

# Darwin Initiative for the Survival of Species

## Annual Report

(for supporting documents, see bound Appendix)

### 1. Darwin Project Information

<b>Project title</b>	<b>Darwin Initiative Research Exercise on Community Tree Seeds (DIRECTS)</b>
<b>Country(ies)</b>	UK / sub-Saharan Africa
<b>Contractor</b>	Seed Conservation Department, Wakehurst Place, Royal Botanic Gardens, Kew
<b>Project Reference No.</b>	162 / 12 / 001
<b>Grant Value</b>	£187 k
<b>Start/Finishing dates</b>	June 2003/June 2006
<b>Reporting period</b>	30 April 2005 (for the period June 2004 - March 2005)



## 2. Project Background

Forest biodiversity, especially the multipurpose trees, supports the daily life of millions of people in sub-Saharan Africa. Nonetheless, they are disappearing at a rate of 1% a year. The identified priority tree species of the region for investigation in this project occur mostly in vulnerable areas of dryland Africa, are of known use, and over 30 % are red-listed by IUCN. Although the need for the conservation and sustainable use of these species is clear, appropriate protocols for handling seeds of these species are far from optimal. The 4th Workshop for African Tree Seed and Biodiversity Centres (Burkina Faso, 2001), highlighted the need to strengthen the limited expertise of, and experience in, seed conservation techniques in institutes across Africa. Research, capacity building and networking on seed provision, storage and use will contribute to this urgent need. Hence, DIRECTS' purpose is to enhance the capacity of sub-Saharan African tree seed and biodiversity institutes to conserve and sustainably manage native species of local importance (about 60 species), through research on tree seed biology, training and information exchange.

## 3. Project Objectives

DIRECTS' purpose is to enhance the role and capacity of institutes in the conservation and sustainable use of native tree seeds of community value. The project will ensure the transfer of the benefits of the knowledge and expertise gained during the last decade by the Seed Conservation Department (SCD, including the MSB Project) in seed science and technology, including on African tree species. African scientists will be trained in topics including seed physiology, desiccation tolerance mechanisms, storage potential and germination methods. They will then apply this knowledge to the SAFORGEN priority list of African tree species in need of conservation and sustainable use. Working with SCD and IPGRI, as a network, they will generate further knowledge concerning these indigenous species and develop better protocols for seed collection and handling. The scientists will thus become better able to sustainably conserve African genetic biodiversity. Furthermore, the resultant body of linked and confident African seed scientists will be well placed to advocate for, and enhance national biodiversity policies.

The overall objectives of DIRECTS have not changed, but the operational plan for Year 2 was modified. It was agreed that the web development work would be moved into Year 2. At the time of the half-year report in Year 1 (Oct 03), we noted that negotiations over the MoUs with the wide range of target (16) countries had delayed the initiation of the field and lab activities in country, and requested that any under-spend on such activities be carried into Year 2. We received no specific comment from the Darwin Secretariat (monitoring unit) on this suggestion. In addition, we noted that the list of target species had been expanded to > 80 species, based on the group work at the UK workshop. This was necessary as the SAFORGEN list included three genera (*Combretum*, *Entandrophragma*, *Terminalia*), to which we have now added named species.

## 4. Progress

### History

The project concept was born following the 4th Workshop for African Tree Seed and Biodiversity Centres (Burkina Faso, 2001), at which a request was made for international agency support to strengthen the limited expertise of, and experience in, seed conservation and use techniques in institutes across Africa. This project was developed with the managers of the partner institutes via meetings, email / fax, including the SAFORGEN member countries. It took more than a year, approaching and seeking letters of support/interest from partners. All have enthusiastically supported the aims of DIRECTS, and all partner countries have a long-term commitment to work on indigenous biological material, as part of their developing national policies under the framework of the CBD. Specifically, the DIRECTS project directly and practically responds to Target 8 of the Global Strategy for Plant Conservation (GSPC), which states that at least 60% of endangered species be accessible as *ex situ* collections preferentially in the countries of origin, and that 10% of these species be incorporated within re-vegetation and eco-system restoration programmes.

