



Submit by Monday 2 December 2013

**DARWIN INITIATIVE APPLICATION FOR GRANT FOR ROUND 20: 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.

**ELIGIBILITY**

**1. Name and address of organisation** (NB: Notification of results will be by email to the Project Leader)

|   |  |
|---|--|
| <b>Name of organisation:</b><br>Royal Botanic Gardens,<br>Kew | <b>Address:</b><br>Seed Conservation Department, Wakehurst Place, Ardingly<br>RH17 6TN, UK |
|---|--|

**2. Stage 1 reference and Project title**

(max 10 words)

Ref: 2517: Protecting Ugandan endemic cycads from biodiversity loss and trafficking

**3. Project dates, and budget summary**

|  |                           |                             |                           |                          |
|--|---------------------------|-----------------------------|---------------------------|--------------------------|
| <b>Start date:</b> 01/04/2014  |                           | <b>End date:</b> 31/03/2017 |                           | <b>Duration:</b> 3 years |
| <b>Darwin request</b>  | <b>2014/15</b><br>£62,195 | <b>2015/16</b><br>£54,555   | <b>2016/17</b><br>£75,926 | <b>Total</b><br>£192,676 |
| <b>Proposed (confirmed and unconfirmed) matched funding as percentage of total Project cost: 45%</b> |                           |                             |                           |                          |
| <b>Are you applying for DFID or Defra funding?</b> (Note you cannot apply for both)                  |                           | DFID No                     |                           | Defra Yes                |

**4. Define the outcome of the project. This should be a repetition of Question 24, Outcome Statement.**

(max 30 words)

Knowledge generation and transfer, institutional capacity building and community awareness action reduce threats to Uganda's endangered and endemic cycads

**5. 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.

|   |  |
|---|--|
| <b>Country 1:</b> Uganda (host)           | <b>Country 2:</b> Philippines (recipient of knowledge) |
| <b>Country 3:</b> South Africa (enabling) | <b>Country 4:</b> Thailand (enabling)                  |
| <b>Country 5:</b> China (enabling)        |  |

## 6. Biodiversity Conventions

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

|   |     |
|---|-----|
| Convention On Biological Diversity (CBD)                        | Yes |
| Convention on Migratory Species (CMS)                           | No  |
| Convention on International Trade in Endangered Species (CITES) | Yes |

### 6b. Biodiversity Conventions

Please detail how your project will contribute to the objectives of the convention(s) 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

**(Max 200 words)**

(NB first paragraph moved from Q12) The project assists delivery of Uganda's National Biodiversity Strategy and Action Plan (NBSAP)[2] and implementation of CBD-linked (articles) objectives: a) develop and strengthen co-ordination, measures and frameworks for biodiversity management (6, 8, 9,11); b) facilitate research, biodiversity information management and exchange (7,12, 16, 18); c) reduce and manage negative impacts on biodiversity (8, 9,14); d) promote sustainable use and equitable sharing of costs/benefits of biodiversity (8, 10, 15); e) enhance awareness on biodiversity among stakeholders (13).

There is strong synergy with GSPC (2010-20) and Aichi Biodiversity Targets, particularly the protection of threatened and socio-economically important species (12,13), functioning ecosystems (14, 15) and participation of local communities (18, 19).

Contact is already established with CITES in Uganda and to bodies in the enabling countries, particularly CITES in Thailand and the State Forestry Administration in China (responsible for protected areas and species). UNEP-WCMC in the UK is directly involved in the project. The final workshop will involve faculty from UNEP-WCMC (Dr Alison Rosser) and staff from the CITES Authority of the host country. Moreover, BGCI and the Cycad Specialist Group of IUCN will be advocates for the project through their science policy and communication networks.

**Is any liaison proposed with the CBD/CITES/CMS focal point in the host country?**

**Yes**  **No**      **if yes, please give details:**

Joint Ethnobotanical Research and Advocacy (JERA) in Uganda is in contact with Mr. Francis Meri Sabino Ogwal at Uganda's CBD (NEMA) focal point and Mr Ouna Jimmy at CITES-Flora (under National Forestry Authority).

7. Principals in project. Please identify and 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 personnel or more than one project partner.

| Details                                    | Project Leader    | Project Partner 1 - Main   | Project Partner 2   | Project Partner 3   | Project Partner 4   | Project Partner 5  | Project Partner 6                                     |
|--|-------------------|--|---|---|---|--|---|
| <b>Sur-name</b>                            | Pritchard         | Kamoga   | Agoo  | Donaldson   | Lindstrom   | Li   | Rosser  |
| <b>Fore-name (s)</b>                       | Hugh              | Dennis   | Esperanza Maribel   | John  | Anders  | Nan  | Alison  |
| <b>Post held</b>                           | Head of Research  | Managing Director  | Associate professor in Biology (Also member of Philippine Plant Specialist Group, IUCN-SSC) | Chief Director - Biodiversity Research, Information and Monitoring (Also Chair of Cycad Specialist Group) | Cycad Genebank and Botanical Group Manager (also member of IUCN Cycad Specialist Group)                           | Chief of National Cycad Conservation Centre Shenzhen. (Also president of the Cycad Society of China and member of the IUCN Cycad Specialist Group) | Head of Species Programme                             |
| <b>Institution (if different to above)</b> | As above          | Joint Ethnobotanical Research and Advocacy (JERA), P.O.Box 27901.Kampala, Uganda | De La Salle University, Manila  | SANBI, South Africa   | Nong Nooch Tropical Botanical Garden (NNTBG) 34/1 Sukhumvit Highway, Najomties, Sattahip, Chonburi 20250 Thailand | Fairy Lake Botanical Garden, Lintang, Shenzhen 518004, Guangdong, P.R. China   | UNEP-World Conservation Monitoring Centre (UNEP-WCMC) |
| <b>Department</b>                          | Seed Conservation |  | Biology   |   |   |  |   |
| <b>Telephone</b>                           |                   |  |   |   |   |  | 0   |
| <b>Email</b>                               |                   |  |   |   |   |  |   |

**8. Has your organisation been awarded a Darwin Initiative award before** (for the purposes of this question, being a partner does not count)? **If so, please provide details of the most recent awards (up to 6 examples).** Yes, details as below.

| Reference No | Project Leader       | Title  |
|--------------|----------------------|--|
| 20-020       | Stuart Cable         | Madagascar Agroforestry Livelihoods Project                                      |
| 20-021       | Dr William Milliken  | Forest Futures: livelihoods and sustainable forest management in Bolivian Amazon |
| 17-021       | Dr Kate Hardwick     | Restoring Tropical Forests: a Practical Guide                                    |
| 16-012       | Prof. Hugh Pritchard | Orchid Seed Stores for Sustainable Use (OSSSU)                                   |

**9a. If you answered 'NO' to Question 8 please complete Question 9a, b and c.**

**If you answered 'YES', please go to Question 10** (and delete the boxes for Q9a, 9b and 9c)

**10. 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.**

|  |  |
|--|--|
| <b>Lead institution and website:</b><br><br>Royal Botanic Gardens Kew ( <a href="http://www.kew.org">www.kew.org</a> ) | <b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b><br><br>RBG Kew's mission is 'to inspire and deliver science-based plant conservation worldwide, enhancing the quality of life'. RBG Kew is an international leader in plant conservation science. Kew's role in this project will be through project management (Prof Hugh Pritchard as the PI and Dr Jayanthi Nadarajan as the PM). Technology transfer, dissemination of knowledge, scientific and technical support is offered by Dr Nadarajan (seed biology and storage) and an undergraduate student, and through access to two Kew Honorary Research Associates expertises (Dr Erica Benson and Dr Keith Harding). Dr Nadarajan is currently leading a conservation project on a critically endangered South African cycad species with SANBI (a partner in this project) funded through the Mohamed Bin Zayed Species Conservation Fund. |
|--|--|

|  |  |
|--|--|
| <p><b>Partner Name and website where available:</b></p> <p>Joint Ethnobotanical Research and Advocacy (JERA)</p> | <p><b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b></p> <p>JERA is a conservation organization, working on botanical issues of conservation and development, in the Republic of Uganda. JERA's mission is to build capacity of local communities for sustainable utilization of plant resources. Its aims are; promoting the preservation and development of indigenous knowledge for conservation and sustainable use of plant resources; educating and encouraging local communities to add value to their plant based products; providing a forum for local communities to share experiences and implement programmes that promote sustainable utilization towards economic development; and networking with other institutions/development partners with similar interests.</p> <p>JERA's role in this project is to liaise with the national CBD authority (NEMA) and National CITES authority for their input into this project, and local authorities to obtain permission for field study and collection of seed or pollen. JERA will also increase its capacity by training more staff on specific skills in cycad seed biology, cultivation techniques, storage and micro-chipping. JERA is also responsible for the cascading of knowledge gained on the cultivation techniques of cycads other staff in Uganda and to scientists in the Philippines. JERA will facilitate local market survey on cycads and assist the local communities with their nursery and school programmes.</p> |
| <p><b>Have you included a Letter of Support from this institution?</b></p>                                       | <p>Yes (Letter of Support 1)</p>   |

