



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)

Name of organisation: Royal Botanic Gardens, Kew	Address: Seed Conservation Department, Wakehurst Place, Ardingly RH17 6TN, West Sussex
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2. Stage 1 reference and Project title

(max 10 words) Ref: 2367 Pesticide plants for organic cotton, livelihoods and biodiversity in Mali

3. Project dates, and budget summary

Start date: 01/04/2014		End date: 31/03/2017		Duration: 3 years
Darwin request	2014/15 £72,731	2015/16 £87,914	2016/17 £97,895	Total £258,540
Proposed (confirmed and unconfirmed) matched funding as percentage of total Project cost: 20%				
Matched funding confirmed:		£57,210		
Matched funding unconfirmed*:		£29,550		
Kew salaries:		£17,210		
Total:		£103,970		
*To be raised by the Kew Foundation if this application is successful				
Are you applying for DFID or Defra funding? (Note you cannot apply for both)		DFID: Yes		Defra: No

4. Define the outcome of the project. This should be a repetition of Question 25, Outcome Statement.

(max 30 words) The sustainable use and cultivation of pesticide plants for organic cotton production leads to increased income generation among target communities, and reduces the loss of plant biodiversity in southern Mali.

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.

Country 1: Mali	Country 2:
Country 3:	Country 4:

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)	No

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)

Mali has ratified the CBD since 1995 and by addressing the conservation and sustainable use of native pesticide species, this project will support several Aichi Targets and Global Strategy for Plant Conservation (GSPC) Targets, in addition to Mali's own Agricultural and Forest Biodiversity Programmes.

The contribution to assessing species' potential for conservation and sustainable use, and their characteristics (e.g. seed storability, germination) is particularly important for Mali's international obligations.

Specifically, the project will enhance and contribute to:

- Raising awareness of the values of (plant) biodiversity and the steps needed to conserve and use it sustainably (Aichi Target 1)
- Governments, business and stakeholders taking steps to keep the use of natural resources well within safe ecological limits (Aichi Target 4)
- Preventing the extinction of threatened species particularly of those most in decline (Aichi Target 12)
- Sharing, transferring and applying scientific knowledge to improve the status and trends of biodiversity (Aichi Target 19)
- Assessing the conservation status of plant species to guide conservation (GSPC 2)
- Preserving threatened species *in-situ* and in national, *ex-situ* seed bank facilities (GSPC Targets 7 & 8);
- All wild harvested plant-based products sourced sustainably (GSPC Target 12)
- Strengthening partnerships and co-operation with appropriate national and international institutions (GSPC Target 16)

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

Yes No if yes, please give details:

Contact with Mali's CBD focal point has been established through the regular framework meetings between IER's Forestry Research Programme and the National Forestry Department (*Direction Nationale des Eaux et Forêts- DNEF*). The current CBD focal point Mr Boureima Camara, (based at DNEF), has been informed about this project and is enthusiastic about its development, which he recognises will help Mali to fulfil some of its international obligations regarding CBD. In addition, Kew's Millennium Seed Bank has been working with DNEF and particularly with Ms. Haoua Coulibaly, deputy to Mr Camara, on planting activities of the Africa Great Green Wall project in Mali. Plans for this Darwin project have been communicated at IER-DNEF meetings in Bamako which are a national forum between forestry Research (IER) and Development organisations. At the last annual meeting, DNEF recommended the provision of support from regional Forest Officers to the project in the four targeted regions.

<p>Lead institution and website:</p> <p>Royal Botanic Gardens, Kew</p> <p>www.kew.org/msb</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>The project will be managed by Kew, building upon long-term partnerships with IER since 2003 and MOBIOM (<i>Mouvement Biologique Malien</i>, since 2008).</p> <p>As an international centre of excellence for plant science and for wild seed banking, Kew's Millennium Seed Bank (MSB) will provide the technical expertise needed to address knowledge gaps and the technical challenges to the project. Specifically, Kew will assess wild species populations used by the communities, verify and authenticate them and collect seeds and plant parts for propagation, long term conservation and bioassays.</p> <p>Dr Sacande, the Project Lead, has over 20 years research experience of helping rural communities in sub-Saharan Africa (both Anglophone and Francophone) sustainably manage useful plant populations and tackle challenges relating to their propagation in gardens and conservation in the wild. Dr Sacande will therefore technically contribute to project activities, while also managing and providing leadership to the project.</p> <p>Kew will:</p> <ul style="list-style-type: none"> • Oversee the technical and financial management of the project • Ensure all activities are carried out to time and to budget. • Chair six-monthly project steering group meetings • Implement communication strategy for project outputs • Ensure timely reporting to the DI
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<p>Partner Name and website where available:</p> <p>Institut d'Economie Rurale / CRRA Sikasso, Mali</p> <p>www.ier.gouv.ml/</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>IER is the national agricultural research institution, which hosts Mali's Forestry Research Programme located at the regional centre of Sikasso. It has worked with Kew to conserve the country flora for over 10 years and now has the expertise to undertake wild seed collecting, handling and conservation, as well as establish community gardens.</p> <p>Kew and IER have worked closely together to strengthen the institutional capacity of the authorities in Mali to manage the country's flora. This collaboration has led to a fully fledged national seed bank, herbarium and comprehensive database of about 50% of Mali's wild plant species held at IER.</p> <p>IER will be the Host Organisation for this project and Mr Sidi Sanogo who is a seed expert and the national manager of Mali's seed bank, will:</p> <ul style="list-style-type: none"> • Coordinate all activities of the project in-country, closely interacting with Kew and MOBIOM for the implementation of this project • Ensure timely reporting to the Kew management team; • Ensure all activities are carried out to time and to budget received. • Implement community participatory M & E
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Have you included a Letter of Support from this institution?	Yes
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<p>Partner Name and website where available:</p> <p>Natural Resources Institute (NRI), University of Greenwich</p> <p>www.nri.org</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>Prof. Philip Stevenson holds a joint position at NRI and Kew and will provide technical input into the project on validation of plant materials through bioassays and chemical analysis of the selected pesticide plants. Prof. Stevenson has a long experience in Bioassay design and development to identify chemicals with biological activity against plant diseases and insect pests and to determine any potential ecological or industrial role.</p> <p>Prof. Stevenson has over 100 publications on biologically active plant compounds for crop protection and animal health with many years' experience working in numerous countries in sub-Saharan Africa. His recent published findings show that pesticide plants can be as effective at controlling field pests as synthetic products, that they are less harmful to beneficial insects, and that they have great potential added value to ecosystems. Prof. Stevenson's research also includes cost:benefit analyses which indicate that pesticide plants are economically viable for small-scale farmers in the long term.</p> <p>Prof. Stevenson will:</p> <ul style="list-style-type: none"> -Oversee the laboratory design, chemical analyses and identification of compounds of the native plants used as pesticides in cotton production; -Collaborate and coordinate field evaluation of these plants' efficiency with IER and MOBIOM farmers; -Ensure timely reporting to the Kew management team.
Have you included a Letter of Support from this institution?	No (because of the joint position of Prof. Stevenson)