### Key developments in 2004-05

#### April – June 2004

*First year DIRECTS report* was completed and submitted on time in April 2004. The report was dispatched to the DIRECTS Kew Advisory team, plus the Director and Head of Department. It was also sent to IPGRI. Six countries' annual reports were received on time and six other reports were handed in later (between April and June 2004). Matching the reports with the 12 signed MoUs revealed that both Botswana and Mali had not signed their MoUs but provided a report, while Benin who had signed its MoU did not. Two more completed MoUs were thereafter received from Cape Verde and Mali, bringing the total Agreements to 14 at the end of June 2004; only Botswana and Kenya were likely to sign in the near future.

*Presentation:* MS presented the objectives of the DIRECTS Project to the Forest Tree and Shrub Seed Committee of the International Seed Testing Association (ISTA) during their 27<sup>th</sup> Seed Congress in **Budapest** in May 2004. MS was invited to join HWP (vice-Chair) on the Committee. The overall objective was to raise awareness of the Project and to argue for ISTA to work more on tropical tree (rather than temperate) species of sustainable value.

*Support visits:* MS travelled to **Malawi** (5 working days) to visit partners at the Forestry Research Institute (FRIM) to help with protocol application and project development. This visit was supported by gift-in-kind from the MSBP.

*Lab studies:* As stated in the Annual Report (April 2004), research work by the partners had started on about 30 species towards the end of Year 1, leading into this period.

*Back-up research at SCD:* Two species were studied for germination, desiccation tolerance and chemical composition (lipids; see Appendix 6).

## July – Sept 2004

**Support visits:** In August, MS visited partners at CNSF, Ouagadougou, **Burkina Faso** (5 days), to help with protocol application and project development. He also had a meeting with Mr Yacouba Ouedraogo, co-ordinator of **TreeAid** West Africa, to discuss shared interests in sustainable use (in Burkina, Mali, Ghana and Ethiopia). The meeting explored how the research outcomes of the DIRECTS Project can benefit village nurseries (supported by TreeAid) to raise seedlings of native species for planting. DIRECTS could provide 1) information on the collection of quality seeds and other aspects of seed handling (e.g. germination and storability) and 2) technical advice/support. A list of DIRECTS species has been submitted for consideration to Tony Hill, the Programme Support Director of TreeAID at Bristol. MS also visited **Ghana** (5 days) and **Mali** (3 days) to help with protocol application and project development. Visits to all three countries were supported by gift-in-kind from the MSBP.

**Communications:** Kew set up the **DIRECTS bulletin board** in September 2004 (and in October 2004 the collaborators started to use it; traffic is light and we aim to promote strongly its use in Year 3). In October, IPGRI finally agreed to develop the **DIRECTS website** and to host it under the SAFORGEN programmes. They requested information (including images) from the partner institutes by the end of November 2004.

**Kew Advisory Committee** met on 25<sup>th</sup> October at Wakehurst Place to discuss the project. Our position on trying to find funding for a mid-term meeting was supported and Dr Paul Smith who agreed to raise the matter with the MSBP. Also, MS and HWP pursued IPGRI regarding funding, and IPGRI kindly offered to waive their web costs in deference to the workshop objective. So there was the possibility of a joint DIRECTS, MSBP, IPGRI workshop in March 2005. This workshop could be used as a ‘reality check’ of how and what African partners/scientists are delivering in terms of seed science since the beginning of the project and to re-consider exit strategies for the partners.

**Finance:** The money to DIRECTS partners who had signed MoUs was transferred in September, except for Togo who informed us that for the first part of the year they were able to carry forward the budget from last year to support their studies. Their financial needs were reviewed in the coming months.

**Back-up research at SCD:** 20 species obtained from partners were studied for germination and chemical composition (lipids; see Appendix 6).

## October – December 2004

**Half year DIRECTS report** was completed and submitted on time in October 2004. MS contacted the **OECD** Scheme for Quality Control of Forest materials (seeds and plants) for trade and all related information has been sent to DIRECTS partners for consideration. Only SNGF Madagascar is already part of the Scheme. MS will keep facilitating the contact with OECD who is interested to contribute to a DIRECTS workshop to discuss formality and functionality of the Forestry Scheme. The partners however, have to apply nationally. All DIRECTS partners have also been informed about the library information system **AGORA** for consideration, to which they can (have to) subscribe institutionally, free of charge (because of their low GDPs of the countries).

