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Darwin Initiative for the Survival of Species

Annual Report

Education and Training for Restoring Tropical Forest Biodiversity

By

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Darwin Initiative for the Survival of Species

Annual Report

1. Darwin Project Information

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|-----------------------|---|
| Project title | Education and training for restoring tropical forest biodiversity |
| Country | Thailand |
| Contractor | Horticulture Research International |
| Project Reference No. | 162/11/023 |
| Grant Value | £128,345 |
| Start/Finishing dates | 01.04.02 to 31.03.05 |
| Reporting period | 01.04.02 to 31.03.03 |

2. Project Background

The location and circumstances of the project and the problem that the project aims to tackle

In Thailand and neighbouring countries, the most serious threat to biodiversity is forest loss. Even before the Biodiversity Convention (1992), the Thai Government recognised the need to preserve existing forest for biodiversity, by establishing one of the most extensive protected areas systems in Asia. Unfortunately, many of these included large deforested areas. A project to mark the King of Thailand's Golden Jubilee was implemented in the mid-1990s to plant indigenous forest trees on 8,000 km² of degraded forestland. The enthusiasm with which villagers, children, NGO's etc. participated in tree planting showed immense public support for large-scale forest restoration. However, implementation was considerably constrained by a lack of knowledge about how to grow, plant and care for the great diversity of forest tree species native to Thailand. Furthermore, monitoring of biodiversity recovery in restored areas was non-existent. The Forest Restoration Research Unit (FORRU), in collaboration with Horticulture Research International (HRI) therefore developed model research and community tree nurseries to improve methods of tree propagation as well as demonstration field plots, where the framework species method of forest restoration was tested and refined. A very large amount of new knowledge about how to improve forest restoration projects has thus been generated. The next step was to disseminate this information to key personnel and groups involved in restoring the nation's forests for the conservation of biodiversity i.e. Forest Department officials, villagers, NGOs and, equally importantly, schoolchildren who have most to gain from restoration of diverse forest ecosystems. This would improve the efficiency of existing forest restoration projects and provide those interested in starting new forest restoration projects with all the knowledge and technical support they need. Such an education program would emphasize the role of biodiversity as an essential integral component of forest restoration and encourage biodiversity monitoring in restored areas. The broad aim of the current Darwin project is, therefore, to build lasting capacity to restore forests on degraded land for biodiversity conservation through improved forest restoration and biodiversity monitoring practices, based on sound scientific research.

3. Project Objectives

The project is providing skills and knowledge to improve forest restoration techniques through a Darwin education/extension unit, which is disseminating the results and methodologies developed by the Forest Restoration Research Unit's (FORRU) research programme to key personnel and groups involved in restoring the nation's forests for biodiversity conservation, especially those responsible for training others e.g RFD training officers, school teachers etc. Project outputs will include a definitive Forest Restoration Manual (entitled "How to Plant a Forest") detailing the best techniques to restore forest ecosystems for biodiversity conservation; educational aids for workshops etc, including an a/v show, images catalogue, videos, workshop information packs, posters etc.; 15 workshops; 120 school education events; on-site advice provided during extension visits and a newsletter. A Logical Framework for this project is appended to this report. Our objectives have not been modified over the last year. The only changes to the proposed operational plan were minor; the Project Leader will visit Chiang Mai in the first part of year 2, rather than January as originally planned.

4. Progress

Brief history of the project to the beginning of this reporting period.

FORRU, in collaboration with Britain's Horticulture Research International (HRI), has been adapting the 'framework species method', to restore seasonally dry forests to degraded watershed sites in the mountains of Northern Thailand. FORRU is located in Doi Suthep-Pui National Park (DSPNP) in northern Thailand. Both National Park staff and local villagers collaborate closely with the unit's activities. The basic structure and functioning of forest ecosystems are rapidly re-established, by planting mixtures of 20-30 carefully selected native forest tree species (both pioneer and climax species simultaneously). Subsequently, biodiversity is restored when the planted trees attract seed-dispersing animals into the planted sites. The essential characteristics of framework tree species are therefore: high field performance (survival and growth rate) in degraded sites; dense, spreading, crowns that shade out herbaceous weeds and provision of resources that attract seed-dispersing wildlife (e.g. fruits, nectar, nesting sites and so on) at an early age. They should also be easy to propagate in nurseries by local people. Selecting candidate framework species for FORRU's field trials required extensive background studies. Germination trials and monitoring of early seedling growth were carried out on 400 tree species indigenous to DSPNP. A detailed study was carried out of tree flowering and fruiting phenology, involving 100 tree species and descriptions, drawings and photographs were made of fruits and seedlings of potential framework species. Germination was tested and seedling performance was monitored in the nursery and after planting out in degraded areas. This enabled compilation of species production schedules. DSPNP is itself a location of recognised conservation importance, due to its high tree species diversity. With more than 600 tree species suited to a wide range of soil and climate conditions, DSPNP could provide a valuable seed source for forest restoration projects outside of the park. Planting trials in 1995-1997 enabled identification of some species likely to perform well in degraded sites. Without such basic background information, it would have been very difficult to make sensible choices of candidate framework species for more extensive field trials. Based on all these studies, framework species have been planted in field plots annually since 1997 in partnership with an Hmong hill-tribe community resident within DSPNP. FORRU helped the villagers to establish their own community tree nursery to test the practicability of the new nursery methods developed in the research nursery, in a village environment. The planting trials were designed to provide a quantitative assessment of the degree to which various tree species meet framework species criteria and helped to establish appropriate standards for the selection of