<p>Partner Name and website where available:</p> <p>The <i>Mouvement Biologique Malien</i>, Siege a Bougouni, Mali</p> <p>www.mobiom.org</p>	<p>Details (including roles and responsibilities and capacity to engage with the project): (max 200 words)</p> <p>MOBIOM (<i>Mouvement Biologique Malien</i>) is the only umbrella organisation for village co-operatives that grow organic and Fairtrade cotton and other cash crops. MOBIOM monitors and evaluates farmer producers' performance for best organic practices so that crops can be certified organic. MOBIOM membership continues to grow since it was created in 2002.</p> <p>MOBIOM whose farmers are small-scale farmers with 0.5 to 5 ha land are the recipients and direct beneficiaries of this project. Therefore, MOBIOM will:</p> <ul style="list-style-type: none"> • participate in the implementation of the project's activities on the ground; • participate in meetings and workshops, and respond to surveys, information and data as required; • contribute to pesticide species assessment and prioritisation of their needs; • help provide and contribute land and labour for the demonstration plots; • test the pesticide products developed and apply project findings; • help the project set up small-scale plant pesticide production. <p>Some of MOBIOM farmers from two communities have worked directly with Kew through the useful plant project (UPP) in Yanfolila and Bla since 2008.</p>
<p>Have you included a Letter of Support from this institution?</p>	<p>Yes</p>

<p>11. Have you provided CVs for the senior team including the Project Leader</p>	<p>Yes/No</p>
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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)

Mali is a Least Developed Country facing increasing pressure on its natural resources and biodiversity. In the regions of Sikasso, Segou, Kayes and Koulikoro, communities rely on cotton as a cash-crop. However, Mali's 4th CBD Progress Report highlights that increased cotton cultivation is threatening ecosystems because of harmful chemical pesticides used and the depletion of forest cover.

The growing demand for organic cotton provides an opportunity for poor farmers in Mali to double their income in comparison to selling conventional cotton, while reducing their environmental impact. However, producing organic cotton currently relies on unsustainable wild harvesting of naturally pesticide plants to replace chemical pesticides.

A number of these pesticide species are in decline, threatening the long-term viability of organic cotton production. Kew-led consultations with farmers have shown that there is a "trial-and-error" approach to using native pesticide plants, with a limited understanding of the volumes

needed to protect crops. This causes waste and affects the reliability and efficacy of these natural pesticides. There is also no knowledge of how to collect, conserve, germinate and propagate seeds from these species to ensure sustainable supplies. Unless this is addressed, wild plants will disappear, threatening livelihoods, the resilience of communities and biodiversity.

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**)

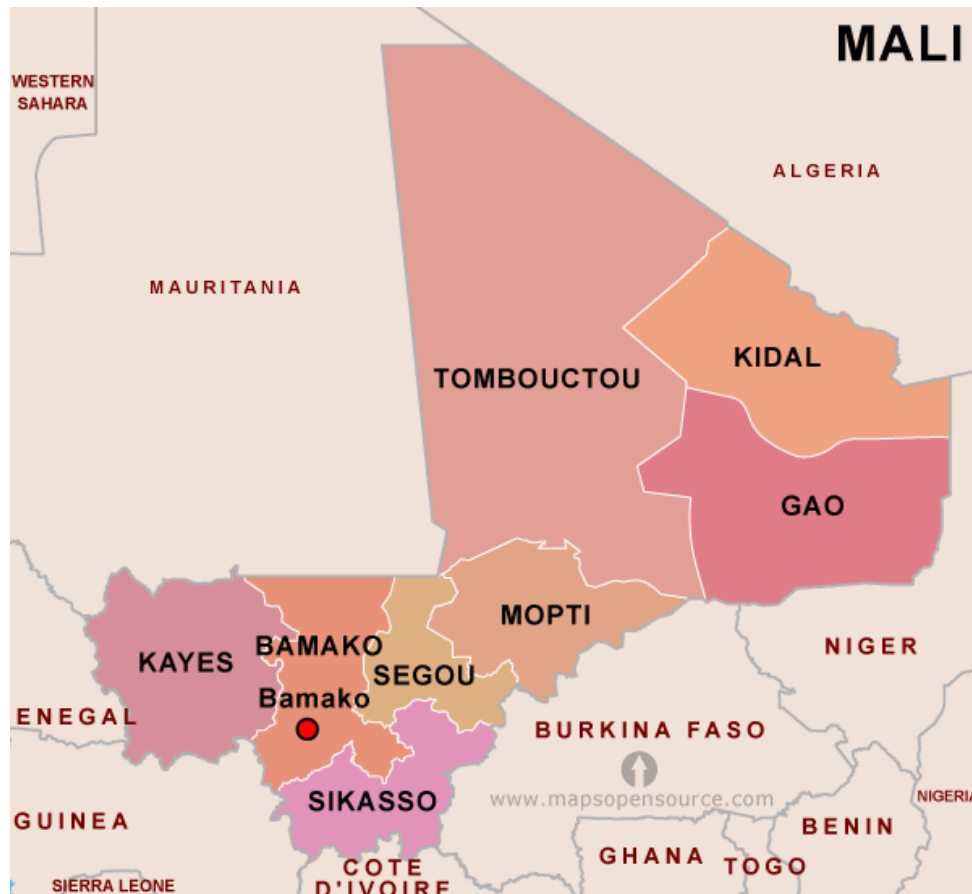


Fig 1. Mali map showing target regions of Sikasso, Kayes, Segou and Koulikoro (Bamako).