|   |   |
|---|---|
| <p><b>Partner Name and website where available:</b></p> <p>De La Salle University,<br/>2401 Taft Avenue,<br/>1004 Manila,<br/>Philippines<br/><a href="http://www.dlsu.edu.ph">http://www.dlsu.edu.ph</a></p> | <p><b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b></p> <p>De La Salle University in Manila the Philippines is an internationally recognized Catholic university established by the Brothers of the Christian Schools in 1911. The university is committed to developing a botanic garden for research and education purposes and one of the centerpieces will be a cycad garden.</p> <p>De La Salle University is committed to providing university resources to host visiting scientists from Uganda (and project partners, and needs be) and to accept technology transfer and implement best practice in cycad cultivation and biodiversity conservation.</p> |
| <p><b>Have you included a Letter of Support from this institution?</b></p>  | <p>Yes (Letter of Support 2)</p>  |

|  |   |
|--|---|
| <p><b>Partner Name and website where available:</b></p> <p>Kirstenbosch Botanical Garden, SANBI, South Africa<br/> <a href="http://www.sanbi.org.za">http://www.sanbi.org.za</a></p>   | <p><b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b></p> <p>The South African National Biodiversity Institute (SANBI) leads and coordinates research, and monitors and reports on the state of biodiversity in South Africa. The institute provides knowledge and information, gives planning and policy advice and pilots best-practice management models in partnership with stakeholders. SANBI engages in ecosystem restoration and rehabilitation, leads the human capital development strategy of the sector and manages the National Botanical Gardens as 'windows' to South Africa's biodiversity for enjoyment and education.</p> <p>In this project SANBI will be the main training partner of the host country, Uganda. Through its outlet at Kirstenbosch Botanical Garden, SANBI will share information and experience in cycad cultivation, pollen collection, germination, artificial pollination and micro-chipping. Critically, this garden has an extensive collection of <i>Encephalartos</i> cycads with many species closely related to Ugandan endemic species. This will be used for research and education in a way not possible when dealing with endangered cycads in the wild, as such material can be extremely limited. SANBI will also provide expertise in population structure analysis in relation to habitat (changes or variability) – see Raimondo &amp; Donaldson, 2003 (Biological Conservation 111, 345-358; <a href="http://www.sciencedirect.com/science/article/pii/S0006320702003038">http://www.sciencedirect.com/science/article/pii/S0006320702003038</a>)</p> |
| <p><b>Have you included a Letter of Support from this institution?</b></p>   | <p><i>Letter delayed: to be submitted separately</i></p>  |
| <p><b>Partner Name and website where available:</b></p> <p>Nong Nooch Tropical Botanical Garden (NNTBG)<br/> <a href="http://nongnoochgarden.com/">http://nongnoochgarden.com/</a></p> | <p><b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b></p> <p>Nong Nooch Tropical Botanical Garden has an extensive, world-renowned living collection of cycads. Anders Lindstrom is a world leading cycad taxonomist, a standing member of the IUNC Cycad Specialist Group and adviser to the Thai CITES authorities.</p> <p>NNTBG has agreed to allow access to their plant collection, including the world's most extensive, long term cycad pollen bank, to host two visiting scientists from Uganda for two weeks training and to share cultivation information with the project partners (including for the cultivation compendium).</p>   |
| <p><b>Have you included a Letter of Support from this institution?</b></p>   | <p>Yes (Letter of Support 3)</p>  |

|  |  |
|--|--|
| <p><b>Partner Name and website where available:</b></p> <p>UNEP-WCMC<br/><a href="http://www.unep-wcmc.org/">http://www.unep-wcmc.org/</a></p> | <p><b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b></p> <p>The UNEP World Conservation Monitoring Centre (UNEP-WCMC) is a collaboration between the United Nations Environment Programme, the world's foremost intergovernmental environmental organization, and WCMC, a UK-based charity. UNEP-WCMC is UNEP's specialist biodiversity assessment arm, and the Centre for UNEP's collaboration with WCMC. Its mission is to provide authoritative information about biodiversity and ecosystem services in a manner that is useful to decision-makers who are driving change in environment and development policy.</p> <p>In this project UNEP-WCMC will contribute through its Species Programme with analysis of trade data and information on illegal trade. WCMC will also contribute to the planned annual progress reports and the Ugandan workshop (Year 3) and be involved in Year 1 when the Ugandan project manager visits the UK. WCMC will share knowledge on the requirements of Multilateral Environment Agreements that are relevant to cycad conservation (CBD, CITES, GSPC, Global Taxonomy Initiative) and on programmes of work on forests and other habitats. WCMC will lead (with support from Kew) on providing guidance on CITES requirements for trade, artificial propagation and nursery registration and national reporting of CITES trade data.</p> |
| <p><b>Have you included a Letter of Support from this institution?</b></p>   | <p>Yes (Letter of Support 4)</p>   |

|   |  |
|---|--|
| <p><b>Partner Name and website where available:</b></p> <p>Shenzhen Fairy Lake Botanical Garden, China.<br/><a href="http://www.szbg.org/html/en">http://www.szbg.org/html/en</a></p> | <p><b>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</b></p> <p>Fairy Lake Botanical Garden (FLBG) has built up an extensive living collection of more than 200 cycad species from around the world during the last 23 years.</p> <p>FLBG will host visiting scientists from Uganda for two weeks in Shenzhen for further discussion and training as the project needs. Prof Nan Li is committed to communicate her knowledge on sustainable harvesting and cultivation techniques (including for the cultivation compendium), as well as the techniques of cycad re-introduction to partners of this project. FLBG would benefit from the project by building a wider international cycad network and better nursery and germplasm storage facilities, as well as the knowledge of Uganda cycads through the field survey which will be very helpful to its <i>ex situ</i> conservation of <i>Encephalartos ssp.</i></p> |
| <p><b>Have you included a Letter of Support from this institution?</b></p>  | <p>Yes (Letter of Support 5)</p>   |

|  |  |
|--|--|
| <p><b>11. Have you provided CVs for the senior team including the Project Leader</b></p> | <p>Yes for Pritchard, Nadarajan, Lindstrom, Nan, Kamoga, Agoo and Rosser. J. Donaldson's CV will follow.</p> |
|--|--|



## 12. Problem the project is trying to address

Please describe the problem your project is trying to address. For example, what biodiversity and challenges will the project address? Why are they relevant, for whom? How did you identify these problems?

**(Max 200 words)**

Cycads are the most threatened family of higher plants (40% species) in the world as a result of illegal trade in wild-collected material (>\$100 k global trade in *Encephalartos* sp. seed in 1983-99), over-exploitation locally, habitat degradation and climate change impacts on these dioecious species (for which the risk of pollinator or male / female cone production asynchrony is greatest). Threats to the three Ugandan endemic cycads are particularly high due to lack of national specialist capacity in conservation skills. Safeguarding cycads requires integration of sustainable management with conservation, wild cycad protection, local use and preventing illegal trade. Biodiversity and autecology data (seed/pollen biology yield, growth requirements, pollination) are essential to design evidence-based conservation programmes, including the production of non-detriment findings. The IUCN CSG 'Status Survey and Conservation Action Plan – 2004<sup>[1]</sup> stresses the urgent need for an integration of *in situ* and *ex situ* conservation approaches and for country capacity building and knowledge transfers between regions. A sustainable conservation solution will not be achieved without the involvement of local communities; specifically through better participatory planning, knowledge management and capacity building (Strategic Goal E of the Aichi Biodiversity Targets).

## 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 – repeat from Stage 1 with changes highlighted)**

Institutes have clear roles and responsibilities across work packages (WP), linked to the log frame activities and SMART milestones. The project management team will monitor progress (six-monthly reporting and frequent communications) and regularly test assumptions as the project develops. Outcomes relate to the five WP:

**WP1 – Enhanced biodiversity knowledge:** To overcome knowledge deficiencies, *in situ*-derived ecological data (e.g. phenology, population survey) will be generated for the three endemic (*Encephalartos* sp.) Ugandan cycads through field work. Information on species in cultivation will flow from the enabling partners, e.g. flowering and coning frequency under different environments (as a surrogate of climate change), fresh and stored pollen quality and artificial pollination methods so that *in situ* and *ex situ* siring quality can be compared. Seed quality and germination efficiency will be determined in-country, backed up by UK inputs. This work supports CITES non-detriment findings, addressing population status, distribution, harvesting, pollination, habitat degradation, etc.

**WP2 – Improved monitoring of illegal trade:** Opportunities for the introduction of new methods of safeguarding cycads (e.g., use of microchips and DNA spraying technology for identifying stolen specimens) will be explored with SANBI and tested in Uganda. Trade data on cycad sales and movement will be analysed with the WCMC, and enforcement officers provided with new training CD Rom on CITES and Cycads.

**WP3 (separated out from old WP2) Reduced demand for wild sourced cycads.** The sustainable use of seeds for conservation and for nursery seedling production will be improved through the characterisation of seed germination under environmentally controlled conditions. At least 200-2000 seedlings per species will be produced within the project to support the enhancement of natural stands; surplus seedlings will be sold to the public as a demand reduction strategy to reduce illegal harvesting from natural stands.

