

# ***BUILDING CAPACITY FOR PLANT BIODIVERSITY, INVENTORY AND CONSERVATION IN NEPAL***

**DARWIN INITIATIVE PROJECT No. 162/12/030**



## **ANNUAL REPORT    2003~2004**



# Darwin Initiative for the Survival of Species

## Annual Report

### 1. Darwin Project Information

|  |  |
|--|--|
| Project Ref. Number  | 162/12/030   |
| Project Title  | Building Capacity for Plant Biodiversity, Inventory and Conservation in Nepal  |
| Country(ies)   | Nepal  |
| UK Contractor  | Royal Botanic Garden Edinburgh   |
| Partner Organisation(s)  | Royal Nepal Academy of Science and Technology, Kathmandu, Nepal (RONAST).<br>HMG Ministry of Forests and Soil Conservation, Department of Plant Resources, Kathmandu, Nepal (DPR).<br>Tribhuvan University, Central Department of Botany, Kathmandu, Nepal (TU-CDB). |
| Darwin Grant Value   | £112, 150 [£26,960 in Year 1]  |
| Start/End dates  | 1 <sup>st</sup> June 2003 - 31 <sup>st</sup> March 2006  |
| Reporting period (1 Apr 200x to 31 Mar 200y) and report number (1,2,3..) | 1 <sup>st</sup> April 2003 - 31 <sup>st</sup> March 2004, Annual Report No. 1  |
| Project website  | <a href="http://rbg-web2.rbge.org.uk/nepal/darwin">http://rbg-web2.rbge.org.uk/nepal/darwin</a>  |
| Author(s), date  | Dr Mark F Watson, Prof. Stephen Blackmore, Prof. Dayananda Bajracharya, 8 <sup>th</sup> July 2004  |

### 2. Project Background

For its area the Kingdom of Nepal is one of the most biologically diverse countries, with distinct ecosystems and great altitudinal range, even within short distances. However, unlike neighbouring countries, such as Bhutan, Nepal has no published Flora although an earlier Darwin Initiative project established an important taxonomic database. This provides a platform for documenting the distribution and conservation status of plants as basis for establishing conservation priorities and action plans and, ultimately, the preparation of a Flora. However, the baseline of reference collections in Nepal (e.g. the national herbarium, KATH) is incomplete, and trained taxonomists are few in number.

HM Government of Nepal's 9th Five Year Plan has recently prioritised institutional strengthening and human resource development for the management of biodiversity. In the light of this, RONAST approached RBGE, on behalf of the participating institutes, requesting assistance to fulfil this through the Darwin Initiative. The current capacity building Darwin Initiative project was developed from this collaboration and addresses these identified needs.

### 3. Project Purpose and Outputs

The purpose of the project is to strengthen the institutional base for plant taxonomy in Nepal (in particular the herbarium collections and staff at DPR and TU-CDB), so that Nepal has in-country reference collections of its rich flora and the necessary taxonomic expertise to meet its needs in responding to the CBD. Eighteen Nepalese scientists will receive training in field techniques of data recording and plant specimen collection, and the assessment of conservation status (according to new IUCN categories). Training will also be provided on modern herbarium techniques for collection management, documentation and utilisation. The aim is to provide the fundamental skills to enable Nepalese scientists to generate taxonomic information and to undertake conservation status assessments, including plant species and habitat action plans. All 18 participants will attend training workshops in Nepal and then, in groups, take part in field training in Nepal and attend a study visit to RBGE. Additionally, this training programme will develop the human resources needed for Nepal to contribute to international collaborative efforts towards a Flora of Nepal (coordinated by RBGE and involving institutions in Japan, Nepal, UK and USA). The Darwin Initiative project will contribute to the aims of the Global Taxonomy Initiative (GTI) and the Global Strategy for Plant Conservation (GSPC) established under the CBD.

The Logical Framework as approved in the modified Stage 2 application summarises the outputs and is reproduced in the Appendix to the current report. Details of the outputs and operational plan were finalised at the Edinburgh Planning Meeting in September 2003 and mirrors those in the approved Stage 2 application. This is recorded in a Gantt chart, also given as an Appendix to the current report. Specific outputs for the reporting year are treated in more detail in the following section.