This project aims to increase the income of target communities in Mali and reduce the depletion of plant biodiversity by providing the scientific expertise needed to establish the sustainable use and cultivation of native pesticide plants for organic cotton production.

Activities fall under the following five areas:

1. Identification and authentication of native pesticide species currently used by organic cotton farmers in target communities

Facilitated by MOBIOM, the project partners will build on previous consultations with the target communities to identify the species currently being used as natural pesticides in organic cotton production. Farmers will collect plant specimens and Kew will provide the taxonomic expertise together with IER for the species authentication. A rapid monitoring approach will be applied for assessing the selected species abundance in the wild.

2. Active compounds / ingredients in the key pesticide plants being used by cotton producers are identified

Collaborative laboratory work at Kew and at IER in Mali will identify the compounds in the species and parts of the plants being used which are responsible for their pesticide properties. Tests on pests which attack cotton plants will be carried out to help establish the concentrations, sequences of treatment and relative merits of the different species as organic pesticides.

3. Four small-scale organic pesticide producers established and trained to supply optimum standard organic pesticides to cotton farmers

Four farmer-based suppliers of optimum standard organic pesticides will be established in the four targeted regions. They will be trained on collecting and extraction methods by IER and Kew to produce optimum standard organic pesticides and market this to cotton farmers. The four initial suppliers group will be distributed across the target regions to ensure that they can provide organic pesticide to all farmers in the project.

4. Four community demonstration gardens established to strengthen the capacity of target communities to cultivate pesticide plants.

The project will establish demonstration community gardens as farmer field schools to reduce the pressure on wild sources of pesticide plants. The gardens will provide an alternative to wild plant harvesting and ensure sustainable supplies of key plants in the future. IER will lead on this with input from Kew.

5. Increasing awareness of pesticide plant use for organic cotton production among policy makers in Mali

Kew and IER will work together to develop standards to ensure the sustainable harvesting and efficient use of wild pesticide plants by cotton farmers. This best practice will be presented to the national cotton board of Mali (CMDT), and the Agriculture and Forestry departments who manage and advise farmers on the conservation and sustainable use of non-timber forest products. Organising project visits for key CMDT and ministry staff will support this and help maintain political buy-in for the project.

The project will be managed by Kew who will build on existing consultation and participatory discussions with the target communities to develop an M&E framework based on the project's logframe. IER have long standing expertise in rural development and will use their local socio-economic expertise to help address product development, income generation and farmers' livelihood components.

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)

This project will benefit organic farmers organised in 85 co-operatives within 95 districts of southern Mali that constitute the major cotton-producing regions of Sikasso, Segou, Koulikoro and Kayes. 10,500 organic cotton farmers (of which 30% are women) will benefit directly from the project. Each farmer financially supports 6-10 family members, creating c.105,000 indirect beneficiaries.

Cotton production is listed as a Growth-oriented sector in Mali's PRSP, recognising that increased cotton productivity will support rural development and poverty reduction. Comparative low-cost production of organic cotton is welcomed by poor farmers because it is worth twice that of conventional cotton. But its current dependence on rapidly disappearing wild-harvested pesticide plants means it is unsustainable.

The project will improve the scientific understanding of the properties of the pesticide plants

used by cotton farmers to enable optimum standards to be established. This will help them be efficient in using native pesticide plants, increase their organic yields and income, and therefore contribute to poverty reduction in Mali. It will also reduce the wild-harvesting and pressure on vulnerable species such as *Khaya senegalensis* and *Capara procera*.

Establishing communal gardens of pesticide plants will reduce pressure on wild sources of pesticides even further, supporting long-term organic cotton production. This will further reduce inputs costs and increase profits for these subsistence farmers.

Mali's 4th CBD Report recognises that increased cotton cultivation is threatening ecosystems. By making organic cotton production more efficient and sustainable, this project will create a "win-win" for poverty reduction and biodiversity conservation.

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 although it builds on the excellent relationship between Kew, NRI, IER and MOBIOM established during the implementation of the useful plants project (UPP), Kew's community livelihood programme in Mali.

The project will also draw upon the experiences and lessons learnt from the ADAPPT project, an NRI initiative on which Kew is a partner. (See below)

15b. Are you aware of any other individuals/organisations/projects carrying out or applying for funding for similar work? Yes No

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

(1) African Dryland Alliance for Pesticidal Plant Technologies (ADAPPT)

(<http://www.nri.org/projects/adappt>) is a research network of scientists and agricultural technicians from Ghana, Kenya, Malawi, South Africa, Tanzania, Zambia, Zimbabwe and the UK supported by a European Union grant from EDF to establish a network of with a focus on pesticide plants as environmentally benign and safer alternatives to synthetic pesticides. This network addresses Millennium Development Goals 1, 7 and 8 by targeting poverty eradication at the small-scale farming level, building and enhancing strong scientific and technological capacity in agriculture, chemistry, biodiversity conservation, and plant physiology. The network led by Prof Stevenson has been awarded a recent new EU grant from ACP S&T to develop the commercial potential of pesticide plants through cultivation in Kenya, Malawi, Zimbabwe and Tanzania and will support the proposed action with resources and expertise. Another project that is investigating optimising application protocols under the ADAPPT network has also been supported recently by a McKnight Foundation grant and can add value to the proposed action.

(2) The Useful Plants Project (UPP) (<http://www.kew.org/science-conservation/save-seed-prosper/millennium-seed-bank/using-our-seeds/helping-communities-worldwide>) is supported by a philanthropist's funds to help rural communities in Botswana, Kenya, Mali, Mexico and South Africa propagate and establish important species in home gardens that are useful to their daily life for medicine, food, fodder and other amenities.

Similarities to the proposed project:

- Native species conservation and sustainable exploitation of useful species to avoid biodiversity loss and increase resilience (both);
- A focus on pesticide plants as environmentally benign and safer alternatives to synthetic pesticides (ADAPPT);
- Building capacity and training to propagate and establish home gardens of local useful species for local communities, implementing GSPC/CBD targets (UPP);
- Enhancing institutional research capacity and incentive of the network partners and so increase the quality and impact of research results and disseminated outputs

(ADAPPT);

- Targeting poverty eradication at the small-scale farming level; supporting development and innovation in Africa (both).