We also had positive feedback from Michael Muschick, Secretary General, **ISTA** about ISTA also being involved in the seed leaflets when we met him at the ISTA Congress.

**Support visit:** MS travelled to **Madagascar** in November where 2 working days was spent visiting partners at the Silo National de Graines Forestieres (SNGF) to help with protocol application and project development. This visit was supported by gift-in-kind from the MSBP.

**Back-up research at SCD:** MS ran 5 species, including *Combretum micranthum*, *C. nigricans*, *Grewia bicolor*, *Pterocarpus lucens* and *Sterculia setigera*, on the thermogradient plate, revealing broad patterns in the control of germination by temperature. Seeds of five more species were placed in a few incubators. In addition, all these 10 species obtained from partners (Burkina and Malawi) were assessed for seed fat / oil (see Appendix 6).

### **January – March 2005**

One more completed **MoU** was received from Botswana, bringing the total Agreements to **15** out of the 16 partners; only Kenya remains to sign.

The proposed mid-term workshop in March 2005 will not be held due to a shortage of funding.

**Finance / staff:** Most of the budget was spent by the end of the financial year (2004-05), except for about £500, plus the £2500 that Des Bennett has asked Defra / DI to carry forward to next year. This money represents £500 for each of five institutes whose work has been hindered this year due to slow activity (judged by reports, or lack of them), political uncertainty and problems drawing down the budget (e.g. Nigeria). However, there should be sufficient money to support lab studies in all collaborating countries in 2005 – 06 at an average of about £1500 per institute.

**Publications / species reports / communications / website:** Two articles appeared even though they have 2004 publication dates: one in 'Plant Genetic Resources Newsletter, the other in 'Forest Genetic Resources' (see Appendix). Also the Annals of Forest Science paper on *Garcinia kola* has been reviewed to take into account recent data from Cote d'Ivoire, and will be resubmitted later as a collaborative article. There are drafts developing on work on *Khaya anthotheca* (with FRIM, Malawi) and *Khaya madagascariensis* and *senegalensis* (with SNGF, Madagascar).

Following discussions at the ISTA meeting in Budapest in May 2004, MS had been in contact again with OECD concerning their certification scheme for provenance material. The scheme aims to align national seed quality assurances for tree seeds with international standards. SNGF are already in the scheme and a few other institutes (e.g. CNSF, Burkina Faso and TTSA, Tanzania) are interested in joining. The cost of registering is about £500. DIRECTS will not support these costs.

IPGRI have agreed to put the c. 20 pp of information on the DIRECTS project prepared so far by MS onto the IPGRI website by the end of March 2005. Although still under construction, this is now available live at [www.ipgri.cgiar.org/SSA/SAFORGEN/DIRECTS.html](http://www.ipgri.cgiar.org/SSA/SAFORGEN/DIRECTS.html) (from end March 2005). Several parts of the Website will be updated soon (see Appendix 7).

**Lab studies:** Three other species obtained from partners (Burkina, Cote d'Ivoire and Madagascar) have been assessed for seed fat/oil (see Appendix 6).

### **Publications:**

**1. Development of Seed leaflets:** Seed Leaflets on 31 species have been drafted in preparation for submission to Danida Forest Seed Centre for publication (see Appendix 6), who have agreed to publish them, badged with the Darwin Initiative, partner, Millennium Seed Bank and DFSC logos. Because the mid-term workshop did not take place, permission was sought to use some of this money to recruit a postgraduate student to help with seed leaflet development. Helen Vautier's three month support was appreciated. These reports will form part of the DFSC series 'Seed Leaflets', but with more information than usual on conservation, seed biology data and on handling methods. All 31 species this year avoid the c. 14 species from the SAFORGEN list that have already been published. We will see if DFSC will accept re-drafting of the leaflets for these 14 species.

The species reports in the Final Workshop proceedings will be far more detailed than the 'Seed Leaflets'.