Owing to political instability a modification was necessary for the timing of the first workshop: this was moved from November 2003 to March 2004. As this remained within the reporting year for the Darwin project, approval was not sought from the Darwin Secretariat. No major alterations are foreseen.

### 4. Progress

This project is an outcome of a meeting held at RBGE in May 2002 involving Prof. Bajracharya (RONAST), Dr Rajbhandari (DPR) and Prof. Shrestha (TU-CDB), and supported by The British Council in Kathmandu). It builds on collaborative links developed during a previous Darwin Initiative project (Plant Information and Technology Transfer for Nepal [Project No. 162/06/052]) and a joint RBGE-DPR botanical expedition in Nepal in 2001. Application to round 11 of the Darwin Initiative was made later in 2002 and the modified Stage 2 proposal accepted by the Darwin Initiative Secretariat in May 2003. Although the first scheduled event for the project was the Edinburgh Planning Meeting in September 2003, Drs Watson and Pullan (RBGE) had the opportunity to visit Kathmandu in June en route to meetings in Bhutan. This enabled them to have several meetings in Nepal with the project partners and advance progress with the project (this visit was separately funded and did not draw on Darwin Initiative funds). This visit in June 2003 was thus taken as the formal start date for the project.

All outputs and activities for reporting year were accomplished. Progress on these is summarised as follows:

#### ***Set-up meetings in Kathmandu, June 2003 (additional activity).***

Several meetings were held between Drs Watson, Pullan and Nepali partners. The revised Stage 2 application was circulated and discussed, as was the draft Gantt chart. Although not planned in the original project, these meetings gave a valuable opportunity to discuss concerns and misunderstandings regarding the operation, management and outputs of the project at an early stage. Groundwork was prepared that paved the way for the Edinburgh Planning Meeting in September. RBGE staff visited potential venues for workshops and seminars in Kathmandu, and established

contacts with potential suppliers of equipment and consumables. A full report of these meetings is given in the Appendix to the current report.

#### ***Edinburgh Planning Meeting, September 2003.***

Prof. Bajracharya and Dr Yami (RONAST), Dr Rajbhandari (DPR), and Prof Shrestha (TU-CDB) visited Edinburgh in September 2003 for the formal Planning Meeting with RBGE staff. Topics discussed included: communication between project organisers; roles of the primary organisations; selection of Darwin Scholars; timing of events; location of fieldwork; workshop topics and activities; media involvement in the inauguration ceremony at the first workshop. The Gantt chart of timing of events and outputs was revised and finalised. The main change to the original plans was to move the first in-country event (the first workshop) from November 2003 to March 2004. This was proposed by the Nepali partners due to uncertainties over political stability following the recent ceasefire breakdown by the Maoist insurgency. A full report of the Edinburgh Planning Meeting is given in the Appendix to the current report.

#### ***Project Website Launch, January 2004.***

The project website was launched in January 2004, and can be viewed at <http://rbg-web2.rbge.org.uk/nepal/darwin>. This first version contains background information to the project, a timetable for the activities, and summary information on other Darwin Initiative projects in Nepal. More detailed information is given on the selection procedure for the sixteen Darwin Scholars (see below), including downloads for the application form and Project Synopsis (in RTF, MSWord and PDF formats). Outline information is given on the First Training Workshop, and further information will be made available with updates during the project. As the first Workshop finished early in April 2004, and the first Fieldwork Training started 3 weeks after this, it has not been possible for a major update the website. This will be done in advance of the second workshop and fieldwork training in October 2004.

#### ***Selection of Darwin Scholars, January/February 2004.***

The procedure for selection of the eighteen Nepali scientists to be trained during the project was established at the Edinburgh Planning Meeting (see above and the Appendix) and later approved by the wider Organising Committee. Prof. Shrestha [TU-CDB], and Dr Rajbhandari [DPR] were included in their capacity as Associate Co-ordinators, and sixteen scientists were the Darwin Scholars. Because the project is primarily aimed at capacity building for the three participating organisations, the institutional heads were invited to put forward their nominees for ten of the Darwin Scholars as follows: DPR 4 persons; TU 4 persons; RONAST 2 persons. The remaining six places were filled through open competition (including members of the participating institutes not put forward as institutional nominees). An advertisement and application form (both given in the Appendix to the current report) were available on the project website. The advertisement was also placed in the Kantipur Daily (an English language newspaper with wide circulation in Nepal) on 9th January 2004, and circulated for display on the notice boards of participating organisations, other institutes (e.g. the Natural History Museum, Kathmandu), and environmental organisations in Nepal (e.g. ICIMOD, WWF, IUCN, KMTNC, The British Council, British Embassy). The application form was also available from RONAST. Applicants were invited to submit a full Curriculum Vita, application form, and up to two letters from referees supporting their application, by 31<sup>st</sup> January 2004.