Differences:

- The proposed project is Mali specific. It aims to address farmers' needs through development research in order to increase income and reduce poverty. ADAPPT is a research project seeking to establish a scientific network and operating geographically only in Ghana in West Africa.
- The proposed project is focussed on supporting the resilience of organic production systems and of ecosystems threatened by unsustainable harvest of natural resources.
- The proposed project will explore the potential to propagate elite plant materials rather than focusing on networking and technology development.
- The proposed project will train and create small-scale enterprises managed and handled by farmers to produce and supply optimum organic pesticide into the future.

For mutual benefits and to ensure that the projects are complimentary, both the UPP project manager Sidi Sanogo in Mali and the ADAPPT project manager Prof. Philip Stevenson are Principals of this project. Prof. Stevenson will oversee the chemical research investigations of the key pesticide species whilst Mr. Sanogo will support the implementation of the standards and demonstration gardens with communities in Mali. Dr Sacande is contributing to ADAPPT and has been managing the UPP in Mali since its inception in 2008.

15c. Are you applying for funding relating to the proposed project from other sources?

Yes 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.

The Kew Foundation is applying for further **£30,000** funding towards this project under TRAIID (Textile Recycling for Aid and International Development) International Development Programme and is expecting to hear the result by September 2014. **(see also Section 24.a).**

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?

Mali is one of the world's poorest countries and is ranked 182 out of 186 in the Human Development Index (2013). By supporting small-scale organic cotton producers and protecting biodiversity in Mali's poorer, rural areas, the project will ensure that DI funding has a significant impact for poverty reduction, human welfare and conservation.

The DI investment (£258,540) will directly support the core cash business of 10,500 beneficiary farmers (about £8.20 per farmer per year) while ensuring the sustainable use and conservation of over-exploited pesticide species in Mali. Each farmer financially supports 6-10 family members, creating up to 105,000 further indirect beneficiaries from the project.

Capacity building measures and activities with "multiplier effects" will maximise DI investment and ensure the project leaves a lasting legacy – for example, developing standards for the efficient extraction and dosage of ingredients from pesticide plants. For further sustainability, plantations in farmers' plots will reduce future wild harvesting, thus maintaining biodiversity whilst establishing a low-cost long-term supply. This project also offers good value for money because some focal species – such as *Carapa procera* – are not only used as pesticides but have other important uses for human and animal health. The project therefore has the potential to deliver other community benefits.

Finally, organic cotton production is a viable livelihood option for women because it is a trusted sector with relatively low start-up costs. MOBIOM membership is made up of 30% women-led households and/or producers. Therefore this project would have added-value in supporting women's rights and gender equality in Mali.

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). In addition, all staff going on overseas fieldwork collecting trips must go through Kew's Overseas Fieldwork Committee to get permission to travel. This ensures that staff are aware of, and fulfil, requirement of CITES and CBD, including all national and local legislation on collecting and exporting genetic resources and associated traditional knowledge. This 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 that staff are aware of the latest developments in this area. Kew has also developed a suite of standard model agreements, letters, prior informed clauses and documents for staff to use and develop with partner countries, partner institutions and with communities.

In 2003, the Republic of Mali (through IER) signed an Access and Benefit Sharing agreement with Kew since when Kew and IER have been exchanging plant material. In 2007, Kew's Millennium Seed Bank worked closely with IER and farmer communities in Mali to develop a programme of useful plant conservation and sustainable use (<http://www.kew.org/science-conservation/save-seed-prosper/millennium-seed-bank/using-our-seeds/helping-communities-worldwide/mali/MSB---UPP---Mali.htm>). This has provided the foundation for this Darwin Initiative application, which has been developed in the context of poverty reduction, reduction of biodiversity loss and sustainable and efficient use of native pesticide plants for organic cotton production in Mali.

This project will take a participatory approach to Monitoring and Evaluation and use MOBIOM's bi-annual AGMs to gather feedback on the project's progress from the perspective of its beneficiaries. This will encourage ownership, leadership and participation from the communities directly involved in the project. Taking a transparent approach will also help ensure that the project team is held to account by the beneficiaries to deliver impact.

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)

Although cotton production is a Growth-oriented sector in Mali's PRSP, increased cultivation is threatening ecosystems. By helping to make existing organic cotton production more efficient and sustainable, this project will create a "win-win" for poverty reduction and biodiversity conservation and support the country under its CBD commitments.

Many important native species are used in organic production in Mali. However, due to vanishing supplies MOBIOM farmers now rely mostly on key species as sprays per annum: the native *Carapa procera* (~ 20 metric tons of seeds for ~ 5,000L extracted oil, the proportion implying a lot of wastages due to inefficient extraction) and the exotic Neem, *Azadirachta indica* seeds (~40 metric tons used directly as maceration). Farmers know this is unsustainable and are concerned that key native species are going locally extinct.

Analysis by MOBIOM indicates that by improving the efficiency of pesticide plant use, input costs could be decreased by up to 25%, thereby increasing profit margins. We anticipate that standardising the applications of pesticides will further decrease investment costs, thereby increasing profits and protecting species in the longer term.

By the end of the project, gardens of pesticide species will be established and an improved scientific understanding of their properties will have enabled optimum standards to be established. This will help farmers be more efficient in using pesticide plants, reduce wastage,

increase their organic yields, return on investment and income, and reduce the harvesting of wild plants.

The project will also help MOBIOM secure crop bonuses for “first class” organic cotton yields. The money is typically invested by MOBIOM into community infrastructure projects such as schools or clinics – a legacy benefitting whole communities.

By engaging the national cotton board and other policy makers, the project aims to create an enabling policy environment to support its long-term impact and legacy.

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)

Cotton production contributes directly to the incomes and livelihoods of up to three million people in Mali, over a quarter of the total population. Cotton production is therefore listed as a Growth-oriented sector in Mali’s PRSP, which recognises that increased cotton productivity will play an important role in rural development and poverty reduction in Mali. Organic Fair Trade cotton is worth nearly twice that of conventional cotton but its current dependence on rapidly disappearing wild-harvested pesticide plants means it is unsustainable.