**2. Published:** Sacandé M, Pritchard HW and Dulloo EM. (2004). Seed science and technology needs for SAFORGEN trees for conservation and sustainable use. *Plant Genetic Resources Newsletter* **139**: 54-59.

Sacandé M, Pritchard HW. (2004). Seed Research Network on African Trees for Conservation and Sustainable Use. *Forest Genetic Resources*. **31**: 31-35. Forest Division, FAO;

**In press:** Sacandé M, Pritchard HW. (2004). African tree seed conservation research: opportunities and implementation. In: Shahina A Ghazanfar & H Beentje (eds); *Proceedings of the 17<sup>th</sup> AETFAT congress, Addis Ababa, Ethiopia*. RBG Kew, London, UK (expected April 2005).

### **Difficulties**

**MoUs:** The project was slightly affected in Year 2 by the late signing of agreements by two key countries, Botswana (recently in February 2005) and Kenya (still yet to be considered). We estimate that this may have an impact on information generation on about 10 species out of the 59, plus some extra species identified at the workshops.

**Reports and monitoring:** As in year one, there have been delays in receiving both annual and 6-monthly reports from partners. For example, we are still waiting for 9 reports out the expected 15, which were all requested in February 2005 and expected in April.

- The DIRECTS scientists in Cape Verde were on leave for academic training abroad, which temporary reduced the project activities at INIDA. Despite regular attempts, we are still not sure about receiving a report this year.

- Malawi: the DIRECTS researcher at FRIM has moved to another institute. His replacement has just been made but still needs a bit of time to get used to the protocols and lab activities.

- Understandably no report may be provided by Kenya because of the non signing of their MOU. Mrs Helida Oyieke, Head of Research and Scientific Affairs (NMK) was asked at the DI workshop (April 2005) to enquire why KEFRI have not signed.
- The team in Nigeria (Awolowo University) encountered institutional difficulties in withdrawing the DIRECTS money for their activities and have asked to change the transfer system. We have addressed a letter to the University authorities and are expecting a positive denouement for the group to access their money in order to carry out activities.
- Although last year we did not encounter any problem in transferring the DIRECTS money to Ghana (FORIG), we are still tracking the Year 2 money that has been sent out since September 2004 but has apparently not been received in the FORIG account.

We were rather careful about issuing funds for Year 2 until we were confident that studies were on-going, and thus we probably contributed to some delays in the lab/field activities. So far, the two observed standards for the reports delivered on time are: (a) high quality reports (n = 3 against n = 6 for Year 1) with detail information on species and research data; (b) medium standard reports (n = 3 against n = 5 for Year 1) with less data and detailed information but more management wording. Overall, the reports from Years 1 and 2 show that research activities were initiated by all partners, and these are leading to the generation of data on the listed species.

We have concerns about the difficulty of following up partners' activities across a big network, and have tried to alleviate these by **making visits to 4 countries in the first 6 months** of this report year. This has helped to improve this year's outcome regarding species work. Overall, > 30 species have been worked on and > 30 species leaflets written (using new information and data from the grey literature).

**IPGRI:** Although we offered twice to visit Rome, it was not possible to set up a meeting with IPGRI and email discussions took many months in the first part of this report year. As a consequence, the web page development was delayed, but we received a commitment from IPGRI in October 2004 to launch the site, before the end of this report year. The first pages of the website were launched in March 2005. About 50 more pages are already with IPGRI for launching soon. These include introduction to the institutes and reports on their key activities and collaboration on 10 of the 15 countries (see examples in Appendix 7).