Forty five people applied for open competition places. The criteria for final selection were:

- M.Sc. (Botany) or equivalent experience; preference will be given to those specialising in the systematics of any plant group
- Candidates should demonstrate commitment to plant biodiversity research in Nepal (e.g. co-authorship of taxonomic treatments for the Flora of Nepal)
- Candidates with computing skills will be preferred
- Candidates with permanent jobs will be preferred (not necessarily applied to open competition places)

A shortlist of 12 candidates was made by a selection committee constituted by RONAST, and the applications for these sent to RBGE. Prof Blackmore and Dr Watson selected the six successful candidates for open competition places and notified the Organisation Committee on 20<sup>th</sup> February 2004. All sixteen accepted their place on the training programme and attended the first workshop (see below). The sixteen Darwin Scholars are:

A. Selection by Internal competition:

Mr Sunil Kumar **Acharya**, Asst. Scientific Officer, District Office, Banke (DPR)  
Ms. Anjana **Giri**, Asst. Scientific Officer, RONAST, Khumaltar (RONAST)  
Mr Umesh **Koirala**, Lecturer, PG Campus, Biratnagar (TU)  
Ms Vidya Keshari **Manandhar**, Asst. Research Officer, National Herbarium (DPR)  
Mr Lalit Narayan **Mandar**, Lecturer, PN Campus, Pokhara (TU)  
Ms. Nirmala **Pandey**, Ass. Scientific Officer, DPR Head Office, Thapathali (DPR)  
Ms. Sangeeta **Rajbhandary**, Lecturer, CDB-TU, Kirtipur (TU)  
Dr Sangita **Shrestha**, Scientific Officer, RONAST, Khumaltar (RONAST)  
Mr Rajesh Kumar **Uprety**, Ass. Scientific Officer, DPR Head Office, Thapathali (DPR)  
Ms Sheetal **Vaidya**, Lecturer, Patan Campus (TU)

B. Selection by Open competition:

Mr Bhaskar **Adhikari**, Freelance botanist, Kathmandu  
Mr Kamal **Maden**, Teaching Asst. (part time), PG Campus, Biratnagar (TU)  
Mr Ram Chandra **Poudel**, Freelance botanist, Kathmandu  
Dr Lokesh Ratna **Shakya**, Lecturer, ASCOL, Kathmandu (TU)  
Dr Mohan **Siwakoti**, Reader, Natural History Museum, Swayambhu (TU)  
Mr Naresh **Thapa**, Asst. Scientific Officer, National Herbarium (DPR).

***First Training Workshop, March/April 2004.***

During March and April 2004 three members of staff from Royal Botanic Garden Edinburgh (Prof. Stephen Blackmore, and Drs Crinan Alexander and Mark Watson) visited Kathmandu, Nepal, for the first Training Workshop for the Darwin Initiative project. The workshop was run during nine days spread over 21 days, with the 4<sup>th</sup> National Conference for Science and Technology, organized by RONAST, included between the two main parts of the workshop (workshop participants were invited to attend the conference, and many gave presentations).

Sixteen Darwin Scholars attended the workshop which included subjects ranging from plant specimen collection in the field, data recording methods, specimen preparation and identification, to broader issues relating to the Convention on Biological Diversity, conservation action plans in Nepal. Six Nepali experts were involved in the teaching as Project Co-ordinators and Resource Persons (Dr. UR Sharma, Dr. KD Yami, Prof. KK Shrestha, Dr. TB Shrestha, Dr. PR Shakya, Prof. RP Chaudhary), and two visiting foreign botanists (Prof. Hideaki Ohba, University of Tokyo, Japan and Prof. David Boufford, Harvard University Herbaria, USA) gave guest lectures. Two Practical sessions were run in the two main herbaria, and for half a day in the field (Phulchowki Hill, up to 2100 m). Darwin Scholars initiated their individual projects by consulting and recording data from the herbarium specimens in the two herbaria. Assessment was also carried out on the general holdings from the two herbaria.