<sup>[1]</sup>[www.iucn.org/dbtw-wpd/edocs/2003-010.pdf](http://www.iucn.org/dbtw-wpd/edocs/2003-010.pdf)  
R20 St2 Form



**WP4 – Strengthened capacity and knowledge transfer (previously WP3 and 4):** NNTBG, Thailand and FLBG, China hold unparalleled living cycad collections (>100 species each), and SANBI, RSA grows African species. Two Ugandan scientists will be trained in cultivation techniques when visiting these three countries. Kew scientists will train Ugandan researchers in pollen and seed quality assessments and storage methods (including how to set-up a basic facility). General skills in illegal trade assessment will be gained by working with SANBI, RSA and WCMC, UK (desk-based analysis). Workshop findings and survey reports will be shared, information leaflets produced for three species, papers written and public talks delivered. These information products will connect *in situ* and *ex situ* conservation practitioners as many will be web-based, local communities and the public, conservationists and policy makers (including the IUCN CSG). Best practices in cycad conservation and sustainable use (compendium) will be transferred from Uganda to the Philippines (Year 3), with wider dissemination enabling adoption beyond the project timeframe.

**WP5 – Community involvement:** Two communities will be involved in setting up and running a local nursery to produce thousands of seedlings from seeds legally collected by JERA. Education materials for schools will be produced, based partly on experiences in the nursery and on the species leaflets in Swahili.

#### 14. Change Expected

Detail what the expected changes this work will deliver. You should identify what will change and who will benefit.

- **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. Q19 provides more space for elaboration on this.

(Max 250 words)

The extinction of these known endangered and endemic cycads of Uganda will have been prevented and their conservation status improved, fulfilling the ambition of Target 12 of the Aichi Biodiversity Targets. The specific changes this project will deliver are:

1. **Biodiversity knowledge** – new CITES non-detriment findings (*in situ* population status, plant distributions, population trends, harvesting and global trade) will be of value to policy makers and will set sustainable trade thresholds for the three main target species;
2. **Illegal trade** – the likelihood of trading illegally in Ugandan cycads without being caught will be significantly reduced as a result of the transfer of knowledge on microchipping and DNA spraying technology from RSA to Uganda, and through better awareness of trained enforcement officers in CITES.
3. **Reduced demand for wild cycads** – nursery propagation of three endemic species, and use of seedlings in restoration programmes and for sale to the local community will substantially reduce demand for wild-collected cycads.
4. **Strengthened capacity and knowledge transfer** - greater sharing of cycad conservation and sustainable use information and practice by internationally-significant living collections (in RSA, Thailand and China) results in application of best cultivation practice in Uganda, later transfer and adoption in the Philippines, and better awareness in the global cycad and botanic gardens communities.
5. **Community involvement** - The community role in, and awareness of the importance of, protecting cycads in Uganda will be increased long into the future through their involvement in the nursery and through the schools programme.

**15a. Is this a new initiative or a development of existing work (funded through any source)? Please give details (Max 200 words):**

This is a new initiative as part of Kew's wider ambition to support the *in situ* and *ex situ* conservation of 'exceptional species,' as defined by the 5th Global Botanic Gardens Congress 2013 (New Zealand). 'Exceptional species' are so threatened (Target 12 Aichi) that seed production is limited, are of local socio-economic or cultural value (target 13 Aichi) to the extent that overharvesting is a risk, and have uncharacterised seed biologies, such that conservation (banking) options are not resolved. Endangered cycads of Uganda fit these criteria. Consequently, Kew has started a small programme, through two masters student projects, on understanding the seed biology of a few cycad species and secured modest (but valuable) funding from the Mohamed bin Zayed Conservation Fund to study the reproductive biology of *Encephalartos middelburgensis* in South Africa with SANBI. Thus, Kew and SANBI already have excellent working relations. Studies on this closely related species to *E. whitelockii*, and on *E. altensteinii*, have provided us with great insight of the conservation and sustainable use issues on the ground, including the great threat of illegal trafficking of mature specimens and the need for knowledge transfer and community involvement. We feel well-placed to deliver the project in Uganda.

**15b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work?**  Yes

If yes, please give details explaining similarities and differences, and 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:

A 2-year project on cycad species protection started in South Africa in December 2012 ([http://www.sospecies.org/sos\\_projects/plants/cycads/](http://www.sospecies.org/sos_projects/plants/cycads/)). It aims to: 1) roll out a specialised cycad identification and enforcement skills training programme for law enforcement officials; and 2) deliver a dedicated awareness campaign for judicial system employees that stresses why successful convictions and maximum penalties are essential for effective enforcement in relation to cycad conservation. The project is run by the Endangered Wild Life Trust South Africa and funded by SOS – Save Our Species. The same funder is supporting a 2-year project to May 2015 ([http://www.sospecies.org/sos\\_projects/plants/cycad\\_colombia/](http://www.sospecies.org/sos_projects/plants/cycad_colombia/)) on the establishment of new populations and guaranteed persistence of critically endangered cycads in Colombia, specifically *Zamia disodon*. Its aims are to: 1) locate and rescue individuals assessed at risk from deforestation; 2) try to establish new populations from rescued plants and individuals propagated in botanical gardens and to propose management guidelines to ensure their persistence. This latter project has some overlap with our DI project plans and we will seek to ensure good exchange of information between the two projects. Globally though, the level of project funding for the conservation of cycads is exceedingly limited.

**15c. Are you applying for funding relating to the proposed project from other sources?**  No

If yes, please give brief details including when you expect to hear the result. Please ensure you include the figures requested in the spreadsheet as Unconfirmed funding.

Not at the moment, but applications have been made in the last two years by our collaborator in Uganda for: 'Community Based Conservation of *Encephalartos equatorialis* in Mayuge District, Uganda' (submitted to Save Our Species and to the Prince Bernhard Foundation) and 'Conservation of Cycads' (submitted to Future for Nature). The applications were unsuccessful.

## 16. Value for money

Please describe why you consider your application to be good value for money including justification of why the measures you will adopt will secure value for money?

(Max 250 words)

This is a multi-dimensional project with many unique facets. We will combine the local knowledge of JERA in Uganda, with the extensive knowledge of the Kew staff involved (with 40 person years' plant conservation experience), plus access to and training at institutes that hold the largest *ex situ* collections of cycads (living plants, pollen samples, seeds) in the world (Nong Nooch in Thailand and Fairy Lake in China) and regional collaboration with SANBI in South Africa, who are at the forefront of scientific developments on the DNA tagging of threatened cycads. We also aim to strengthen capacity on the ground at JERA and to support the livelihoods of local communities involved in the project. Although the main capacity building gains will be in Uganda, cycad conservation capacity will also be enhanced in the Philippines, South Africa, Thailand and China. Baseline knowledge will be advanced on at least three species and their conservation status improved. We will produce at least 2000 plants, with a long-term estimated value of US\$ 10 million at maturity (on the basis that a single mature cycad plant can fetch US\$5,000 in the illegal trade), at the same time reducing pressure on wild material. The findings of the project will reach policy makers (through CBD and CITES focal points), a global audience of practitioners (via BGCI network and the IUCN Cycad Specialist Group) and conservation scientists worldwide (as the project's peer-review journal papers will be Open Access).

## 17. Ethics

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

(Max 300 words)

Kew has had a Policy on Access to Genetic Resources and Benefit Sharing since 2001 ([www.kew.org/conservation/index.html](http://www.kew.org/conservation/index.html)) and supports CBD Aichi Biodiversity Targets 16 (access and benefits), 18 (participation of local communities) and 19 (knowledge shared, transferred and applied). All staff going on overseas fieldwork and collecting trips have permission to travel from Kew's Overseas Fieldwork Committee (OFC). This ensures that staff are aware of, and fulfil, CITES and CBD requirements, including all national and local legislation on collecting and exporting genetic resources and associated traditional knowledge. The OFC procedure also covers aspects relating to Health and Safety. Kew has developed peer reviewed guidance for staff on working with traditional knowledge and indigenous peoples so staffs are aware of the latest development in this area. Kew has developed a suite of standard model agreements, letters, clauses and documents for staff to use and develop with collaborating institutes across the world.

Kew was also active, through consultation, during the development of the UK's Concordat to Support Research Integrity (2012), which makes the commitment to 'ensuring research is conducted according to appropriate ethical, legal and professional frameworks, obligations and standards.' It acknowledges that 'there will in many cases be an international dimension to research' (<http://www.universitiesuk.ac.uk/highereducation/Documents/2012/TheConcordatToSupportResearchIntegrity.pdf>). Four other commitments are made: to maintain the highest standards of rigour and integrity in all aspects of research; to support a research environment that is underpinned by a culture of integrity, good governance and best practice; to use transparent, robust and fair processes to deal with allegations of misconduct; and to strengthen the integrity of research and to reviewing progress regularly and openly. Adoption of The Concordat by Kew was approved at Trustee level and it has been implemented (led by applicant Pritchard) across Kew during 2013.

### 18. Legacy

Please describe what you expect will change as a result of this project with regards to biodiversity conservation/sustainable use and poverty alleviation (for DFID funded projects). For example, what will be the long term benefits (particularly for biodiversity and poor people) of the project in the host country or region and have you identified any potential problems to achieving these benefits?