This project will benefit 85 co-operatives located within 95 districts across the four major cotton-producing regions of Sikasso, Segou, Koulikoro and Kayes, where poverty is widespread (65% to 84%, average of 73% for global rural areas in Mali). In these regions, cotton is the cornerstone of an agricultural system that also includes cereals and other food crops. Cereals provide staple food but household incomes are mainly drawn from cotton production. Payments for cotton, if made in a timely fashion, mean that farmers are not obligated to sell their cereals at low prices to access cash to cover household needs.

Some 3,150 women, out of the 10,500 organic cotton farmers are expected to benefit directly from the project. Each farmer financially supports between 6-10 family members, creating up to 105,000 indirect beneficiaries. By sustainably reducing input costs and helping to increase profit margins, the project will make these cotton farming communities more resilient to shocks such as drought or volatility in the global cotton market. This project directly supports Mali’s Poverty Reduction Strategy and its recommendations for “a national cotton development strategy”– specifically in helping to make cotton farmers more competitive through reducing input costs. This project will not eradicate poverty in Mali but will have a knock-on effect in improving both income and livelihoods.

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?

(Max 200 words)

To ensure sustainable impact, this project takes a progressive approach which is embedded in Kew’s business plan (2010-2020). This includes adopting a ‘graduation’ strategy to build capacity and enable local partner communities to become fully independent on all technical activities towards the end of the project.

The communities’ initial investments in the project (e.g land and labour) will help ensure the ongoing maintenance of community gardens. Kew and IER will work with local partners on protecting seedlings until they are established, usually within three rainy seasons for native tree plants in the field in these zones, until they are no longer at risk from weeds, livestock and bush fires.

Kew/IER will continue with regular data collection on the planted species and that will help maintain farmers' interests and provide advice for the continued success of established plots.

The organic Fairtrade market links already in place will ensure that increased income from more efficient cotton production continues to flow to beneficiaries after the life of the project.

Regular dialogue with the National Forestry Department (DNEF), and the existing links between MOBIOM and CDMT (Mali's nationalised cotton producer), will help to maintain political buy-in and contribute to sustainability at a policy level.

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)

The project has communications, knowledge sharing and dissemination components with a primary target group of subsistence organic cotton producers (10,500 farmers). A handbook on propagation, conservation and sustainable use protocols for pesticide species will be produced for the benefit of this target group. These will contain good illustrations and photographs to help farmers with species identification and technical understanding. The project's technical reports will be shared with interested farmers' groups, e.g. the National Farmers Union, and environmental NGOs operating in the region.

The benefits of organic production – both in low input costs and biodiversity conservation – will be promoted through farming fairs, exhibitions (video) and radio, encouraging farmers to adopt more sustainable methods. Demonstration activities, and wider communication activities, will make use of Mali's extensive local radio network, so as to ensure that those without literacy skills can participate and benefit fully.

This project will maintain dialogue with Mali's CBD focal point (through DNER) and contribute to Mali's international obligations regarding ex-situ conservation of threatened native species, raising awareness about the pressure on plant diversity and influence national policy about its conservation and sustainable use. To increase awareness of pesticide plant use for organic cotton production among policy makers, the project will produce guidelines and recommendations for the national cotton board (CDMT) and the Forestry and Agriculture departments. These will be presented at a workshop in year 3 and field visits by ministry staff will provide an opportunity for disadvantaged farmer groups to express their concerns to the research community and decision makers in the government agencies. Internationally, the project will be promoted through Kew's MSB partnership and specific networks such as ADAPPT. This project will also assist IER staff to bring their work to international standards and submit papers for publication in peer-reviewed journals.

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 recognises that free and open access to publicly-funded research, datasets and technical reports offers significant social and economic benefits (and maximises the impact of taxpayer money). Following the "Finch Report" on "Accessibility, sustainability, excellence: how to expand the access to research publications", and the government's response, Kew began a process of developing a new internal policy to comply with new open access recommendations. This process is currently underway with "gold" route and "green" / archiving options still being explored.

In this project we are committed to making outputs freely available through different formats. Illustrated technical manuals on species identification, sustainable use and

cultivation will be translated into French and the local Bambara language for farmers. Peer reviewed publications from this project – for example, on seed handling and propagation methods for listed pesticide plant species – will target widely accessible journals. Datasets will be shared in accessible formats (and on websites) with networks of different partners (Kew's MSB partnership, IER, MOBIOM, Helvetas - InterCooperation). Project staff will present results to development partners such as government ministries, NGOs and universities, and also disseminate project findings via annual conferences/meetings of the national farmers' union in Mali.

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.

This project will combine modern science and traditional community knowledge of useful plants to deliver livelihood and conservation outcomes. Cotton production can be a threat to local ecosystems. But this project aims to improve organic, less-damaging cotton production on land already cultivated.

While many projects explore biodiversity-development linkages, the importance of native species for development, as opposed to exotic species, has received less attention. To address this, Kew helped establish a technical consortium called *Forest Landscape Africa*, which has assessed the constraints and opportunities for public sector forestry in Africa, in addressing issues such as deforestation, food security and climate change. Research has shown that the government tree seed centres and forestry institutes supply, on average, 40 tonnes of seeds of 558 species and 398 million seedlings per annum, the majority of which are exotic. This project will create an opportunity to address technical matters in areas of sustainable livelihoods and to increase the cultivation and sustainable use of *native species* useful to rural communities for livelihood development. Forest Landscape Africa, and the forum that it has created, will enable lessons learnt from this project to be shared beyond Mali.

Vulnerable plant species such as *Carapa procera*, *Khaya senegalensis* and *Securidaca longipedunculata* have not specifically been the target of previous Darwin/conservation projects. However, as well as being pesticide plants, they have other useful properties and are used by traditional healers. This emphasises the importance of using native species for livelihood development and the approach of this project.

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:

The Kew Foundation has been successful in securing **£60,000** towards this project from TRAIID (Textile Recycling for Aid and International Development). The funding was awarded under TRAIID's International Development Programme.

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
April 2014	TRAIID	£30,000	A further £30,000 will be sought from TRAIID in the second year of the project.