As this was the first major in-country event, the opportunity was taken to hold a formal Inauguration Ceremony with distinguished invited guests and representatives of the national media. A closing ceremony was also held during which the Darwin Scholars were given certificates of Attendance. Further details are given in the full report included in the Appendix to the current report.

***Project monitoring meetings, April 2004***

Meetings were held independently with all three participating organisations in Nepal during and after the First Training Workshop (see full Workshop report). During these

meetings problems with project organisation and management were raised and discussed. Darwin Scholars also completed feedback questionnaires after the workshop. The main problems were:

1. *Communication* - sometimes the flow of information had not proceeded as expected and some participants missed some correspondence. In future emails will be more widely distributed using a distribution list comprising all members of the Organising Committee. After the First Workshop MFW compiled a page of email addresses for the Organising Committee and Darwin Scholars and circulated to all those included.

2. *Travel and subsistence allowances for participants outside Kathmandu* - an unforeseen issue that arose for Darwin Scholars attending from outside Kathmandu was the financial burden of travel to and from Kathmandu and living costs in Kathmandu. MFW agreed with the suggestion that those participants should be given an allowance of 200Rs per day in Kathmandu (ca. £1.50), a one way air ticket and one way bus ticket. Funding for this would be made from savings within the Workshop budget.

3. *Travel arrangements during the workshop* - Some Workshop days were held at the National Herbarium south of Kathmandu, at RONAST on the edge of the city, and at TU campus Kirtipur. A coach service was provided for the days in the National Herbarium, but there were some difficulties over scheduling and time was wasted. Feedback from the Darwin Scholars indicated that the Workshop days held centrally at the British Embassy were the most time efficient, and that improvements need to be made in the transport arrangements, particularly for the National Herbarium. These issues will be addressed in future planning.

#### ***Procurement of Equipment, June 2003-March 2004.***

Equipment bought in the UK and posted to Nepal is given in the list in the Appendix. MFW arranged the procurement and shipping of the equipment, and was greatly helped by The British Council Kathmandu who allowed usage of the British Forces Posted Overseas postal service: a much cheaper and more reliable service than regular airmail. Financial savings were also made through bulk discounts and sponsorship in kind. Royal Botanic Gardens Kew and Cambridge University Press offered us commercial discounts on our book purchases, and Gulf Air made generous reductions in the return flights from the UK and extra baggage allowance.

#### ***In-country Capacity Building for KATH and TUCH herbaria, March 2004.***

£1300 was given to the National Herbarium (KATH), DPR, and £500 to the CDB-TU Herbarium (TUCH) for capacity building. This was spent on procuring additional herbarium cabinets, quality paper for mounting specimens and producing herbarium labels, and funding for the identification, mounting and curation of unmounted materials in the two herbaria.

#### **Workplan for reporting year 2004-5.**

The timetable of work for the next reporting year is unchanged from the Logistical Framework and Gantt chart given in the Appendix to the current report.

#### **5. Actions taken in response to previous reviews (if applicable)**

Not applicable. The current report has been produced in collaboration with all the members of the Organisational Committee.

#### **6. Partnerships**

The collaboration between RBGE and partners in Nepal has been good over the last year. Communication via email is effective for many tasks, but developing a good understanding of official and unofficial working practices, and personal opinions can only be achieved through face to face contacts. We were fortunate that very early on in the project MFW was able to visit Nepal for a series of institutional visits, meeting senior staff members for the first time. The Edinburgh Planning Meeting within 3

months of the start of the project was also very important in sorting out any ambiguities and misunderstandings. Reports of all these activities were produced and approved by the participating organisations and serve as an excellent reference to what was discussed and decided.

Contact has been established with Dr Philip Bubb, UNEP - World Conservation Monitoring Centre, UK, who is managing the *Building Capacity for Biodiversity Monitoring Assessment in Nepal* Darwin Initiative project [No. 162/11/020], and we are looking at ways of sharing experiences and future collaboration. MFW stayed in Nepal for a few days after the First Workshop to visit environmental NGO's in Kathmandu. Unfortunately his plans were curtailed by illness and the general strike that paralyzed transport in the city. However, MFW did visit ICIMOD (International Centre for Integrated Mountain Development) and met with Dr Eklabya Sharma, Programme Manager, to find out more on ICIMOD's research programme and explore future collaboration (MFW also met Dr Nakul Chettri, ICIMOD Regional Officer, at the Workshop Inauguration Ceremony). Contact was also established with the Gulf Air office, with a view to sponsorship of flights for the Nepali botanists visiting the UK. Contact with WWF-Nepal and IUCN will be made in a future visit.