(Max 300 words)

JERA is well placed to ensure the benefits of the project extend into the foreseeable future due to its good working relations with two village communities within which the nursery will be established. The achievement of a fully functional nursery with the potential to produce hundreds of cycad seedlings for sale each year (based on the non-detriment findings of the project) will significantly supplement household incomes. Involving local communities – the custodians of the landscape - and particularly a schools project will ensure a significant long-term improvement in awareness of ‘biodiversity value, functioning, status and trends and the consequences of its loss,’ as a result of knowledge sharing and transfer and application (Aichi Target 19). Such legacy will not be restricted to Ugandan citizens, as JERA staff once trained will cascade theoretical and practical knowledge acquired during the project to staff in the Philippines, a country with a higher GNI per capita than Uganda but a similar percentage of people (c. 25%) at the poverty line ([data.worldbank.org/country](http://data.worldbank.org/country)). One of the study species in Uganda, *E. equitorialis*, is on private land. Permission to access the land has been granted and the project participants have agreed to input autecology / baseline knowledge on the species during an assessment of ecotourism opportunities on the site. This DI project supports Uganda’s BAP and clear lines of communication have been established between JERA and Mr Ogwal at the CBD (NEMA) and Mr Ouna Jimmy at CITES; thus, there is every chance that the evidence base created by this DI project will be a valuable source of information for use in conservation policy development beyond the term of the project.

### 19. Pathway to poverty alleviation

Please describe how your project will benefit poor people living in low-income countries. All projects funded through DFID in Round 20 must be compliant with the OECD Overseas Development Assistance criteria. Projects are therefore required to indicate how they will have a positive impact on poverty alleviation in low-income countries.

(Max 300 words)

Although this submission is made to the Defra part of the DI call, the establishment of a nursery in the villages of Ntarama and Karuhuguma in Kamwenge district, Uganda for the propagation of cycad seedlings will support local community livelihoods through employment and the sale of material. Although modest in scale, the local impact of this part of the DI project, in a country with GNI per capita of \$440 ([data.worldbank.org/country](http://data.worldbank.org/country)), will be felt.

### 20. 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 aims to minimise the long-term risk of staff leaving JERA by training three people; two new staff members, supported through the project, and significantly enhanced capabilities of the project manager at JERA, Dennis Kamoga. In liaising closely with the IUCN Cycad Specialist Group [see letters of support from Patrick Griffith (co-chair), Irene Terry (member) and Javier Francisco-Ortega (member)] and involving John Donaldson of SANBI (chair) and Anders Lindstrom (member) into the project, the project managers have identified an opportunity to integrate Mr Kamoga more in the global cycad scene, thus advancing cycad conservation and propagation in Uganda through a stronger international connection. The Royal Botanic Gardens, Kew already has a memorandum of understanding for biodiversity

conservation with an institute in Uganda, and Kew's commitment to the country will continue into the foreseeable future. Critically the schools programme (Cycads for children) will empower the next generation of conservationists in the country beyond the term of this project. Moreover, the project will use a new (Dec 2013 launch) training pack on 'CITES and Cycads' developed by the Conventions and Policy Section of Kew to support the training of enforcement officers, the benefits of which will extend beyond the project term.

## 21. 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?

(Max 300 words)

All institutes are committed to disseminating the findings widely, including to communities in Uganda. Regular communication with communities will be through JERA, supported by the production of information leaflets on three species, in two languages (English and Swahili). The leaflets will be specifically designed to be of value also to the schools programme (Cycads for Children). Guidance for growers / nurserymen on the practical horticultural science of growing *Encephalartos* plants will be consolidated in a compendium. Trade / law enforcers (CITES, CBD) in Uganda will receive a copy of a CITES and Cycads Manual and Checklist, produced by Kew (available from Dec 2013). The 'authorities' will also be invited to the final project workshop, which will also involve local communities and school children, the project participants and the wider cycad community in southern Africa. All institutes involved in the project have public education programmes. Kew has 1.5 million visitors to its gardens per year, c. 100,000 school children visits and a commitment to giving public lectures (Pritchard addresses public audiences of c. 100 individuals about twice a year, e.g. the University of the Third Age). The other institutions have similar outreach programmes. Progress during the project will reach the wider conservation and botanic gardens community through the writing of articles / news items for the IUCN Cycad Specialist Group, Kew and BGCI websites, and in newsletters. For example, the project will be covered in SAMARA (the newsletter of the Millennium Seed Bank Partnership) and Kew Scientist (which summarises news from Kew's laboratories). The detailed scientific findings of the project will be directed at conservation scientists through the production of two peer-review journal papers. The project will comply with the recommendations of the Finch Report (2012) by publishing these as Open Access.

## 22. 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. (See Section 9 of the Guidance Notes for further information)

(Max 250 words)

Kew has undertaken a detailed review of how to deliver its information products as Open Access in the next few years. Consequently, the project managers have accurate average costs of making this publically-funded research available as Open Access. The cost of releasing one peer-review journal article as Gold Open Access (£1500) had been included in the budget and a commitment made to publish a second paper through this route, through gift-in-kind support from Kew. In this event that this not possible, the article will appear as Green Open Access on the IUCN, Kew or BGCI websites, once the journal embargo period has passed (generally 12 months). In this way the final version of the accepted paper will be available for free across the world (but not as the typeset version to appear in the journal). Species leaflets (mentioned in 21 above), written in English and translated into Swahili, will also be uploaded on to the web, with technical reports. Annual reports will appear on the Defra / DI website too. To reduce costs and to increase availability, the growers' compendium will be uploaded onto the web, enabling the widespread use of colour images to illustrate the propagation steps and to visualise the species, including in natural and *ex situ* settings.

### 23. Importance of subject focus for this project

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.

(Max 250 words)

Only one Darwin Initiative project (Number 163-13-007) seems to have dealt with some aspects of the trade in cycads (and limited to a few species in the genus *Cycas*), focussing on CITES species in Lao PDR: 'A Review of CITES Appendices I and II Plant Species From Lao PDR' by Thomas et al., (2011).

There have been four small projects supported by the Rufford Foundation that have dealt with cycad conservation in some way, although usually as part of a wider range of species: the mapping of threatened gymnosperms in Vietnam that included *Cycas balansae* and *C. hoabinhensis* ([http://www.rufford.org/rsg/projects/cuong\\_nguyen\\_manh\\_0](http://www.rufford.org/rsg/projects/cuong_nguyen_manh_0)); our host country partner (Kamoga) started community cycad work in Uganda ([http://www.rufford.org/rsg/projects/dennis\\_kamoga](http://www.rufford.org/rsg/projects/dennis_kamoga)); a population ecology study in the Tehuacán-Cuicatlán Valley which focussed on *Dioone caputoi* and *Agave potatorum* ([http://www.rufford.org/rsg/projects/d%C3%A1nae\\_cabreratoledo](http://www.rufford.org/rsg/projects/d%C3%A1nae_cabreratoledo)); and an 'Ethnobotany, trade, life history, and population dynamics of endemic *Cycas* species in the Western Ghats of Southern India ([http://www.rufford.org/rsg/projects/vandana\\_krishnamurthy](http://www.rufford.org/rsg/projects/vandana_krishnamurthy)). Each project attracted only a few thousand pounds of funding.

Interrogation of Conservation International's website (<http://www.conservation.org>) pulled up only four references to cycads, of which one is a 2011 project report ('Recent initiatives to develop biocontrol for the Pacific: strategy workshop and weed prioritisation exercise') that includes one cycad example in relation to the establishment of the lady beetle, *Rhizophloeus lophanthae*, for biological control of the Asian cycad scale, *Aulacaspis yasumatsui* in Palau. Finally, a search of the Whitley Fund for Nature website (<http://whitleyaward.org>) pulled up no records for cycads.

We conclude that cycad conservation studies are under funded globally.

### 24. Leverage

#### 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:

**£118,446** [34% total project costs (tpc)] from the Royal Botanic Gardens, Kew towards project management, specialist training and associated overhead.

**£10,000** (3% tpc) from Mohamed Bin Zayed Species Conservation Fund (MBZSCF) to work with South Africa National Biodiversity Institute (SANBI) for conservation of critically endangered *E. middelburgensis* cycad.

**£27,000** (8% tpc) from The other enabling partners will contribute: De La Salle University (DLSU), Manila, Philippines (institutional and staff costs for local survey study and to host visiting scientists from Uganda); Fairy Lake Botanical Garden (FLBG), China (cultivation of a broad range of cycads from seeds) and Nong Nooch Tropical Botanical Garden (NNTBG), Thailand (access to the world's largest cycad pollen store, specialist expertise in pollen handling and cultivation of a broad range of cycads from seeds) and the World Conservation Monitoring Centre (WCMC) (trade data).

**Total = 45% of total project cost**



**b) 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  |
|------------------|--------------------|--------|---|
| As required      | RBG Kew            | £7,500 | Gift-in-kind for UK staffs to combine travel to attend project progress meetings in partner countries |

## PROJECT MONITORING AND EVALUATION

### MEASURING IMPACT

**25. 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. Further detail is provided in Annex C of the guidance notes which you are encouraged to refer to. The information provided here will be transposed into a logframe should your project be successful in gaining funding from the Darwin Initiative. The use of the logframe is sometimes described in terms of the Logical Framework Approach, which is about applying clear, logical thought when seeking to tackle the complex and ever-changing challenges of poverty and need. In other words, it is about sensible planning.

**Impact**

The Impact is not intended to be achieved solely by the project. This is a higher-level situation that the project will contribute towards achieving. All Darwin projects are expected to contribute to poverty alleviation and sustainable use of biodiversity and its products.