tree species for forest restoration. Canopy closure can now be achieved within 2-3 years after planting. Weeds have largely been replaced with a carpet of leaf litter and wild pigs, deer and other wildlife have been observed in the planted sites.

**Summary of progress over the last year against the agreed baseline timetable for the period.
Explain differences including any slippage or additional outputs and activities**

Education Team – Establishment and Training

Recruitment of four staff to form the Forest Restoration Extension Team was completed by May 2002 (three education officers and one administrative assistant). A fulltime, intensive training program for the new staff was run by Dr. Stephen Elliott from June to October, during which all team members learned about FORRU's research. During training, a curriculum was designed, by developing learning modules on a wide range of subjects, modified to meet the needs of the various target groups (schoolchildren, government officers, villagers etc.). Modules included classroom activities, nursery work stations, nature trails and activities at a hill-tribe village and in the field plots. The showcasing of these modules formed the basis of the launching workshop in September. Two of the Darwin team members underwent special part-time training (Feb-Apr 2003) in website design. Although the official team training period has ended, additional ½-1 day training events continue to be organised for continued staff development. In October, the regular Darwin Team was augmented by the arrival of Australian volunteer, Mr. Kirby Doak. He ran an additional staff training event, focusing on teamwork and teaching techniques, in December at Pangfen Nature Camp.

Audio/Visual Teaching Aids and Newsletter

Some of the major outputs during the team's training period were various teaching aids. A puppet show was developed, to put across the concept of sustainable use of natural resources to young children. AV (PowerPoint) shows on biodiversity, the framework species method and forest types were developed. A large collection of poster boards was prepared for teaching in the field. American Volunteer, Ms. Jenie Berna kindly donated her free time to the filming and editing of an introductory VDO about the project for showing at the start of educational events. The team also started work on a website. The prototype is undergoing revisions but will go online soon.

Two editions of the newsletter, providing details of FORRU's research and education events have been written and distributed (473 copies each time, both Thai and English versions). In the future, the newsletter will also be available online through the website currently under construction.

Forest Restoration Manual and Scientific Papers

The basic structure and format of the Forest Restoration Manual were compiled, during Dr. David Blakesley's visit to Chiang Mai in May 2002 (when input was also provided for team development and training). Further, direct collaboration on the manual took place during Dr. Stephen Elliott's visit to the U.K. in October. A basic ten-part structure to the manual was agreed upon (1. Introduction; 2. Forest Types; 3. Natural Forest Regeneration; 4. Accelerated Natural Regeneration; 5. The Framework Species Method; 6. Nurseries; 7. Planting; 8. Planning; 9. Research Protocols; 10. Species Accounts) with the contents of each part roughed out. Parts 1 and 5 were subsequently completed, with initial drafts of parts 2-4, 6, 7 and 9 still undergoing revision. The project's administrative assistant has undergone training in page layout, developed a template for the publication and is now designing the first two parts. Dr. Sutthathorn Suwanaratana is translating the text for the Thai edition. An artist has been engaged to produce illustrations for the book and design

the cover. In addition to the manual, a research paper on seed germination and dormancy was submitted to the *Journal of Tropical Ecology* in March 2003.

Workshops

Six workshops, (two more than planned) were run during this reporting period, reaching 148 participants (averaging 25 per event). A workshop for villagers from Nan Province was held during the staff training period, to help develop teaching techniques. The first workshop scheduled in the proposal was the inaugural workshop in September to showcase the education services and products being developed by the project and to invite participants to design suitable programs to meet their needs. Some 26 school teachers and 27 representatives from NGOs and community leaders participated. Many of the other educational events, described here, were originally conceived at this workshop. A similar workshop was run in English (17-19 March), to advertise the project's capabilities to expatriates assisting various schools, NGO's and government offices.