**Table. Summary of partner countries' activities**

Country	Signed MoU	Species work	Description	Cascaded Training	Drafted Seed leaflet	Web page information
Benin	Yes	No report yet				
Botswana	Yes	No report yet (+Y1*)				
Burkina Faso	Yes	<b>5 species (+Y1)</b>	Germination and storage studies		Contributed	Submitted
Cape Verde	Yes	No report yet				
Cote d'Ivoire	Yes	<b>5 species (+Y1)</b>	Development and Germination studies		Contributed	Submitted
Ethiopia	Yes	<b>4 species (+Y1)</b>	Germination studies	2 d for 11 technicians and 3 field workers		Submitted
Ghana	Yes	No report yet (+Y1)			Contributed	Submitted
Kenya	<b>No</b>	No report yet	-		-	-
Madagascar	Yes	<b>6 species (+Y1)</b>	Germination and storage studies; Development studies		Contributed	Submitted
Malawi	Yes	No report yet (+Y1)	-		Contributed	
Mali	Yes	<b>7 species (+Y1)</b>	Collection and development studies	3 w for 4 vocational trainees		Submitted
Niger	Yes	No report yet (+Y1)	-		Contributed	Submitted
Nigeria	Yes	No report yet (+Y1)	-			
Tanzania	Yes	No report yet (+Y1)	Development studies			Submitted
Togo	Yes	<b>7 species (+Y1)</b>	Species information and Germination studies		Contributed	Submitted
Uganda	Yes	No report yet (+Y1)	-			Submitted
<b>Total</b>	<b>15</b>	<b>34 species (incl. 4 overlapping)</b>		<b>17 staff + 88 person days</b>	<b>31</b>	<b>10</b>

\* Year 1 report had been received

The species data relates to seed development, germination and storage. In combination with the first year activities, there are still 14 of the original 62 species on which no testing has yet started, including *Azelia quanzensis*, *Aningeria altissima*, *Aucoumea klaineana*, *Baikiaea plurijuga*, *Colophospermum mopane*, *Commiphora Africana*, *Dacryodes edulis*, Moctar Sacande and Hugh W. Pritchard (Royal Botanic Gardens Kew, Wakehurst Place, UK):



*Daniellia oliveri*, *Garcinia epunctata*, *Gnetum africanum*, *Maerua crassifolia*, *Pausinystalia johimbe*, *Pterocarpus angolensis* and *Triplochiton scleroxylon*. In addition, work has not been initiated / reported on any of the 6 *Entandrophragma* species. Although we continue to encounter relatively slow progress in some countries, we are aware not to expect too much lab work for the very modest level of support provided to all 15 countries. The important issue is that the 5-year agreements have reinforced the notion that a long-term perspective on community tree seeds is needed in-country and access the network.

### Project design

The basic design is intact, although the target list of species for conservation and sustainable use has been expanded, at the partners' request. Also the delays to the completion of the MoUs had a knock on effect with respect to the transfer of monies overseas, and consequently, work has been initiated on 34 species after two years of the project, which is just over 50% of the total number of species. We now propose to work on and write up 30 species reports in Year 3, rather than the original plan to produce 15 reports in this final year.

We have agreed with Dr Paul Smith, a MSB international co-ordinator and also member of the Kew Advisory Committee that the MSB will pay for additional species work at SNGF, Madagascar and NTSC, Botswana. In addition, the exit strategy with respect to the MSB Project will be in place as 5 of the 15 countries in DIRECTS are MSB Project signatories. As far as the network is concerned, there seems to be considerable desire to think longer-term and to consolidate the in-country activities, which may be suitable for further DI or other, support. We aim to ensure that any remaining species work in the 5 MSB countries, will be supported by the MSB project.

### Plan for 2005 – 2006 (based on original log frame; new items or changes in italics)

Date (2005-06)	Key milestones
Dec 05	Complete 15 species' research and conservation reports, submit 3 papers for publication,
March 06	<i>Complete and submit 30 species reports for publication as 'seed leaflets'</i>
June 06	Hold final project workshop in <i>Ghana</i> (to be confirmed). Conserve bankable species in <i>national</i> seed banks as seed as long-term investment.
July 06	Complete editing the conference proceedings, and send to press Submit final report

## **5. Partnerships**

### **Collaborations**

The willingness of such a wide range of partner countries to carry out experiments and generate data on these priority species is tremendously encouraging and reveals a serious commitment which we hope to build on in Year 3 and thereafter. On the other hand, the slow / late submission of reports by a number of the partners needs careful monitoring and with a restricted 'activities' budget we may need to invest more heavily in some countries than others. For example, Cote d'Ivoire is asking for more money, as they have a PhD programme supporting part of the research activities.