(Max 30 words)

Productive cycad biodiversity conservation collaboration between Africa and Asia will support the global delivery of the IUCN CGS 'Status Survey and Conservation Action Plan 2004'

**Outcome**

There can only be one Outcome for the project. The Outcome should identify what will change, and who will benefit. The Outcome should refer to how the project will contribute to reducing poverty and contribute to the sustainable use/conservation of biodiversity and its products. This should be a summary statement derived from the answer given to question 14.

(Max 30 words)

Knowledge generation and transfer, institutional capacity building and community awareness actions reduce threats to Uganda's endangered and endemic cycads

**Measuring outcomes - indicators**

Provide detail of what you will measure to assess your progress towards achieving this outcome. You should also be able to state what the change you expect to achieve as a result of this project i.e. the difference between the existing state and the expected end state. You may require multiple indicators to measure the outcome – if you have more than 3 indicators please just insert a row(s).

|             |  |
|-------------|--|
| Indicator 1 | Three-fold increase in detailed autecology knowledge for endangered <i>Encephalartos</i> cycads (from one to three species) through annual population studies contribute to first available non-detriment findings.  |
| Indicator 2 | Improved assessment of illegal collecting and trade of three Ugandan cycads species by analysing trade data through UNEP-WCMC and via local market surveys of supply and demand, enhanced training of enforcement officers through use a new (Dec 2013 launch) training pack on 'CITES and Cycads' developed by the Conventions and Policy Section of Kew and increased (at least a doubling) regularity of communications with CITES (and CBD) authority. |
| Indicator 3 | Reduced demand for wild sourced cycads by 25 to 67% by producing 200 seedlings of <i>E. equatorialis</i> (67% of wild population size), 300 seedlings of <i>E. macrostrobilus</i> (~25%) and 2000 seedlings of <i>E. whitelockii</i> (~25%) for natural population restoration and to sell to local communities thereby reducing threat to natural populations.  |
| Indicator 4 | Two-fold increase in JERA's capacity (from two to four people) to conserve and sustainably use (cultivate) cycads through training visits supported by IUCN Cycad Specialist Group members and their institutes. Country capacity further strengthened through KT in Uganda and to the Philippines and wider community through new compendium on cultivation, scientific and technical publications, talks, and other communications.                      |
| Indicator 5 | Two-fold increase in awareness of the importance of biodiversity and local community involvement in cycad conservation and sustainable use (from two to four villages and 40 to 80 people) directly through the setting up of a community plant nursery, and supported by outreach to 70% of children in Rwenshama primary school (i.e. 350 out of 500).   |

### Verifying outcomes

Identify the source material the Darwin Initiative (and you) can use to verify the indicators provided. These are generally recorded details such as publications, surveys, project notes, reports, tapes, videos etc.

|             |  |
|-------------|--|
| Indicator 1 | <ul style="list-style-type: none"> <li>• Annual field study reports including population size, distribution, phenology and meteorological data;</li> <li>• A report on population trend analysis using 'Elasticity Analysis' (Raimondo &amp; Donaldson, 2003);</li> <li>• Annual reports on closely related <i>Encephalartos</i> sp reproduction cycle from partners managing <i>ex situ</i> collections.</li> </ul>   |
| Indicator 2 | <ul style="list-style-type: none"> <li>• Annual trade figure on Ugandan cycads by UNEP-WCMC;</li> <li>• Reports of local cycad market surveys on supply and demand;</li> <li>• Records of training of Ugandan enforcement officers using the 'CITES and Cycads' training CD Rom</li> <li>• Annual project reports to CITES (and CBD) authorities to facilitate them in the production of annual country reports;</li> <li>• An inventory of micro-chipped cycads in the natural population.</li> </ul> |
| Indicator 3 | <ul style="list-style-type: none"> <li>• Photographic evidence of replanted population;</li> <li>• Records of seedling sales from nursery;</li> <li>• Trade data report showing decline in sale figure for wild-sourced cycads.</li> </ul>   |

|             |   |
|-------------|---|
| Indicator 4 | <ul style="list-style-type: none"> <li>• Assessment questionnaires (pre- and post-training) of learning outcomes and implementation of two Ugandan staff;</li> <li>• Two open access co-authored peer-reviewed papers on endangered cycad autecology / reproductive biology / population trends;</li> <li>• e-Compendium volume of <i>Encephalartos</i> cultivation;</li> <li>• Information leaflets on at least three species in English and Swahili;</li> <li>• Conference records (e.g. abstracts) of talks given, web articles on BGCI, IUCN sites, annual reports, etc.</li> <li>• Report on value of compendium during cascade training in Philippines</li> </ul> |
| Indicator 5 | <ul style="list-style-type: none"> <li>• Photographic evidence of community nursery establishment;</li> <li>• Audit of nursery set up for functionality and security.</li> <li>• Report on 'Cycads for Children' school programme and stories written by children.</li> </ul>   |

### Outcome risks and important assumptions

You will need to define the important assumptions, which are critical to the realisation of the *outcome and impact* of the project. It is important at this stage to ensure that these assumptions can be monitored since if these assumptions change, it may prevent you from achieving your expected outcome. If there are more than 3 assumptions please insert a row(s).

|              |  |
|--------------|--|
| Assumption 1 | Natural disasters do not severely affect the natural population causing reduced availability of plants, seeds and pollen for conservation and sustainable use actions. |
| Assumption 2 | Political conflicts and socioeconomic crises do not accelerate threats to natural populations and reduce access to lands.  |
| Assumption 3 | All international partners and their institutes remain committed to the delivery of the project goals, good governance remains in place and staff changes are minimal. |

### Outputs

Outputs are the specific, direct deliverables of the project. These will provide the conditions necessary to achieve the Outcome. The logic of the chain from Output to Outcome therefore needs to be clear. If you have more than 3 outputs insert a row(s). It is advised to have less than 6 outputs since this level of detail can be provided at the activity level.

|                 |   |
|-----------------|---|
| <b>Output 1</b> | Increased biodiversity knowledge and non-detriment findings on Ugandan endemic and endangered cycads                      |
| <b>Output 2</b> | Improved monitoring and assessment of cycad trade in (and out of) Uganda  |
| <b>Output 3</b> | Significantly reduced demand for wild sourced cycads  |
| <b>Output 4</b> | Strengthened knowledge and capacity of Ugandan staff and the cycad community involved in conservation and sustainable use |
| <b>Output 5</b> | Community cycad projects (plant nursery and schools programme) established in Uganda                                      |

### Measuring outputs

Provide detail of what you will measure to assess your progress towards achieving these outputs. You should also be able to state what the change you expect to achieve as a result of this project i.e. the difference between the existing state and the expected end state. You may require multiple indicators to measure each output – if you have more than 3 indicators please just insert a row(s).

| Output 1    |  |
|-------------|--|
| Indicator 1 | Six bi-annual field study reports over 3 years (from NIL) generating baseline data on autecology and reproductive biology for <i>E. equatorialis</i> , <i>E. macrostrobilus</i> and <i>E. whitelockii</i> . (Years 1- 3)                     |
| Indicator 2 | Enhanced knowledge on population trends and habitat degradation assessed for three species (from NIL) through completion of an 'Elasticity Analysis'. (Y3)   |
| Indicator 3 | Biodiversity data on c. 20 other closely related <i>Encephalartos</i> sp. enhanced through inputs of historical / current information from world-leading <i>ex situ</i> collections at SANBI (RSA), FLBG (China) and NNTBG (Thailand) (Y1-3) |

| Output 2    |   |
|-------------|---|
| Indicator 1 | 50% of the wild populations of three species micro-chipped by end Y3  |
| Indicator 2 | New and updated data from DI project report(s) delivered to CITES and CBD authorities (Y1-3) to support their production of country annual reports.                                 |
| Indicator 3 | Enhanced enforcement training of at least five Ugandan officers through use of a new training pack on 'CITES and Cycads' (Y3)   |
| Indicator 4 | Increased evidence-base data on (over)exploitation of a minimum of three Ugandan endemic and endangered cycads through world trade data (UNEP-WCMC) and local market survey. (Y1-3) |

| Output 3    |   |
|-------------|---|
| Indicator 1 | Production of ~2,500 nursery seedling for all three species through local community nursery project in the villages of Ntarama and Karuhuguma. (Y2-3) |
| Indicator 2 | 10% increment in natural population sizes in three sites through replanting of nursery-raised plantlets (Y3)  |
| Indicator 3 | 50% reduction in demand for wild sourced cycad material (seed, seedling) through sale of nursery-raised plants (Y3)                                   |
| Indicator 4 | Decline in international trade on Ugandan wild sourced cycads (Y3)  |

| Output 4    |  |
|-------------|--|
| Indicator 1 | Two full time Ugandan scientist/horticultural staffs trained by end Y1.  |
| Indicator 2 | Project workshop in Uganda at the end of Y3 to share knowledge with the wider cycad community and to celebrate success of the project with local community and children. |
| Indicator 3 | Cascade training by Ugandan scientist to Philippine scientists/ horticulturists (Y3), increasing local cycad conservation knowledge from 5 to 20 staff                   |
| Indicator 4 | Value of Ugandan endemic cycad biodiversity in local and global  |

|  |  |
|--|--|
|  | conservation action communicated to wider cycad conservation community, local government, local communities, schools through scientific publications, talks, guidelines on best practise and cascade training. (Y2, 3) |
|--|--|

| Output 5    |   |
|-------------|---|
| Indicator 1 | Number of local communities involved in cycad conservation project increased from two to four by end Y3   |
| Indicator 2 | Number of people to be directly employed to work part-time in the new nursery project increased from 0 to 40 (Y2, 3)  |
| Indicator 3 | Educational programme 'Cycads for Children' included in school activities to promote understanding of the value of cycad biodiversity and its conservation (Y2,3) |