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)

The sustainable use and cultivation of useful native plants support biodiversity conservation and poverty reduction in rural Mali.

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)

The sustainable use and cultivation of pesticide plants for organic cotton production leads to increased income generation among target communities, and reduces the loss of plant biodiversity in southern Mali.

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	Native pesticide plants successfully established in community demonstration gardens as farmer field schools in each of the regions by yr 3
Indicator 2	Yields of 'first class' organic cotton increase by 5% across target communities, increasing farmers' revenues and securing crop bonuses for reaching organic cotton production targets by yr 3. <i>(These targets are set by the national cotton processor. Through MOBIOM the money is typically invested into community infrastructure projects such as schools or health clinics)</i>
Indicator 3	All beneficiary women farmers (30% of Mobiom) have increased their income by 10 to 25% in the four regions by yr 3; All direct beneficiary men farmers have increased their income by 10 to 25% in the four regions by yr 3

Indicator 4	>25% of cotton farmers in target communities use optimum standard organic pesticide and treatment regimes, reducing wastage by yr 3
Indicator 5	Important pesticide species show marked reduction* in losses, benefitting the conservation of wild populations <i>*(Indicator to be made SMART following the identification and authentication of exact pesticide species being used – see Output 1)</i>

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	Technical reports on species woodlots by IER, MOBIOM and Kew
Indicator 2	MOBIOM annual reports; Household surveys and questionnaire, and reports
Indicator 3	National cotton board reports on organic production and sales, Household surveys
Indicator 4	Household surveys and questionnaire, and technical reports
Indicator 5	Vegetation surveys in the four regions at beginning and end of project, and technical reports

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	Plant propagation and analytical research on the target pesticide species does not prove to be exceptionally difficult. <i>The seed biology of some species can be quite challenging in terms of propagation research (seed germination and handling) and of analysing plant chemical composition with limited published references on those species. However, Kew's excellent seed laboratory and reference collection will help overcome any challenges.</i>
Assumption 2	The 4 small-scale producers of organic pesticide can continue to source raw material needed to create the optimal pesticide for organic cotton farmers. <i>Because of the organic certification process, the producers will be aware of the need to manage wild resources. By improving the efficiency of using wild plants, the project will help protect sources of pesticide plants.</i>
Assumption 3	The national cotton board (CMDT) maintains its support to organic cotton production and its marketing. <i>The demand for certified organic cotton has grown at 20-30% a year and current forecasts suggest that global demand for organic cotton will outstrip supply by a significant and expanding margin. The risk of withdrawing national support to organic cotton is minimal as CMDT operates under the rural economy and development programme, and organic cotton is currently a guaranteed market because even great demand (from mainly Europe, China and India) cannot be met.</i>
Assumption 4	Climatic variation does not restrict or threaten the viability of pesticide plant cultivation in community gardens. <i>Exceptional seasonal variation of rainfall could restrict seed collection and plant cultivation. However, as native species, the plants are adapted to local conditions so weather variation within normal ranges should not hamper</i>

	<i>activities.</i>
Assumption 5	International organic cotton prices do not fall significantly. <i>The risks of low international cotton prices affecting project farmers are minimised through the organic Fairtrade market links already in place.</i>

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.

Output 1	Identification and authentication of pesticide species currently used by organic cotton farmers in target communities
Output 2	Active compounds / ingredients in the key pesticide plants being used by cotton producers are identified and relative effectiveness of different species established
Output 3	Four small-scale organic pesticide producers established and trained to supply optimum standard organic pesticides to cotton farmers
Output 4	Four community demonstration gardens established as farmer field school approach to strengthen the capacity of target communities to cultivate pesticide plants. This will provide an alternative to wild plant harvesting and ensure sustainable supplies of key plants in the future.
Output 5	Increased awareness of pesticide plant use for organic cotton production among policy makers in Mali (CMDT/Dept. of Agriculture/Dept. of Forestry)

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 <i>Identification and authentication of pesticide species currently used by organic cotton farmers in target communities.</i>	
Indicator 1	Established base list of pesticide species collated from desk study and questionnaires addressed to organic cotton farmers in the 4 Regions of Mali
Indicator 2	Collections of specimens of seeds and herbarium vouchers of pesticide species
Indicator 3	List of authenticated pesticide species with confirmed scientific and vernacular names

Output 2 <i>Active compounds / ingredients in the key pesticide plants being used by cotton producers are identified and relative effectiveness of different species established.</i>	
Indicator 1	Identification of chemical composition of the key pesticide species
Indicator 2	Establishment of relative effectiveness of different species

Indicator 3	Establishment of effectiveness and dosages of combined ingredients of different key species that cotton producers are to use
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Output 3

Four small-scale organic pesticide producers established and trained to supply optimum standard organic pesticides to cotton farmers.

Indicator 1	10 farmers from the 4 regions and Mobiom technical team trained in producing optimum standard plant-based products for organic crop production
Indicator 2	Small-scale supply branches of standardised pesticide products set up in each of the 4 Regions managed by the trained farmers as inputs
Indicator 3	Specific market niche of plant products and investments established

Output 4

Four community demonstration gardens established to strengthen the capacity of target communities to cultivate pesticide plants. This will provide an alternative to wild plant harvesting and ensure sustainable supplies of key plants in the future

Indicator 1	Establishment and maintenance of demonstration gardens of at least 1ha in each of the 4 Regions, planted with key pesticide species seedlings
Indicator 2	Seed supply and increased seedling production of pesticide species in nurseries to ensure individual needs and continuity of cultivation
Indicator 3	Data on the survival and growth of seedlings in the plots collected and assessed annually

Output 5

Increased awareness of pesticide plant use for organic cotton production among policy makers in Mali (CMDT/Dept. of Agriculture/Dept. of Forestry)

Indicator 1	Dept. of Agriculture/Dept. of Forestry use project guidelines for managing sources of wild native pesticide plants
Indicator 2	CMDT promote the establishment of community gardens for pesticide plants for organic cotton in their best practice guidelines and advertise the newly established suppliers of optimal organic pesticide
Indicator 3	CDMT, Dept. of Forestry & Dept. of Agriculture initiate discussions with stakeholders (including NGOs such as Helvetas and TreeAid) to replicate the project model in other communities in Mali.