## **7. Impact and Sustainability**

The profile as a high profile within HM Government of Nepal, the scientific and conservation community in Nepal and the British diplomatic service. A good indication of this is the attendance at the Inauguration Ceremony where the Minister for Science and Technology was the Chief Guest, and speeches were made by HM the UK Ambassador to Nepal and senior figures in Tribhuvan University, RONAST and DPR. The audience included distinguished guests from environmental NGO's, and members of the media who reported the event in the national press.

The profile of the project and the Darwin Initiative has been raised by making use of the logo whenever possible, placing a large advertisement in the National press inviting applicants for Darwin Scholars (this was also circulated for the notice boards of relevant organisations), placing the logo and project title on all the books bought and distributed (laptops and data projector), and the establishment of the project website. The Darwin Initiative promotional DVD was shown during the Inaugural Ceremony.

It is perhaps a little early to look for evidence of increasing interest and capacity for biodiversity at this stage of the project, however, it is clear from the first workshop that the Darwin Scholars are highly motivated and eager to develop the skills they are learning into action on plant biodiversity. Once training is completed Nepal will have enhanced capacity to implement its biodiversity action plans and have enhanced institutional capacity for these tasks. Furthermore, Nepali botanists will be able to participate fully in the international Flora of Nepal project, and contribute on an equal footing as co-authors of taxonomic accounts. Central to the exit strategy is RBGE's long-term commitment to working with and providing support for Nepali botanists on the Flora and other biodiversity projects.

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

Not applicable.

## **9. Outputs, Outcomes and Dissemination**

All agreed outputs were achieved, with the additional output of the June 2003 meetings in Nepal.

Information was disseminated in Nepal by MFW during the June 2003 Meetings, during the Inauguration Ceremony and First Workshop, and via the website. Activities within Nepal will continue after the project finishes as part of RBGE's commitment to plant biodiversity research in Nepal and especially the Flora of Nepal project.

Funding will be a mixture of core RBGE funds, expedition grants, and hopefully a follow-on grant from the Darwin Initiative.

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

| Code No. | Quantity | Description  |
|----------|----------|--|
| 4C       | 18       | Darwin Scholars and Associate Coordinators   |
| 4D       | 2 weeks  | 9-day training workshop in Nepal   |
| 7        | 1 CD     | CD of PowerPoint Workshop presentations and other useful files.  |
| 8        | 13       | Four RBGE staff during two visits to Nepal   |
| 13A      | 1        | 30 specimens collected during a half day training event (in sets of 6: i.e. 180 specimens in total)          |
| 14A      | 1        | First Training Workshop in Nepal   |
| 14B      | 1        | 4 <sup>th</sup> National Conference on Science and Technology  |
| 15A      | 1        |  |
| 15C      | 1        |  |
| 20       | £10,500  | Computers, collecting equipment, herbarium materials, reference material, etc.                               |
| 22       | £2500    | Funding for the June 2003 meetings, contributions in kind for book discounts, air tickets and excess baggage |

- In Table 2, provide full details of all publications and material produced over the last year that can be publicly accessed, e.g. title, name of publisher, contact details, cost. Details will be recorded on the Darwin Monitoring Website Publications Database. Mark (\*) all publications and other material that you have included with this report.

**Table 2: Publications**

| Type *                       | Detail                | Publishers   | Available from                  | Cost £ |
|------------------------------|-----------------------|--------------|---------------------------------|--------|
| (e.g. journals, manual, CDs) | (title, author, year) | (name, city) | (e.g. contact address, website) |        |
| no formal publications       |                       |              |                                 |        |



### 10. Project Expenditure

- Please expand and complete Table 3.