### Verifying outputs

Identify the source material the Darwin Initiative (and you) can use to verify the indicators provided. These are generally recorded details such as publications, surveys, project notes, reports, tapes, videos etc.

|                           |   |
|---------------------------|---|
| Indicator 1<br>(Output 1) | <ul style="list-style-type: none"> <li>1.1. Records of field training/work attendance by participating partners</li> <li>1.2. Autecology and reproductive biology data for <i>E. equatorialis</i>, <i>E. macrostrobilus</i> and <i>E. whitelockii</i> submitted with Annual and Final Report.</li> <li>1.3. Population trend of the above three cycads written up as a manuscript for scientific journal. A copy sent with Final Report.</li> <li>1.4. Baseline data on other closely related <i>Encephalartos</i> sp from SANBI (RSA), FLBG (China) and NNTBG (Thailand) <i>ex situ</i> collections submitted with Annual and Final Report.</li> <li>1.5. e-Compendium on <i>Encephalartos</i> cultivation and conservation biology compiled and available online, and printout submitted with the Final Report.</li> </ul>                                      |
| Indicator 2<br>(Output 2) | <ul style="list-style-type: none"> <li>2.1. Training record of micro-chipping by SANBI partner to JERA staffs</li> <li>2.2. Identification and documentation of mature cycad plants in the wild for potential micro-chipping by Y2.</li> <li>2.3. Inventory of micro-chipped cycad plants in the natural population compiled and sent with Annual Report.</li> <li>2.4. Project reports submitted to Ugandan CITES and CBD focal points to support their annual country reporting.</li> <li>2.5. Records of training of Ugandan enforcement officers using the 'CITES and Cycads' training CD Rom</li> <li>2.6. Annual trade figures of Ugandan Endemic cycads compiled by UNEP WCMC and submitted in Annual and Final Reports.</li> <li>2.7. Local market survey on supply and demand of cycads compiled and submitted with Annual and Final Reports.</li> </ul> |
| Indicator 3<br>(Output 3) | <ul style="list-style-type: none"> <li>3.1. Project proposal on community nursery which includes establishment, appointment of staffs, training, maintenance of plants, replanting programme drafted by end of Y1.</li> <li>3.2. Records of seed collection trips to the natural population as the source material for nursery</li> <li>3.3. Records of seed germination and seedling establishment</li> <li>3.4. Records of seedlings replanted in the natural population</li> </ul>   |

|                           |  |
|---------------------------|--|
|                           | <p>3.5. Records of surplus seeds, seedlings, leaves and etc. sold to local communities and other interested parties (e.g. local municipalities)</p> <p>3.6. Records of other plants co-planted and sold in the nursery as an incentive for local communities</p> <p>3.7. Audit of nursery set up for functionality and security.</p> <p>3.8. Records of international trade on Ugandan cycads provided by UNEP-WCMC</p>  |
| Indicator 4<br>(Output 4) | <p>4.1. Short-term scientific mission training reports in China, Thailand and the UK for Ugandan partners by end of Y1.</p> <p>4.2. Training records (post-training assessment questionnaire) of staffs in pollen, seed storage biology, artificial pollination and seed germination; institutional record on the establishment of a basic seed storage facility at JERA.</p> <p>4.3. Programme of the project workshop in Y3 to be submitted with the Final Report.</p> <p>4.5. Reports on cascade training by Ugandan scientist to Philippine scientists/ horticulturists (Y3).</p> <p>4.6. Information / technical leaflets produced for three species in two languages (English and Swahili) to be distributed, uploaded onto the web and submitted with the Final Report.</p> <p>4.8. Journal volume, page numbers (and Open Access location) of two peer-reviewed papers. Copies of papers to be sent with the Final Report.</p> <p>4.9. Value of Ugandan endemic cycad biodiversity in local and global conservation action communicated to wider communities, local government, local communities and schools through, talks, interviews, media, local workshop, school programme.</p> |
| Indicator 5<br>(Output 5) | <p>5.1. Surveys on pre-project awareness, cultural impact, commitment in two local communities/leaders in the villages of Ntarama and Karuhuguma, Rwenshama primary school in Kamwenge district and local authorities sent with Y1 Annual Report.</p> <p>5.2. Signed agreement between local community leader, local authority and other parties involved for local community nursery project sent with 1<sup>st</sup> year Annual Report.</p> <p>5.3. Record number of people directly employed to work in the nursery project</p> <p>5.4. Community group annual record on activities sent with Annual Report</p> <p>5.4. Educational materials and school programme schedule included in Final Report; and children's stories on cycads available on web</p>  |

### Output risks and important assumptions

You will need to define the important assumptions, which are critical to the realisation of the achievement of your outputs. It is important at this stage to ensure that these assumptions can be monitored since if these assumptions change, it may prevent you from achieving your expected outcome. If there are more than 3 assumptions please insert a row(s).

|              |   |
|--------------|---|
| Assumption 1 | <ol style="list-style-type: none"> <li>1. Natural disasters do not reduce access to natural populations and impact on field studies; and there is no catastrophic fall in pollinators or change in male/female cone production synchrony leading to no seed production.</li> <li>2. Enabling partners remain committed to providing complementary data on reproductive biology of <i>Encephalartos</i> cycads in ex situ collections. Risk minimised by having three enabling partners (SANBI, Nong Nooch Tropical Botanical Garden and Fairy Lake Botanical Garden) who both have extensive cycad collections of mature plants.</li> </ol> |
|--------------|---|



|              |   |
|--------------|---|
| Assumption 2 | <ol style="list-style-type: none"> <li>1. Micro-chip (and DNA spray) technology is transferable and can be reliably used on a range of species.</li> <li>2. CITES reports produced by countries importing cycads from Uganda are presented annually and accurately to enable valid trade data analysis. Risk minimised by cross referencing details of import and export country reports.</li> </ol>  |
| Assumption 3 | <ol style="list-style-type: none"> <li>1. Natural seed production is not too low for seed collection, thus hindering cultivation. Risk minimised by securing seed access from <i>ex situ</i> collections at enabling partners (SANBI, Nong Nooch Tropical Botanical Garden, Fairy Lake Botanical Garden).</li> <li>2. Nursery plots not lost due to changes in land ownership. Risk minimised by identifying alternative site for back-up nursery.</li> </ol> |
| Assumption 4 | <ol style="list-style-type: none"> <li>1. No insurmountable challenges in securing visas for JERA staff to train in other countries. Risk minimised through early applications for visas.</li> <li>2. Essential, trained staffs leave the project. Risk minimised by training two scientists and followed by cascade training in Uganda.</li> </ol>   |
| Assumption 5 | <ol style="list-style-type: none"> <li>1. Communities remain committed to cycad conservation efforts. Risk minimised by carefully selecting the communities that JERA has previous experience of collaborating with.</li> </ol>   |

### Activities

Define the tasks to be undertaken by the research team to produce the outputs. Activities should be designed in a way that their completion should be sufficient and indicators should not be necessary. Risks and assumptions should also be taken into account during project design.

- MOU written and signed between all partners
- Project initiation meeting with partners to define strategy for collaboration, agreement on monitoring and evaluation programme and to review all risks and assumptions

| <b>Output 1</b>   |  |
|---|--|
| <b>Increased biodiversity knowledge for non-detriment findings on Ugandan endemic and endangered cycads</b> |  |
| Activity 1.1  | Establish agreement with local authorities for field study and seed/pollen collecting permission   |
| Activity 1.2  | Conduct field study to evaluate population size, distribution, phenology and meteorological data of <i>E. equatorialis</i> , <i>E. macrostrobilus</i> and <i>E. whitelockii</i> .                  |
| Activity 1.3  | Undertake 'Elasticity Analysis' on the population data to simulate population trends   |
| Activity 1.4  | Collect reproductive biology data for other closely related <i>Encephalartos</i> sp from SANBI, Nong Nooch Tropical Botanical Garden and Fairy Lake Botanical Gardens' <i>ex situ</i> collections. |
| Activity 1.5  | Write two peer-reviewed papers (on population trends of Ugandan cycads and another on cycad pollen and seed biology)   |
| Activity 1.6  | Write an e-compendium volume of <i>Encephalartos</i> biology and cultivation   |

| <b>Output 2</b>  |  |
|--|--|
| <b>Improved monitoring of cycad trade in and out of Uganda</b> |  |

|              |   |
|--------------|---|
| Activity 2.1 | Ugandan scientists trained by SANBI partner in micro-chipping cycads by end of Y1   |
| Activity 2.2 | Matured plants identified in the natural population for micro-chipping by middle of Y2  |
| Activity 2.3 | Identified matured plants micro-chipped by end of Y2  |
| Activity 2.4 | Submit project report (annually) to CITES and CBD focal points before their annual report is due  |
| Activity 2.5 | Training of Ugandan enforcement officers using the 'CITES and Cycads' training CD Rom.  |
| Activity 2.6 | Collate trade data for <i>E. equatorialis</i> , <i>E. macrostrobilus</i> and <i>E. whitelockii</i> to understand the demand and supply chain. |