Mindful of the comments from the reviewer last year, we have shared information with other groups with similar interests (mainly associated with tree nurseries), e.g. the International Tree Foundation (Uganda, Rwanda) and TreeAid (UK Forestry NGO working in Burkina, Ghana, Ethiopia), and OECD Forestry Scheme, and previously with Prof Patrick DuJardin's plant biotechnology (sustainable use) network. In addition, we have spoken with CABI Biosciences about the Good Seed Initiative (Kenya, Tanzania, Uganda); although focusing on agricultural seeds, we have a shared interest in the handling of quality seeds to maximise the sustainable use of species and may have knowledge to share. However, we have not attempted to initiate formal collaborations.

## **6. Impact and Sustainability**

The profile of the DIRECTS project at the MSB, IPGRI and in partner countries such as Botswana, Burkina Faso, Cote d'Ivoire, Madagascar, Niger and Uganda is very high and actively promoting biodiversity conservation. For example, the DIRECTS research model is being used by the 5 MSB partners, i.e. Botswana, Burkina Faso, Madagascar, Malawi and Mali to cover other species work as a key component of these institutes' research programmes. The African tree seed network has been also mentioned as a model of regional seed conservation network to be developed by the MSB project. In addition, for this year, two country (Ethiopia and Mali) reports received so far have indicated that the training received during the workshops in 2003 has been cascaded to 15 under-graduates, vocational trainees and field workers, which improved capacity for the project activities. On the other hand, the profile of the project in for instance Benin and Cape Verde, is not clear, as Annual Reports have not been received yet, though they promised to do so.

IPGRI's commitment to stage DIRECTS website under SSA/SAFORGEN programmes was a good step forward to the functionality of the established network and toward a sustained exit strategy of the project.

## **7. Post-Project Follow up Activities (max 300 words)**

The initiation of the field and lab activities in all partner countries was delayed, thus reducing the planned time frame to run the full DIRECTS project. By the end of the project in June 2006, the 15 MoU signatories will have executed 414 months of project activities as opposed to the aimed for 540 months. The prospect that the agreements are for 5-year duration has however, reinforced the notion and expectation that a longer-term perspective is needed in-country.

All Year 2 reports (received so far) show a substantial amount of experimental data, and we are informed that all partners who have received DIRECTS money have initiated field/lab activities. So far, the project activities have covered 34 out of the 62 priority species (55%), leaving 28 plus any of the ‘additional’ species to be dealt with in the last Year 3. Unlike some of the Year 1 reports, no Year 2 report has explained that administrative procedures were being put in place in order to commence the project activities. Partners’ confidence in carrying out experiments and their understanding of the data have been mentioned previously and reiterated in some of the actual reports, and were formulated as a request and reason for holding a ‘reality check’ mid-term workshop. Whilst this has not happened, we are encouraged that the support visits to 5 countries have been very effective, resulting in improved data gathering. Other partner countries have requested the assessment of their performance in order to redress some of the technical deficiencies and to critically review their data.

The project managers would like to:

- 1) recover the lost 23% of time and ensure full closure and report on all 62 species work;
- 2) continue to fund network activities in Year 4, through country links and by introducing new partner countries (e.g. Senegal, Rwanda, etc.)

We are anxious about a premature interruption of both the project activities in country and the network at the conclusion of this funding period, as they are not yet consolidated and made self-sustained.

## 8. Outputs, Outcomes and Dissemination

**Table 1. Project Outputs** (According to Standard Output Measures)

Code No.	Quantity	Target	Description
17A	Electronic communication;  DIRECTS live website	Exceeded  Met, March 05	Bulletin Board ( <a href="mailto:DIRECTS@RBGKew.org.uk">DIRECTS@RBGKew.org.uk</a> ) for the partners (September 04) and the website have been established. The BB is also being used to exchange information.
4C, D, 8,	Aspirational support training during country visits as possible with MSB budget	Exceeded	Sacande = 4 weeks support visits in 5 countries (BF, Ghana, Madagascar, Malawi and Mali)
14B	Budapest ISTA congress	Met	Oral paper given at the ISTA Tree and shrub seeds Committee, Seed congress in Budapest Hungary
11A 11B	3 paper submitted	Exceeded	Three papers submitted (Y1+2) with two papers published (see Appendix 8)
10, 11B	Produce 30 species' research reports	met ( but no conservation reports yet for IUCN)	Research progressed on 34 species and 31 seed leaflets have been drafted. The full conservation reports for IUCN recording will form part of the final report/meeting, but only for a selected number of species.