The first specialized technical workshop was run for a group of visiting foresters from Yunnan Province, China and a local NGO, the Upland Holistic Development Project (4-6 November). The Yunnanese foresters were interested in developing their own version of the framework species method, to incorporate biodiversity considerations into farm woodlots. Another workshop was run for Chiang Mai Rajabhat Institute (technical college) 29-31 January. The participants were 32 final year agricultural extension students and two instructors. It is hoped that after graduation, the students will spread information on forest restoration along with agricultural advice to local villagers. The last workshop of this period was held in collaboration with a local Pangfen Nature Centre. Over 4-6 March, the Darwin team helped local villagers (Ban Mae Lao), develop their plans for a tree seedling nursery and planting project. Tree planting with the villagers will take place next June.

Schools/Universities Program

Development of school activities usually takes place in several stages. Firstly, the Darwin team visits the school to consult with teachers on a suitable program. Teachers are provided with materials to include in their lessons. The first activities with each school usually take place in the classroom or school grounds. This is usually followed by a visit by the school to FORRU's nurseries and field sites. Several schools are preparing for their own planting events scheduled for June. Usually a good relationship is established, with each school scheduling several events for classes of different age groups. Events with university students have been grouped together with school events.

To date, a total of 30 events have reached approximately 1,200 participants and their teachers. Each month the number of events varied from a low of 1 in April (due to school vacation and Thai New Year Holiday) to a maximum of seven in January (the cool season). The number of participants reached by the program varied from a low of 61 in October (3 university events) to a maximum of 340 in January. The work schedule, submitted with the project proposal, failed to take account of the long, hot season school vacation, during which (late February to May), it has been difficult to organise school events. However, demand for school activities in other months has exceeded expectations.

Extension Services

Extension services included work events with three village communities in Chiang Rai Province; Ban Pa Sor, Ban Mae Yang Mint and Ban Santi attended by 53 people, over a weeklong period in January. This involved following up on previous tree planting events and initiating new ones. A day's training was provided at Ban Mae Sa Mai to improve the villagers' communication skills

when dealing with education groups visiting the community nursery and field plots. A group of foresters from Bhutan was provided with a one-day introduction to FORRU's nursery and planting techniques. Potential collaboration with forestry projects in Bhutan was discussed. FORRU staff have been invited to contribute to several events run by other organisations, including science camps for school children and university students and a village workshop in Loei Province along with the Regional Community Forestry Training Centre.

Provide an account of the project's research, training, and/or technical work during the last year. This should include discussion on selection criteria for participants, research and training methodologies as well as results. Please summarise techniques and results and, if necessary, provide more detailed information in appendices (this may include cross-references to attached publications)

In addition to the training program described above, FORRU's research program continues to provide the information-base for development of the Darwin-funded education program and compilation of the forest restoration manual. The research program is not funded within the current Darwin project (it is currently sponsored by the Thai government and Britain's Eden Project) but it continues to provide essential inputs. This year research in the nursery has focused on vegetative propagation of native forest trees and use of mycorrhizae to boost growth. Seeds of previously untested species continues to be collected and seedling production schedules continue to be developed for a wide range of species (these will form a chapter in the Forest Restoration Manual). In the field new experimental plots have been established, extending testing of the framework species methods to deciduous forest ecosystems. Silvicultural treatments tested have included use of cardboard mulching and timing and frequency of weeding and fertiliser application.

Discuss any significant difficulties encountered during the year.

Demand for educational activities has surpassed expectation, and a wider format of education training events has been requested, including day visits by non-schools groups, and provision of student work experience. Funding three months in arrears has created considerable problems for the Thai partner, who is forced to borrow money to cover salaries and running costs of the Darwin programme. In addition, the initial payment was received 5 months in arrears, causing considerable financial and administrative difficulties for the Thai partner, who does not have capital reserves to fall back on. Consequently, our Thai partner has asked if it is possible to receive payments in advance?

Has the design of the project been enhanced over the last year, e.g. refining methods, indicators for measuring achievements, exit strategies?

The design of the project has been enhanced during the first year through the inclusion of on site workshops in four villages. We have made some changes to the design of the Darwin Forest Restoration Manual, which we believe will improve its usefulness by local people.