**Table 3: Project expenditure during the reporting period (Defra Financial Year 01 April to 31 March)**

| Item | Budget (please indicate which document you refer to if other than your project schedule) | Expenditure | Balance |
|------|--|-------------|---------|
|      |  |             |         |
|      |  |             |         |
|      |  |             |         |
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|      |  |             |         |
|      |  |             |         |

*Notes:*

audit fees under the heading Others has been moved from the 2003/04 budget to 2006/07 at the request of the Darwin Initiative.

£195.82 has been moved from the Others heading to Office Costs to cover additional materials for workshops with the permission of the Darwin Initiative.

### 11. Monitoring, Evaluation and Lessons

Activities undertaken during the project were monitored through the production of detailed reports with reference to the stated deliverables and outputs. Evaluation of the workshop and the performance of the trainers was achieved by asking the Darwin Scholars to submit written questionnaires. Evaluation of the performance of the Darwin Scholars was assessed by looking at the quality of the data they were recording during the herbarium practical sessions, the quality of the herbarium specimens and label data they were gathering during the fieldwork, and the level of participation during the open discussion/forum sessions in the workshop.

Many of the lessons learned from this year are summarised above. They mainly concern communication and logistics of running the within-country activities. Experience gained in these areas is already being used and improved for future planning. Being flexible is of prime importance so that adaptations can be made at any stage (without losing sight of the goals),

### 12. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)

None in year 1.

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2003/2004

| Project summary   | Measurable Indicators  | Progress and Achievements<br>April 2003-Mar 2004  | Actions required/planned for<br>next period  |
|---|--|---|--|
| <p><b>Goal:</b> To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> <li>• The conservation of biological diversity,</li> <li>• The sustainable use of its components, and</li> <li>• The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul> |  |   |  |
| <p><b>Purpose</b> To strengthen the capacity of Nepal to conserve and use sustainably its rich plant resources by training Nepali botanists to collect plants and assess conservation status in field. To enhance the representation of species in the collections and to train staff in collections and information management in the herbarium. Enabling Nepalis to contribute to international taxonomic research on Nepal.</p>                                | <p>Initial planning workshop in Edinburgh and three larger training workshops in Kathmandu.</p> <p>Botanical exploration, collecting and assessments.</p> <p>Incorporation of materials into KATH and TUCH herbaria, documentation.</p> <p>Extension of information systems to the internet.</p> | <p>Initial planning workshop and the first of the three training workshops held as planned.</p> <p>Day fieldwork training held as planned during the first training workshop.</p> <p>Not applicable to this year.</p> <p>Not applicable to this year.</p> | <p>Second Training Workshop to be held in Kathmandu in October/November 2004.</p> <p>Fieldwork Training expeditions to be held in May and in October/November 2004.</p> <p>Materials collected on fieldwork to be passed over to KATH and TUCH with documentation.</p> <p>Extensions to information systems investigated in October/November 2004.</p> |
| <p><b>Outputs</b></p>   |  |   |  |
| <p>Training materials - course book on Plant identification and Herbarium Management.</p>   | <p>Publication of manual as training resource for the future.</p>  | <p>Not applicable to this year.</p>   | <p>More handouts during the workshops would serve as a good basis for the manual.</p>  |
| <p>Presentation of Nepal Plant Information System via the web.</p>  | <p>Information accessible via the internet.</p>  | <p>Project website launched</p>   | <p>Website to be enhanced with additional information for Darwin Scholars.</p>   |
| <p>Collection and curation of new herbarium material for reference collections and documentation of status.</p>   | <p>Herbaria of DPR (KATH) at Godawari and Tribhuvan University (TUCH) to include ca. 75% of Nepalese plant species.</p>  | <p>Not applicable to this year.</p>   | <p>Two expeditions in the next period will collect more species to enhance representation.</p>   |

|  |   |                              |  |
|--|---|------------------------------|--|
| Preparation of accounts for Volume 3 of the Flora of Nepal | Accounts for 18 plant groups in Volume 3 to be produced as part of the course assessment. | Not applicable to this year. | Training in Flora account writing to be given in the Second Training Workshop. |
|--|---|------------------------------|--|