## Differences in actual outputs against those agreed

The important achievements this year were the acquisition of the three additional MoUs, the setting up of network electronic communication (BB) and information (website), although the latter was delivered significantly later than we hoped. These communication and information exchange systems have laid the foundations for a functioning African tree seed network over the coming years. We were also pleased and encouraged by the impact visits to partners in five countries seemed to have had on their species work. We will try to extend these support visits to other partner countries in Year 3, although this is not specifically budgeted for (MSB gift-in-kind).

Whilst we aimed for 30 species reports, research progressed on 34 species and 31 seed leaflets have been drafted. The full species chapters including the conservation reports for IUCN recording will form part of the final report/meeting. MS's training in IUCN Red List assessment (March 2005) has revealed that assessing conservation status of species is resources and time demanding. However, we plan to assess a number of targeted species in collaboration with some of the partners. These will be chosen mid-point in Year 3.

**Table 2: Publications**

<b>Type *</b> (e.g. journal paper, book, manual, CD)	<b>Detail</b> (e.g. title, authors, journal, year, pages)	<b>Publishers</b> (name, city)	<b>Available from</b> (e.g. contact address, email address, website)	<b>Cost £</b>
International Scientific journal	Seed science and technology needs for SAFORGEN trees for conservation and sustainable use. Sacandé M, Pritchard HW and Dulloo EM. (2004). Plant Genetic Resources Newsletter <b>139</b> : 54-59.	International Plant Genetic Resources Institute (IPGRI)	www.cgiar.ipgri/publications/	0
International Conservation journal	Seed Research Network on African Trees for Conservation and Sustainable Use. Sacandé M, Pritchard HW. (2004). Forest Genetic Resources. <b>31</b> : 31-35.	Food and Agriculture Organization (FAO)	www.FAO.org/Forestry Division/	0

## Dissemination activities in country

The dissemination activities in country have been difficult to assess and little has been reported. However, the 16 target countries are receiving advice, technical information and documentation from Kew (e.g. SAMARA, Kew Scientist, etc.). More direct dissemination via articles (press and science) is expected in Year 3, and the website can be used for this purpose.

## 9. Project Expenditure

**Table 3: Project expenditure during the reporting period** (see also the report of Des Bennett [Kew])

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Item	Budget	Expenditure	Remainder for 2005-06
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### Variations compared to the original budget

## 10. Monitoring, Evaluation and Lessons

### Year 3

**Final workshop (March 2006):** The details of this workshop need to be consolidated in the next three months or so, enabling discussion at the next Advisory committee meeting (in July 2005) and early advertisement. The aim is to have around 50 people attend, including MSB Project partners from 4 -5 countries. IPGRI, OECD and IUCN should be invited. It is still desirable to make conservation assessments for a proportion of the SAFORGEN listed species, at the national or global level. A shortlist of species for attention will be suggested, which can be flagged up with the collaborators to work on in the next year, with guidance on what information to record / access (e.g. population trends / grey literature). The objective is to complete the assessment paperwork at the Final Workshop.

It will be necessary to tap a range of funding sources, including IPGRI, Lennox Boyd Trust, Foundation at Kew, etc. MS / HWP will pursue funding options.

**Project continuation:** MS and HWP met with the DI Administration Team when they visited Kew towards the end of 2004. Advice was received that it may be better to seek new funding rather than an extension to the existing project. In which case, should the project focus on new partners / countries, new species or both? MS / HWP will contemplate the *raison d'être* for the work.

**Commonwealth Fellowships:** Paul Smith reported that plans are being made to use the Fellowships to support MSBP/DIRECTS partners from Malawi and Botswana in the coming year, and there is the possibility that the budget could include travel costs to the Final Workshop. MS will scrutinise the guidelines to see if this scheme could be used to part fund the Final Workshop.