Present a timetable (workplan) for the next reporting period.

| TIMETABLE 01.04.2003 – 31.03.2004 | | |
|--|------------------------|---|
| Month | Output ref. no. | Details |
| April | 6A/B | On site training for NGOs etc on demand available from now |
| May | 6A/B &14A | Bimonthly workshop for 20 participants from villages/NGOs/RFD, for 3 days |
| | 16A/B | Compilation and distribution of 473 copies of 'Reforestation Network |
| July | 6A/B &14A | Bimonthly workshop for 20 participants from villages/NGOs/RFD, for 3 days |
| | 8 | Project leader visits Chiang Mai for 2 weeks |
| August | 14A | Utilisation workshop for trainees for 3-5 days |
| | 15A/C | National and local press releases in Thailand |
| | 18A/C | National and local TV features broadcast in Thailand |
| | 19A/C | National and local radio features broadcast in Thailand |
| September | 16A/B | Compilation and distribution of 473 copies of 'Reforestation Network |
| | 6A/B &14A | Bimonthly workshop for 20 participants from villages/NGOs/RFD, for 3 days |
| | 9 & 11B | First draft of Forest Restoration Manual prepared |
| October | 8 | Education manager visits UK for 10 days |
| November | 6A/B &14A | Bimonthly workshop for 20 participants from villages/NGOs/RFD, for 3 days |
| January | 16A/B | Compilation and distribution of 473 copies of 'Reforestation Network |
| | 11B | Paper submitted to peer reviewed international journal |
| | 6A/B &14A | Bimonthly workshop for 20 participants from villages/NGOs/RFD, for 3 days |
| | 8 | Project leader visits Chiang Mai for 2 weeks |
| March | 6A/B &14A | Bimonthly workshop for 20 participants from villages/NGOs/RFD, for 3 days |

5. Partnerships

Describe collaboration between UK and host country partner(s) over the last year. Are there difficulties or unforeseen problems or advantages of these relationships?

Collaboration between the partners has been very stimulating and highly effective. The project leaders in England and Thailand have been in almost daily contact by email, with regular telephone discussions. The Project Leader, Dr Blakesley visited Chiang Mai in May 2002, and the local Education Manager, Dr Elliott, visited the UK in October 2002. During Dr Blakesley's visit to Chiang Mai, considerable progress was made on the design, structure and format of the Forest Restoration Manual, including the production of detailed page plans and negotiations with a local publisher. Detailed discussions were held concerning the workshop programme, and Dr Blakesley joined an interview panel to select members of the Darwin Education team. Dr Elliott's visit to the UK focussed primarily on detailed work on the compilation of the Forest Restoration Manual, preparation of the 6-monthly report and discussions on progress of the education programme in Thailand.

Has the project been able to collaborate with similar projects in the host country or establish new links with / between local or international organisations involved in biodiversity conservation?

Through the education events, workshops and the newsletter, links have been established with schools, local NGO's and some organisations in Bhutan and Yunan. These links usually take the form of exchange of information and requests for additional training/education events. Links with local organisations often include more detailed help with planning of forest restoration plantings. The Darwin staff joined with the Upland Holistic Development Project and with the Regional Community Forestry Training Centre to jointly run two events.

6. Impact and Sustainability

Discuss the profile of the project within the country and what efforts have been made during the year to promote the work. What evidence is there for increasing interest and capacity for biodiversity resulting from the project? Are satisfactory exit strategies for the project in place?

The profile of the project has been raised through word of mouth with the more than 1,000 participants during events organised during the project. In addition, the newsletter has helped to raise the project profile. Its impact should increase when it becomes available online. An article in a local magazine "Guidelines" resulted in many telephone enquiries and a similar article has recently been published in a British Magazine (Eden Project's "Friends Magazine"). The project will host a regional workshop for television journalists next month (Indochina Media Memorial Foundation), which should boost the project's visibility. In addition, 3 regular free advertisements in local newspapers are resulting in a steady stream of enquiries. Increasing interest is evidenced by the demand for services and events far exceeding the numbers originally planned.