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	Verified base list of organic species established and published
Indicator 2	Key pesticide species used by cotton producers been studied and their relative effectiveness established and published
Indicator 3	A standardised production unit and usage methods of pesticide plant products created in each of the regions for organic farmers

Indicator 4	A community garden/woodlot of pesticide plant species created in each of the four regions
Indicator 5	Reference materials for the identification and cultivation of key pesticide species in Mali produced and distributed to farmers

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	Plant research investigations are successful and not particularly challenging for the target species. <i>The risks of challenging research on important compounds and extraction methods can affect the standardisation of pesticide products. However the combined expertise of Kew and NRI will be mobilised to minimise these risks.</i>
Assumption 2	Community members remain engaged, receptive to training and provide labour and land for growing and maintaining priority species in the woodlots. <i>This risk is minimised because organic production is the identity of the target MOBIOM group of farmers, who had already approached Kew to request a support in cultivating native pesticide species</i>
Assumption 3	Minimum decision-making staff turnover at national level in the key departments of CMDT, Agriculture and Forestry ministries. <i>Staff turnover in the key departments can affect the implementation of the findings as a policy for sustainable organic cotton/crop production. Such a risk is minimised because the project will reach out and build a relationship with a number of key people remaining in post.</i>

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.

Output 1 <i>Identification and authentication of pesticide species currently used by organic cotton farmers in target communities.</i>	
Activity 1.1	Survey through questionnaires and desk study on pesticide plant species used in organic cotton production in Mali
Activity 1.2	Field trips and collection of pesticide species specimens (known scientific and local names, seeds, herbarium specimens and photographs)
Activity 1.3	Verification research on collected specimens at Kew Herbarium and Millennium Seed Bank (MSB)
Activity 1.4	Compilation of data from Kew and other databases, regarding candidate species seed collecting, handling, germination and propagation. Preparation of species pages (including field photographs).

Output 2	
<i>Active compounds / ingredients in the key pesticide plants being used by cotton producers are identified and relative effectiveness of different species established</i>	
Activity 2.1	Collection of specimens for by-product extraction and study in the laboratories in Mali and at Kew and efficient extractions by communities in Mali
Activity 2.2	Bio-assay and identification of chemical composition of collected specimens, mainly at Kew
Activity 2.3	Tests on pests of the extracted compounds in the field with communities, leading to standardisation of ingredients/composition and guidelines for use

Output 3	
<i>Four small-scale organic pesticide producers established and trained to supply optimum standard organic pesticides to cotton farmers.</i>	
Activity 3.1	Develop improved methods for harvesting and efficient protocols for by-product extraction that optimise bioactivity and reduce over-collection and wastage
Activity 3.2	Training workshops for pesticide producers on preparation and presentation of standardised products (at least two trainer farmers per region)
Activity 3.3	Develop IPR, farmers' ownership and product registration protocols for organic cotton production according to the regulations in place in Mali
Activity 3.4	Exploit local industrial investment opportunities and economic markets to promote the use of optimum standard organic pesticides, similar to the traditional medicine model in Mali

Output 4	
<i>Four community demonstration gardens established to strengthen the capacity of target communities to cultivate pesticide plants. This will provide an alternative to wild plant harvesting and ensure sustainable supplies of key plants in the future</i>	
Activity 4.1	Generate data on propagation methods for listed pesticide plant species, rare and/or commonly used by farmers in the four regions (also for journal articles)
Activity 4.2	Train, collect seeds of selected key species and produce enough seedlings in communities nurseries
Activity 4.3	Plant out seedlings in communal demonstration plots (at least 1ha x 4) and establish community ownership for long term management and further development.
Activity 4.4	Organise farmer and NGO workshops to inform the wider farming community about sustainable use of pesticide plants and their cultivation.
Activity 4.5	The benefits of cultivating pesticide plants for organic production promoted through farming fairs, exhibitions (video) and local radio.
Activity 4.6	Reproduction of guide/hand book, leaflets and posters through Kew Publishing (in local language)

Output 5	
<i>Increased awareness of pesticide plant use for organic cotton production among policy makers in Mali (CMDT/Dept. of Agriculture/Dept. of Forestry)</i>	
Activity 5.1	Present research findings and guidance to and organise farmers' field visits of woodlots for CMDT directorate who provides technical advice to farmers regarding cotton production
Activity 5.2	Present project findings and guidance to and organise farmers' field visits of woodlots for Dept. of Agriculture directorate who provides technical advice to farmers regarding sustainable farming
Activity 5.3	Present project findings and guidance to and organise farmers' field visits of woodlots for Dept. of Forestry who manages and advises farmers regarding conservation and sustainable use of non-timber forest products.

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
Output 1 Pesticide species identified and authenticated	30	x	x	x	x	x	x	x	X		x	x	
1.1 Survey through questionnaires and desk study on species		X	X						X				
1.2 Field trips and Collection of pesticide species			x	X				X	X				
1.3 Botanical and biological research on collected specimens			x	x	X	X	X	X	X				
1.4 Compilation of data from Kew and other databases			x	x	x	x	x	x	x		x	x	
Output 2 Compounds / ingredients in pesticide plants identified	30		x	x	x	x	x	x	x	x		x	x
2.1 Collection of specimens for by-product extraction and study			x	x		x	x		X				
2.2 Bio-assay and identification of chemical composition			x	X					X	X			
2.3 Tests on pests and standardisation				x	x		x	x	X			X	
Output 3 Small-scale organic pesticide producers established	18						X	x		X	x	x	x
3.1 Develop improved methods for harvesting and extraction							X	X		X	X		
3.2 Training workshops on standardised by-products							X	X		X		X	
3.3 Develop farmers' ownership and product registration protocols										x	x	X	
3.4 Develop local industrial investments and markets												x	X
Output 4 Four community demonstration gardens established	33	x	x	x		x	x	x	x	x	x	x	X
4.1 Generate data on species propagation methods								x	X			X	
4.2 Train, collect seeds and produce seedlings		X	x	x		x	x	x		x	X	X	
4.3 Planting seedlings and maintaining demonstration plots			x	x			x	x			X	X	
4.4 Farmer and NGO information workshops								X	X		X	X	X
4.5 Promotion via farming fairs, exhibitions (video) and local radio										x	x	x	x
4.6 Reproduction of guide/hand book, leaflets and posters										X	X	X	X
Output 5 Increased awareness of pesticide plant use for organic cotton production among policy makers in Mali	18							x	x	x	x	x	X
5.1 Present research findings and organise field visits (CMDT)								X		X	X	X	X

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Activity	No of Months	Year 1				Year 2				Year 3			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
5.2 Organise field visits of woodlots for Dept. of Agriculture								x	x	x	X	X	X
5.3 Presentation of project findings to national policy makers										X	X	X	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)

Kew will oversee the technical and financial management of the project and an "adaptive management" approach will ensure that the assumptions which were identified during project planning are regularly revisited.