## LOGICAL FRAMEWORK

| <i>Project summary</i>   | <i>Measurable indicators</i>   | <i>Means of verification</i>  | <i>Important assumptions</i>  |
|--|--|---|---|
| <p><i>Goal:</i></p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> <li>• the conservation of biological diversity,</li> <li>• the sustainable use of its components, and</li> <li>• the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources</li> </ul> |  |   |   |
| <p><i>Purpose</i></p> <p>To strengthen the capacity of Nepal to conserve and use sustainably its rich plant resources by training Nepali botanists to collect plants and assess conservation status in field. To enhance the representation of species in the collections and to train staff in collections and information management in the herbarium. Enabling Nepalis to contribute to international taxonomic research on Nepal.</p>                                | <p>18 (maximum) Nepalese botanists from DPR, CDB and other institutions to be trained.</p> <p>Collection of 2000-3,500 sets of herbarium specimens.</p> <p>Representation of native species in herbaria to be increased from c 33% to c 75%</p> <p>Completion of preliminary assessments of conservation status</p> <p>Preparation of descriptions and accounts for Flora of Nepal</p>   | <p>Evaluation of participants at end of each training workshop</p> <p>Specimens incorporated into herbaria</p> <p>As above</p> <p>Status reports drafted for 50% of species collected.</p> <p>Manuscripts prepared for editorial committee.</p> | <p>Selection of participants will include individuals with differing levels of responsibility within DPR and CDB with qualifications ranging from school level or graduate to postdoctoral.</p> <p>The target for new herbarium specimens is a conservative one based on joint fieldwork, the numbers may be much higher if Nepali participants are able to undertake additional fieldwork.</p> |
| <p><i>Outputs</i></p> <p>Training materials - course book on Plant , identification and Herbarium Management</p> <p>Presentation of Nepal Plant Information System via the web.</p> <p>Collection and curation of new herbarium material for reference collections and documentation of status.</p> <p>Preparation of accounts for Volume 3 of the Flora of Nepal</p>  | <p>Publication of manual as training resource for the future</p> <p>Information accessible via the internet</p> <p>Herbaria of DPR (KATH) at Godawari and Tribhuvan University (TUCH) to include 75% of Nepalese plant species.</p> <p>Accounts for 18 plant groups in Volume 3 to be produced as part of the course assessment</p>  | <p>Completion of publication</p> <p>Evaluation of web site</p> <p>Enhancement of collections.</p> <p>Completion of manuscripts.</p>   |   |
| <p><i>Activities</i></p> <p>Initial planning workshop in Edinburgh and three larger training workshops in Kathmandu.</p> <p>Botanical exploration, collecting and assessments.</p> <p>Incorporation of materials into KATH and TUCH herbaria, documentation.</p> <p>Extension of Information Systems to the internet</p>   | <p><b>Activity Milestones (Summary of Project Implementation Timetable)</b></p> <p>Year 1. Senior Nepalese botanists to RBGE for planning and training (collections and conservation status assessment), workshop in Kathmandu (focus on collection and field documentation)</p> <p>Year 2. Fieldwork followed up by identification of collections and workshop at RBGE (for first group of Nepalese botanists). Workshop in Kathmandu (adding curation and collections management skills) leading into fieldwork.</p> <p>Year 3. Final workshop (including presentation of results to Government officials) and field work in Nepal, and followed by identification of collections and workshop at RBGE (for second group of Nepali Botanists). Publication in Nepal of training manual derived from coursework and practical experience in the field and herbaria, revision of information systems and presentation via the web, completion of manuscripts for Flora of Nepal.</p> |   |   |

# EQUIPMENT SUPPLIED TO NEPAL

## **Department of Plant Resources, MOFSC, HM Government of Nepal**

### Laptop PC and software

*Toshiba Satellite Pro 2100, 15" screen, P4-M 2Ghz, 256MB RAM, 32MB NVidia GeForce4 420 Go, 30GB Hard Disk, CD-RW/DVD, 3.5in floppy drive, 56Kbps Fax/Modem, Fast Ethernet LAN adaptor, Fast InfraRed port. Logitech USB optical mini-wheel mouse. Targus laptop case. MS Windows XP Pro, MS Office XP professional.*

