt Chart, so that managers have a detailed budget to adhere to. This controls expenditure and provides guidance over unit costs. Due to the fixed number of lines in the DI Excel spreadsheet many budget lines have been amalgamated for the application. Control over budget is exercised by quarterly reports of actual costs against budget and activity progress by project leaders. This provides regular operational and financial reports for monitoring by senior staff.

RBGE, NAST and TU-CDB's procurement policies and procedures ensure that procurement is transparent, follows good practice and achieves value for money. Procurement procedures will be understood by staff and applied consistently by project partners. Principal steps are:

- 1) ensure that goods and services are required before commitment to purchase is made;
- 2) make the best choice to achieve value for money; and
- 3) ensure that whatever is contracted to be purchased is 'fit for purpose'.

(300 words, maximum 300 words)

27. Capital items

If you plan to purchase capital items with Darwin funding, please indicate what you anticipate will happen to the items following project end.

UK

Desktop computer for RBGE Nepalese Project Officer - kept at RBGE and used for visiting scientists/volunteers in the Flora of Nepal office.

Fieldwork equipment - taken out to Nepal and left with project partners for use in future projects.

Nepal

Desktop computers for NAST Project Office and for hot desks in ForestAction; pool of 3 laptops for fieldworkers - given to project partners for use by those engaged in plant biodiversity projects.

Nursery enhancement equipment - donated to nurseries to continue propagating plants for restoration projects.
 Bioenergy manufacture equipment - donated to community groups to continue to produce bioenergy products.
 KATH digitisation camera equipment - donated to KATH to continue herbarium digitisation.
 (113 words, maximum 150 words)

FCO NOTIFICATIONS

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. **None**

Please indicate whether you have contacted your Foreign Ministry or the local embassy or High Commission (or equivalent) directly to discuss security issues (see Guidance Notes) and attach details of any advice you have received from them.

Yes (no written advice) **Yes, advice attached** No

CERTIFICATION

On behalf of the trustees of **Royal Botanic Garden Edinburgh**

I apply for a grant of £ 293,585 in respect of **all expenditure** to be incurred during the lifetime of this project based on the activities and dates specified in the above application.


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.

(This form should be signed by an individual authorised by the applicant institution to submit applications and sign contracts on their behalf.)

- I enclose CVs for key project personnel and letters of support.
- I enclose our most recent signed audited/independently verified accounts and annual reports (if appropriate) - please see the RBGE Website (www.rbge.org.uk)

Name (block capitals)	PROF. PETER HOLLINGSWORTH
Position in the organisation	DIRECTOR OF SCIENCE

Signed**



Date:

1st December 2015

If this section is incomplete or not completed correctly the entire application will be rejected. You must provide a real (not typed) signature. You may include a pdf of the signature page for security reasons if you wish. Please write PDF in the signature section above if you do so.

Stage 2 Application – Checklist for submission

	Check
Have you read the Guidance Notes ?	YES
Have you provided actual start and end dates for your project?	YES
Have you indicated whether you are applying for DFID or Defra funding? NB: you cannot apply for both	YES
Have you provided your budget based on UK government financial years i.e. 1 April – 31 March and in GBP?	YES
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?	YES
Has your application been signed by a suitably authorised individual? (clear electronic or scanned signatures are acceptable)	YES
Have you included a 1 page CV for all the key project personnel identified at Question 10?	YES
Have you included a letter of support from the <u>main</u> partner organisations identified at Question 9?	YES
Have you been in contact with the FCO in the project country/ies and have you included any evidence of this?	YES
Have you included a signed copy of the last 2 years annual report and accounts for the lead organisation?	YES www.rbge.org.uk
Have you checked the Darwin website immediately prior to submission to ensure there are no late updates?	YES

Once you have answered the questions above, please submit the application, not later than 2359 GMT on Tuesday 1 December 2015 to Darwin-Applications@ltsi.co.uk using the application number (from your Stage 1 feedback letter) and the first few words of the project title **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). You are not required to send a hard copy.

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.