Building the network is the bedrock for a successful project of this nature. The high take-up of MoUs (15 countries) and the submission so far, of 6 country Annual Reports (13 Year 1 reports received in Year 2), indicates that the network establishment is achieved and is gaining the trust of partners. The progress of the project as a whole has been regularly monitored and advice given by colleagues in Kew who sit on the DIRECTS Advisory Team. Significantly, the DIRECTS programme is evolving as the seed research programme for a handful partner institutes, who are now extending/applying this research methodology to many other species.

The main lesson from this year's work has been the need to be patient and cautiously optimistic about evaluation of the data provided. Even now there is some doubt that we will secure the participation of Kenya. This has been the reason to move the final workshop from Kenya to Ghana. We may visit IPGRI in Year 3 to discuss their role in an exit strategy, although we have lowered our expectations of how they can help in the project as it has become evident that they have other considerable commitments.

**11. Author(s) / Date**

12. Dr Moctar Sacande and Dr Hugh W. Pritchard / 30 April 2005

## Appendix: Logical Framework

Project summary	Measurable indicators	Mean of verification	Important assumptions
<b>Purpose</b>			
To enhance the role and capacity of institutes in the conservation and sustainable use of native tree seeds of community value	New knowledge on seed biology and conservation methods for up to 60 species generated and shared.  Staff conduct collaborative research within the network but also show evidence of independent work  Increased and effective inputs to national conservation policies and conservation agencies.	Methods protocols on seed harvest, treatment, etc. in circulation and use  Information incorporated into tree BAPs, and institutional role acknowledged by government / State in official documents  Seed holdings at institutes expanded to include many of the species.  Annual reports and staff publication lists.	Seed conservation protocols are accepted by all the SAFORGEN and SADC partners as a valuable component of CBD-related conservation action.  Researchers use increased knowledge to guide future programmes.  Institutes commit to find resources to ensure elevated levels of activity.
<b>Outputs</b>			
Increased research base for listed species.  Increased capability of institutes' staff to undertake and promote / disseminate seed research  Increased dialogue between institutes on all aspects relating to tree seeds and conservation targets.	Species' seed conservation reports for c. 60 sp (incl. species distribution information).  Number of species and research reports (literature) produced per institute increased, and c. 6 collaborative papers produced.  48 staff across 16 institutes effectively trained (primarily in country) on seed handling, etc.  Functioning web-based system in place	List of the published papers, conference reports, and the annual reports of the institutes involved  Compare training evaluation questionnaires (pre- and post-event)  Management meetings reports  Review traffic, number of hits on web site. Track enquiries, correspondence, etc.	Trained staff, competent in conducting the appropriate research and cascade training, are not assigned to other duties.  Institutes encourage staff to commit adequate time to writing up the species reports / papers.  In country resources promised are made available / committed and DI resources appropriately used.
<b>Activities</b>			
Training/planning workshop in the UK - Two regional workshops in Africa and final workshop.  In-country research investigation on tree seed conservation techniques  Conduct back-up research and data management (UK)  <i>Web-site and publications</i>	Yr 1: (July 03) UK-based inception workshop to discuss research/training protocols, participants' specific species of interest, administration issues, etc. (August 03) W-Africa training in Burkina Faso (in French). (Sept 03) - Training of E-S African partners in Ethiopia (in English). Yr 3: Final workshop in Kenya (timing to be decided, probably Dec05)  Yr 1: Research on 15 species, data collection, analysis, write species reports. Yr 2: Research 30 species, write reports and 3 multi-authored papers. Yr 3: as Yr 1, plus commit seed to long-term storage as an investment for the future  Yr 1: Compile current baseline data and draft review paper. Yrs 1 -3: Replicate experimental work when necessary and provide advice, i.e. back stop. Yr 3: Help edit proceedings  Yr 1: Plan, design web in consultation with DEFRA, IPGRI and partners. Yr 2: Fully functional web network. Yr 3: Maintenance and continuing use for information flow		