### Reference Books:

Botanico-Periodicum-Huntianum (*BPH*), 1968  
Botanico-Periodicum-Huntianum Supplementum (*BPH-2*), 1991  
Authors of Plant Names, *Brummitt & Powell*, 1992  
Botanical Latin ed 4, *W.T. Stearn*, 2000  
The Plant Book ed.2, *D.J. Mabberley*, 1997  
The Herbarium Handbook, 3<sup>rd</sup> Edition, *D. Bridson & L. Forman*, 1998  
Plant Taxonomy and Systematics, *C.A. Stace*, 1989  
Annotated Checklist of the Flowering Plants of Nepal, *J. R Press et al.*, 2000  
\*Identification of Flowering Plant Families, 4<sup>th</sup> ed., *J. Cullen*, 1997  
The CBD for Botanists, *C. Williams et al.*, 2002  
Introduction to Phylogeny and Systematics of Flowering Plants, *K. Bremer et al.*, 2003

## **Central Department of Botany, Tribhuvan University**

### Laptop PC and software

*Toshiba Satellite Pro 2100, 15" screen, P4-M 2Ghz, 256MB RAM, 32MB NVidia GeForce4 420 Go, 30GB Hard Disk, CD-RW/DVD, 3.5in floppy drive, 56Kbps Fax/Modem, Fast Ethernet LAN adaptor, Fast InfraRed port. Logitech USB optical mini-wheel mouse. Targus laptop case. MS Windows XP Pro, MS Office XP professional.*

### Reference Books:

Botanico-Periodicum-Huntianum (*BPH*), 1968  
Botanico-Periodicum-Huntianum Supplementum (*BPH-2*), 1991  
Authors of Plant Names, *Brummitt & Powell*, 1992  
Botanical Latin ed 4, *W.T. Stearn*, 2000  
The Plant Book ed.2, *D.J. Mabberley*, 1997  
The Herbarium Handbook, 3<sup>rd</sup> Edition, *D. Bridson & L. Forman*, 1998  
Plant Taxonomy and Systematics, *C.A. Stace*, 1989  
Annotated Checklist of the Flowering Plants of Nepal, *J. R Press et al.*, 2000  
\*Identification of Flowering Plant Families, 4<sup>th</sup> ed., *J. Cullen*, 1997  
The CBD for Botanists, *C. Williams et al.*, 2002  
Introduction to Phylogeny and Systematics of Flowering Plants, *K. Bremer et al.*, 2003

## **Royal Nepal Academy of Science and Technology**

### Desktop PC, printer and software (bought in Nepal)

### Reference Books:

Plant Taxonomy and Systematics, *C.A. Stace*, 1989  
Annotated Checklist of the Flowering Plants of Nepal, *J. R Press et al.*, 2000  
Identification of Flowering Plant Families, 4<sup>th</sup> ed., *J. Cullen*, 1997  
The Herbarium Handbook, 3<sup>rd</sup> Edition, *D. Bridson & L. Forman*, 1998  
Taxonomy of Vascular Plants (*Indian reprint*), *G. H. M. Lawrence*, 1951  
The CBD for Botanists, *C. Williams et al.*, 2002  
Introduction to Phylogeny and Systematics of Flowering Plants, *K. Bremer et al.*, 2003

## **18 Darwin Scholars**

Equipment for personal use:

*Hand lens, watchmakers forceps, dissecting needles, secateurs, digging trowel.*

Reference Books:

Annotated Checklist of the Flowering Plants of Nepal, *J. R Press et al., 2000*

The Herbarium Handbook, 3<sup>rd</sup> Edition, *D. Bridson & L. Forman, 1998*

\*Identification of Flowering Plant Families, 4<sup>th</sup> ed., *J. Cullen, 1997*

Introduction to Phylogeny and Systematics of Flowering Plants, *K. Bremer et al., 2003*

### **General Equipment for use during the Project, to be left in Nepal**

Orange press straps (wide) 7 pairs

Red press straps (narrow) 4 pairs

6 heat distributors

5 field presses

4 sets pole pruners (and carry bags)

12 pairs of press ends

6 x 125 pack of blotters (total 750) - Fords Gold Medal Blotting Grey Flat 406 x 518 mm 300g/m<sup>2</sup>

2 x 1000 pack of expedition flimsies - High White Wove Plain Finish 430 x 610 mm 30g/m<sup>2</sup>

Gloch Entrenching tool

2 x 100 packs of single-sided razer blades

RBGE pens and Darwin lapel badges and

4 drying frames, nuts and bolts and spanners

400 metal corrugates

2kg silica gel

8 drying frame ground sheets

22 Write-in-the-rain notepad

\*This book will be distributed during the Second Training Workshop