| <b>Output 3</b><br><b>Reduced demand for wild sourced cycads</b> |   |
|--|---|
| Activity 3.1   | Conduct market survey at four local market towns (Fort portal, Ibanda, Kasese and Mbarara)                        |
| Activity 3.2   | Suitable plot for nursery agreed between JERA and the local communities in the villages of Ntarama and Karuhuguma |
| Activity 3.3   | Collect (and receive) seed and set up germination trial in the nursery  |
| Activity 3.4   | Seedlings replanted in the natural habitat in Y2 and monitored into Y3  |
| Activity 3.5   | Sell surplus seedlings from nursery to local community (mainly Y3)  |

| <b>Output 4</b><br><b>Strengthened capacity of Ugandan scientist and horticultural staffs in cycad cultivation and knowledge transfer</b> |   |
|---|---|
| Activity 4.1  | Train two Ugandan scientist/horticulturalist through a short term scientific missions in NNTBG, FLBG and the UK for 6 weeks                           |
| Activity 4.2  | In house (and cascade) training of other members of staff at JERA and (>50) students of Makerere University   |
| Activity 4.3  | Organise a project workshop in Uganda by end of Y3  |
| Activity 4.4  | Cascade training on cultivation of cycads to around 20 staffs of De La Salle University, Philippines as they develop an institutional botanic garden. |
| Activity 4.5  | Ongoing training and progress meeting between JERA project manager and S. African partner (SANBI) once every 6 months.                                |
| Activity 4.6  | Write and distribute information leaflets on at least three cycad species, in English and Swahili.  |
| Activity 4.7  | Present findings in scientific conference (Y2, 3), at final workshop (Y3) and public talks (Y1-3).  |

| <b>Output 5</b><br><b>Community cycad projects established in Uganda</b> |  |
|--|--|
| Activity 5.1   | Consultation with two communities (villages of Ntarama and Karuhuguma), including primary school teachers, on awareness of conservation and sustainable use issues |
| Activity 5.2   | Draft agreement between JERA and two local communities on rota for part-time work in nursery   |
| Activity 5.3   | Appoint local community nursery project manager to oversee activity and progress   |
| Activity 5.4   | Training of local people in cycad seed collection and cultivation  |
| Activity 5.5   | Develop and delivery of 'Cycads for Children' school programme   |

26. 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.

| Activity  | No of Months | Year 1 |    |    |    | Year 2 |    |    |    | Year 3 |    |    |    |
|---|--------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
|   |              | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 |
| <ul style="list-style-type: none"> <li>MOU written and signed between all partners</li> </ul>   | 3            |        |    |    |    |        |    |    |    |        |    |    |    |
| <ul style="list-style-type: none"> <li>Project initiation meeting with partners</li> </ul>  | ½            |        |    |    |    |        |    |    |    |        |    |    |    |
| <b>Output 1 Increased biodiversity knowledge for non-detriment findings on Ugandan endemic and endangered cycads</b>  |              |        |    |    |    |        |    |    |    |        |    |    |    |
| 1.1 Establish agreement with local authorities for field study and seed/pollen collecting permission  | 1            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Meeting with local authorities to establish partnership   |              | X      |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Written permission granted by local authorities   |              | X      |    |    |    |        |    |    |    |        |    |    |    |
| 1.2 Conduct field study to evaluate population size, distribution, phenology and meteorological data of <i>E. equatorialis</i> , <i>E. macrostrobilus</i> and <i>E. whitelockii</i> .           | 30           |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Field visits undertaken / completed (annual)  |              |        | X  | X  |    |        | X  | X  |    |        | X  | X  |    |
| Key milestones: Data compiled on distribution, phenology and meteorology  |              |        |    | X  |    |        |    | X  |    |        |    | X  |    |
| Key milestones: Compiled data summarised and fed into 1.5   |              |        |    |    |    |        |    |    | X  |        |    |    | X  |
| 1.3 Undertake 'Elasticity Analysis' on the population data to simulate population trends.   | 6            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Population elasticity data analysis completed and fed into 1.5  |              |        |    |    |    |        |    |    |    |        |    | X  |    |
| 1.4 Collect reproductive biology data for other closely related <i>Encephalartos</i> sp from Nong Nooch Tropical Botanical Garden and Fairy Lake Botanical Gardens' <i>ex situ</i> collections. | 30           |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Phenological data collected and compiled by enabling partners (annually)  |              |        |    | X  |    |        |    | X  |    |        |    | X  |    |
| 1.5 Write one peer-reviewed paper on population trends of Ugandan cycads and another on cycad pollen and seed biology   | 6            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Manuscript written on population trend of Ugandan cycads based on the outcome of the elasticity analysis and submitted for publication  |              |        |    |    |    |        |    |    |    |        |    |    | X  |

| Activity   | No of Months | Year 1 |    |    |    | Year 2 |    |    |    | Year 3 |    |    |    |
|--|--------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
|  |              | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 |
| Manuscript written on pollen, seeds and reproduction biology of Ugandan cycads and submitted for publication                                     |              |        |    |    |    |        |    |    | X  |        |    |    |    |
| 1.6 Write an e-compedium volume of <i>Encephalartos</i> biology and cultivation  | 15           |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: E-compedium completed and becomes live on web  |              |        |    |    |    |        |    |    |    |        | X  |    |    |
| <b>Output 2 Improved monitoring of cycad trade in and out of Uganda</b>  |              |        |    |    |    |        |    |    |    |        |    |    |    |
| 2.1 Ugandan scientists trained by SANBI partner in micro-chipping cycads by end of Y1  | 3            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Report on training in micro-chipping cycads completed  |              |        |    |    | X  |        |    |    |    |        |    |    |    |
| 2.2 Matured plants identified in the natural population for micro-chipping by middle of Y2   | 9            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: A location map of identified cycads  |              |        |    |    |    | X      |    |    |    |        |    |    |    |
| 2.3 Identified matured plants micro-chipped by end of Y2   | 6            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Assessment made of microchip reading in the field  |              |        |    |    |    |        | X  |    |    |        |    | X  |    |
| 2.4 Submit project report (annually) to CITES and CBD focal points before their annual report is due   | 3            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Project report submitted to CITES and CBD focal points   |              |        |    |    | X  |        |    |    | X  |        |    |    | X  |
| 2.5 Training of Ugandan enforcement officers using the 'CITES and Cycads' training CD Rom.   | 1            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Report on training for enforcement officers completed  |              |        |    |    |    |        |    |    |    |        |    | X  |    |
| 2.6 Collate trade data for <i>E. equatorialis</i> , <i>E. macrostrobilus</i> and <i>E. whitelockii</i> to understand the demand and supply chain | 3            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Annual Trade data analysed and summarised into reports   |              |        |    |    | X  |        |    |    | X  |        |    |    | X  |
| <b>Output 3 Reduced demand for wild sourced cycads</b>   |              |        |    |    |    |        |    |    |    |        |    |    |    |
| 3.1 Conduct market survey at four local market towns (Fort Portal, Ibanda, Kasese and Mbarara)   | 3            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Annual market survey data analysed and summarised into reports   |              |        | X  |    |    |        |    | X  |    |        |    | X  |    |
| 3.2 Suitable plot for nursery agreed between JERA and the local  | 6            |        |    |    |    |        |    |    |    |        |    |    |    |

| Activity   | No of Months | Year 1 |    |    |    | Year 2 |    |    |    | Year 3 |    |    |    |
|--|--------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
|  |              | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 |
| communities in the villages of Ntarama and Karuhuguma<br>Key milestones: Nursery plot established<br>Staffs recruited for the operational tasks  |              |        |    | X  |    |        |    |    |    |        |    |    |    |
| 3.3 Collect (and receive) seed and set up germination trials in the nursery<br>Key milestones: Annual analysis of collected germination data<br>Nursery holdings of seedlings reaches 1000 plants  | 33           |        | X  |    |    |        |    |    |    |        |    |    |    |
| 3.4 Seedlings replanted in the natural habitat in Y2 and monitored into Y3<br>Key milestones: Reintroduction of seedlings into the natural population completed<br>Monitoring report completed on seedling establishment and survival                | 9            |        |    |    |    |        |    |    |    |        |    |    |    |
| 3.5 Sell surplus seedlings from nursery to local community (mainly Y3)<br>Key milestones: Audit of sale record completed   | 15           |        |    |    |    |        |    |    |    |        |    |    | X  |
| <b>Output 4 Strengthened capacity of Ugandan scientist and horticultural staffs in cycad cultivation and knowledge transfer</b>  |              |        |    |    |    |        |    |    |    |        |    |    |    |
| 4.1 Train two Ugandan scientist/horticulturalist through a short term scientific missions in NNTBG and FLBG and the UK for 6 weeks<br>Key milestones: Report on training visits<br>Evidence of implementation of training at JERA and in the nursery | 2            |        |    |    |    |        |    |    |    |        |    |    |    |
| 4.2 In house training of other members of staff at JERA and students of Makerere University<br>Key milestones: Feedback questionnaire from trainees analysed (annual)  | 33           |        |    |    |    |        |    |    |    |        |    |    |    |
| 4.3 Organise a project workshop in Uganda by end of Y3<br>Key milestones: Workshop report available  | 3            |        |    |    |    |        |    |    |    |        |    |    | X  |
| 4.4 Cascade training on cultivation of cycads to around 20 staffs of De La Salle University, Philippines.  | 1            |        |    |    |    |        |    |    |    |        |    |    |    |