A management team will be set up comprising the principals in the project (M Sacande, S Sanogo, P Stevenson). This group will have quarterly teleconferences, and Sacande and Stevenson will meet face-to-face with Sanogo and MOBIOM at least once a year. These management meetings will allow the project logframe to be updated and adapted based on progress. A final workshop involving stakeholders will enable the success of the project to be evaluated close to its end, permit recommendations to be made on any future activities, and review the implementation of the project's exit strategy.

A participatory approach to M&E will ensure transparency and help ensure that the project team is held to account by the target beneficiaries. MOBIOM farmers will gather feedback at their bi-annual AGMs, which will allow project activities to be revisited and adapted if necessary.

Indicators and baselines

(1) *Household surveys and questionnaires* – surveys will be carried out through three sets of questionnaires to collect data and information from beneficiary farmers. These data will refer to and include surface area cultivated/yields, pesticide treatment used and regimes/number/period of applications, supply/amount of material currently used, etc. A baseline survey will establish the context before the project intervention in all MOBIOM cooperatives. Then similar questionnaires will be run in Yr2, during intervention when standards are set, and then again in Yr3 after applying standards at the second production year. Comparative analyses will allow the assessment of progress against targets. Poverty scorecards will also be used to collect baseline information¹.

(2) *Field surveys at beginning and end of project*- We plan to run two technical field botanical surveys at the beginning and the end of the project. These surveys will include specific collection of information on the populations and stands of the key pesticide species and also sourcing/supply/amount of pesticide plant products used by MOBIOM farmers. The results will help assess progress on reducing losses/wastage and improving the conservation status of the species.

(3) *Reports* - 6-monthly and annual progress reports will be provided in a timely manner. These reports will capture progress on standards, increase in yields, quality and income generation. They will also collect information on the number of species collected, seedlings produced, planted and established (with growth rates) in the demonstration woodlots in the four regions. This will appear in IER, MOBIOM and Kew annual project reports.

Impact evaluation

An external consultant will be commissioned to do a project evaluation in year 3, with a particular focus on poverty reduction at a household level. The baseline information that will be collected (e.g. the poverty scorecards) will assist this evaluation. Lessons learnt from the project (positive and negative) will be shared during the last workshop to inform other projects and recommendations will be made to policy makers (CMDT/Agric/Forestry).

¹ E.g "Progress out of Poverty Index: A Simple Poverty Scorecard for Mali"
(http://www.microfinance.com/English/Papers/Scoring_Poverty_Data_Entry_Documentation_Mali_EN.pdf)

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)

A total budget of £321,487 needed for the implementation of this project including 80% (£258,540) requested from Darwin Initiative and 20% (£62,946 as matching funds) from other sources. 67.5% of the DI funds in this project will be invested in Mali. A large proportion of this will be going directly to the communities to support 8 Village Technicians, seed collecting and seedling propagation, and for small-scale plant pesticide business. In addition, 8 people will be fully employed and 5 other will receive between 25-75% salaries in the project.

The investment of DI grant will directly benefit the 3,150 women farmers out of 10,500 MOBIOM organic farmers (a ratio of £258,540/10,500 = £24.62 per farmer by Yr 3), supporting them with standardised plant products for their production. This is a longer term investment as knowledge will remain with the communities into the future. In addition, guidance and standards will help increase efficiencies, which in turn will reduce production inputs and hence increase benefits and income by 10 to 25%. Such best practice will go a long way to protect useful species in the wild.

Professional and consultancy costs have been estimated from previous multi-partner projects Kew has delivered in Africa. The increase cost in Yr 3 is justified by the deployment and applications of findings and standards that will be gathered in the first two years. Capital costs have been estimated by in-country partners based on local prices. Inflation provision has been estimated at 3% per annum on salary costs. Currency inflation, usually estimated at 5% per year based on previous work in Mali, has not been factored in the budget.

Staff, accommodation and utility overheads are estimated based on Kew's experience of running large international projects.

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**

Following the French/African military intervention which began in January, the situation of safety and security in Mali is still volatile, although the South remains unaffected. Repeated instability in the North has not affected agricultural production or community mobilisation in the South over the last two decades. We will continue monitoring the situation and consulting with in-country partners and government in Mali, as well as with the FCO and the British Embassy in Bamako (+223 2021 3412).

CERTIFICATION

On behalf of the trustees of

The Royal Botanic Gardens Kew

I apply for a grant of **£258,540** 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:

Name (block capitals)	Prof. Kathy Willis
Position in the organisation	Director of Science

Signed



Date:

2nd December 2013

Stage 2 Application - Checklist for submission

	Check
Have you read the Guidance Notes ?	✓
Have you provided actual start and end dates for your project?	✓
Have you indicated whether you are applying for DFID or Defra funding. NB: you cannot apply for both	✓
Have you provided your budget based on UK government financial years i.e. 1 April – 31 March and in GBP?	✓
Have you checked that your budget is complete , correctly adds up and that you have included the correct final total on the top page of the application?	✓
Has your application been signed by a suitably authorised individual ? (clear electronic or scanned signatures are acceptable in the email)	✓
Have you included a 1 page CV for all the Principals identified at Question 7?	✓
Have you included a letter of support from the main partner(s) organisations identified at Question 10?	✓
Have you been in contact with the FCO in the project country/ies and have you included any evidence of this?	✓
Have you included a copy of the last 2 years annual report and accounts for the lead organisation? An electronic link to a website is acceptable.	✓
Have you checked the Darwin website 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 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.