| Activity   | No of Months | Year 1 |    |    |    | Year 2 |    |    |    | Year 3 |    |    |    |
|--|--------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
|  |              | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 |
| Key milestones: Feedback questionnaire from trainees analysed  |              |        |    |    |    |        |    |    |    |        | X  |    |    |
| 4.5 Ongoing training and progress meeting between JERA project manager and S. African partner (SANBI) once every 6 months.   | 33           |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Annual progress report   |              |        |    |    | X  |        |    |    | X  |        |    |    | X  |
| 4.6 Write and distribute information leaflets on a least three cycad species, in English and Swahili.  | 9            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Approval of leaflet contents by community and teachers<br>Species information leaflets translated from English to Swahili, published and distributed               |              |        |    |    |    | X      |    | X  |    |        |    |    |    |
| 4.7 Present findings in scientific conference (Y2, 3), at final workshop (Y3) and public talks (Y1-3).   | 2            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Finding presented in scientific conferences<br>Public talks given<br>Project findings disseminated at the final workshop   |              |        | X  |    |    | X      | X  |    |    | X      | X  | X  | X  |
| <b>Output 5 Community cycad projects established in Uganda</b>   |              |        |    |    |    |        |    |    |    |        |    |    |    |
| 5.1 Consultation with two communities (villages of Ntarama and Karuhuguma), including primary school teachers, on (change of) awareness of conservation and sustainable use issues | 1            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Design, use and analyse questionnaire  |              |        | X  |    |    |        |    | X  |    |        |    |    | X  |
| 5.2 Draft agreement between JERA and two local communities on rota for part-time work in nursery<br>Agreement in place for local community project                                 | 3            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Nursery manager appointed or managers if shared role between communities   |              |        | X  |    |    |        |    |    |    |        |    |    |    |
| 5.4 Training of local people in cycad seed collection and cultivation  | 6            |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: 40 people from two local communities trained and needs assessment reviewed   |              |        |    |    |    | X      |    |    |    |        |    |    |    |

| Activity   | No of Months | Year 1 |    |    |    | Year 2 |    |    |    | Year 3 |    |    |    |
|--|--------------|--------|----|----|----|--------|----|----|----|--------|----|----|----|
|  |              | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 | Q1     | Q2 | Q3 | Q4 |
| Success of the programme evaluated by end Y3   |              |        |    |    |    |        |    |    |    |        |    |    | X  |
| 5.5 Develop and delivery of 'Cycads for Children' school programme                   | 24           |        |    |    |    |        |    |    |    |        |    |    |    |
| Key milestones: Educational materials complete and incorporated in school activities |              |        |    | X  |    |        |    |    |    |        |    |    |    |
| Success of the programme evaluated by end Y3   |              |        |    |    |    |        |    |    |    |        |    |    | X  |

## 27. 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 projects 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.

(Max 500 words)

The project will be subject to Kew's established project monitoring, evaluation and financial accounting protocols and SMART indicators and milestones within the logical framework will provide the principal basis for project-level monitoring. The Darwin Initiative's internal reporting system will be complied with strictly and comprehensive replies provided to the evaluator's comments on the submitted reports. Any divergence from the plan will be justified in writing. Some adjustments may be required due to the inherent uncertainty regarding some fieldwork at remote sites; for example, necessitating a return visit that was initially unplanned. Consequently, we will use adaptive management to ensure the benefits from the project impact maximally on biodiversity and communities and we see the log-frame as a living document that will evolve in time.

Engagement between institutes at the scientific level is anticipated to be relatively trouble-free; mainly due to the time spent planning the project together. However, community engagement will be the sole responsibility of the host country collaborator, JERA. Although the UK management team will visit the biodiversity sites and communities in Uganda, it will be necessary to ensure that the community-based involvement in the nursery work is closely monitored and the ambition of the work realistically reflects general capabilities based on an evaluation of baseline knowledge of cultivation techniques. Views on the success of the nursery work and content of the species leaflets will be reached through consultation with the community and teachers involved in the 'cycads for children' programme. Lessons learned will be absorbed into the project.

Although monitoring and evaluation are built into the project as specific activities with milestones, the longer-term impact of the project will be more difficult to assess. However, we will monitor the number of downloads of the electronic guidebook on *Encephalartos* cultivation and use this as surrogate for potential longer-term impact for that part of the project.

There are some historical indicators and baselines for cycad trade in many countries that can be used to evaluate progress of the project in Uganda. We can and will also draw on the experiences gained in Kew's Useful Plants Project and Great Green Wall Project on the challenges of establishing nurseries for other plant species (medicinal and trees, respectively) in the region.

The overall responsibility for project delivery resides with Kew (PI and PM), and oversight of the technical training. Successful delivery of training in South Africa, Thailand and China is the responsibility of the respective national institutes. JERA is ultimately responsible for organising the fieldwork, establishing the nursery with local communities, the schools programme and the cascade training to the Philippines. WCMC is responsible for sourcing and analysing trade data. SANBI will lead on advanced technology training (e.g. micro-chipping) and De la Salle University in the Philippines will be ready to benefit from staff training in cycad cultivation in year 3. As the project partners reside on three continents, a web-based project meeting facility will be set up so that progress can be discussed and monitored regularly.

## 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.**

**NB:** Please state all costs by financial year (1 April to 31 March) and in GBP. **Budgets submitted in other currencies will not be accepted.** Use current prices – and include anticipated inflation, as appropriate, up to 3% per annum. The Darwin Initiative cannot agree any increase in grants once awarded.

### 28. 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.

(max 300 words)

#### **Balance of funding**

UK salary cost has been minimised, covering project management and essential specialist scientific and technical input only. Kew will provide for 50% of the UK salary cost and 40% of associated overheads costs. International travel cost has been minimised by appointing SANBI as the main training partner for Ugandan scientists/horticulturalist. Staff time for Ugandan and other international participants is an order of magnitude greater than UK staff time (just over 1 person years), a ratio that is in line with earlier DI projects managed by the Kew team (i.e., OSSSU, CCESSA, and DIRECTS).

#### **Development of the budget**

Even though the project is complex, involving inputs from seven institutes in six countries, we have been able to keep costs to a minimum through protracted but balanced discussions on the needs of partners to deliver the project on time and within realistic expense. Inter-institutional memoranda of understanding will from the start of the project confirm these cost bases, to avoid budget creep. Whilst small annual increases in salaries have been accounted for, we have assumed relative stability of the currency exchange markets. However, the exchange situation will be regularly and carefully monitored.

#### **Cost effectiveness and efficiency**

In addition to the monitoring of the exchange rates, collaboration with so many partners will require active budget management, to ensure that no single part of the project jeopardises spending elsewhere (potential negative impact) unless there is general agreement between the collaborators. The project management team in the UK will regularly review the financial situation to identify any significant divergences in spend and take corrective action, and keeping a close scrutiny on any inherent risks in the assumptions we have made.

## 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.

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

**The Royal Botanic Gardens Kew**

I apply for a grant of **£192,676** 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 project principals and letters of support.
- Our most recent audited/independently verified accounts and annual report are also enclosed/can be found at: <http://www.kew.org/about-kew/our-work/annual-report-accounts/index.htm>

|                                     |                     |
|-------------------------------------|---------------------|
| <b>Name (block capitals)</b>        | Prof. Kathy Willis  |
| <b>Position in the organisation</b> | Director of Science |

**Signed**



**Date:**

2<sup>nd</sup> December 2013

**Stage 2 Application - Checklist for submission**

|   | Check    |
|---|----------|
| Have you <b>read the Guidance Notes</b> ?   | ✓        |
| Have you provided <b>actual start and end dates</b> for your project?   | ✓        |
| <b>Have you indicated whether you are applying for DFID or Defra funding.</b><br>Yes, Defra   | ✓        |
| Have you provided your <b>budget based on UK government financial years</b> i.e. 1 April – 31 March and in GBP?   | ✓        |
| Have you checked that your <b>budget is complete</b> , correctly adds up and that you have included the correct final total on the top page of the application? | ✓        |
| Has your application been <b>signed by a suitably authorised individual</b> ? (clear electronic or scanned signatures are acceptable in the email)              | ✓        |
| Have you included a <b>1 page CV for all the Principals</b> identified at Question 7?   | 6 of 7 ✓ |
| Have you included a <b>letter of support from the <u>main</u> partner(s) organisations</b> identified at Question 10?   | ✓        |
| Have you <b>been in contact with the FCO</b> in the project country/ies and have you included any evidence of this?   | ✓        |
| Have you included a <b>copy of the last 2 years annual report and accounts</b> for the lead organisation? An electronic link to a website is acceptable.        | ✓        |
| Have you <b>checked the Darwin website</b> immediately prior to submission to ensure there are no late updates?   | ✓        |

Once you have answered the questions above, please submit the application, not later than midnight GMT on Monday 2 December 2013 to [Darwin-Applications@ltsi.co.uk](mailto: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.