7. Outputs, Outcomes and Dissemination

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

| Code No. | Quantity | Description |
|------------|--|--|
| 6A & 21 | Four Thai graduates | Forest Restoration Extension Team recruited by May 2002 |
| 8 | UK project leader | Project leader visited Chiang Mai for 2 weeks in May 2002 |
| 16A/B | 473 copies distributed | 'Reforestation Network' Newsletter compiled and distributed in July 2002 |
| 6A/B & 14A | 53 participants | Workshop – extension programme launched for participants from villages/NGOs/RFD, for 3 days. Forest restoration and biodiversity monitoring. |
| 6/AB | 3 events with one school, reaching 121 school children | Visit to/visits from schools commenced in September 2002. Two visits were made to Pharuthai School, and one visit was hosted at FORRU. Links between forest and people, forest restoration and biodiversity. |
| 7 | Education materials produced | A video; AV show; posters; teaching modules which cover: classroom activities, nursery work stations, nature trails and activities at a hill-tribe village and in the field plots |
| 6B | Four Thai graduates over 26 training weeks | Training of Forest Restoration Extension Team by Dr Elliott and colleagues completed in September 2002, including seedling propagation, planting, silvicultural techniques, the framework species method, FORRU's history and background, working with local communities, project planning and curriculum development. |
| 17B | 900 groups/individuals | Database compiled of 900 groups involved in forest restoration by October |
| 17B | | Database used to contact and determine training needs of various groups by October. |
| 8 | Education manager | Education manager visited UK for 10 days in October 2002 |
| 6A/B & 14A | 10 participants: | Bimonthly workshop for 3 days in November 2002 for visiting Yunanese foresters and a local NGO, Upland Holistic Development Programme. Forest restoration and biodiversity monitoring. |
| 6A/B & 14A | 32 participants | Bimonthly workshop for 3 days in January 2003 for students from Chiang Mai Rajabhat Institute. Forest restoration and biodiversity monitoring. |
| 11A | One paper | Paper submitted to peer reviewed international journal (Journal of Tropical Ecology) in March 2003 |
| 11B | One | One short paper published in local Thai magazine; |
| 11B | Two | Short papers submitted to: Eden Friends and ETRN News |
| 16A/B | 473 copies | 'Reforestation Network' Newsletter compiled and distributed |

| | | |
|--------------|-----------------|---|
| | distributed | in January 2003 |
| 6A/B &14A | 39 participants | Bimonthly workshop for 3 days in March 2003 for English speaking teachers, NGO officers etc. (two workshops held) |

Explain differences in actual outputs against those agreed in the initial ‘Project Implementation Timetable’ and the ‘Project Outputs Schedule’, i.e. what outputs were not achieved or only partly achieved? Were additional outputs achieved?

The only output which was not achieved in the first year was the second visit of the UK Project Coordinator, which was postponed until early in the second year of the project.

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 * (e.g. journals, manual, CDs) | Detail (title, author, year) | Publishers name,city | Available from | Cost £ |
|---|---|-------------------------|------------------------------|-----------|
| International Journal | S Elliott, G Pakkad, JF Maxwell, P Navakitbumrung, V Anusarnsunthorn and D Blakesley. The dynamics of tree seed dispersal and dormancy in a seasonally dry tropical forest. Submitted to ‘Journal Tropical Ecology’ | Status submitted | | N/A |
| International Newsletter | D Blakesley and S Elliott. Restoring Northern Thailand’s Highland Forests. Submitted to ‘ETFRN News’ | Status in press | ETFRN | N/A |
| British Magazine | S Elliott and D Blakesley (2003) Eden helps restore Thailand’s tropical forests. Eden Friends | Eden Friends | Eden Project, Cornwall | N/A |
| Thai Magazine | S Elliott and D Blakesley (2002) Reaping the rewards of reforestation. Guidelines Magazine Thailand 9, 26-27. | | | N/A |
| Leaflet | The Forest Restoration Research Unit | FORRU | FORRU | |
| CD-Video | Seeds of Hope | FORRU | FORRU | |

Details of dissemination activities in the host country during the year. Will these activities be continued by the host country when the project finishes, and how will this be funded and implemented?

FORRU has set out, through the Darwin programme to educate community groups, NGOs, government organisations and school children in Thailand in forest restoration techniques. Dissemination activities have thus far primarily taken the form workshops and school events, which have been detailed above. We are delighted to report that the demand for training and extension events has surpassed even our most optimistic expectations. Not only are we able to teach forest restoration techniques, biodiversity monitoring and good horticultural practices, but we are also able to educate people about the vital links between humankind and the plants with which we share our world. It is particularly important that the latter aspect is appreciated by school children. We anticipate that the demand for our services will continue beyond the three years of our current Darwin program. Furthermore, we feel that we should consider obtaining smaller amounts of funding to support the practices of some of our workshop attendees, in addition to possible continuation of the Darwin Education Unit beyond the current program.

8. Project Expenditure

- Please expand and complete Table 3.

Table 3: Project expenditure during the reporting period

| Item | Budget | Expenditure |
|------|--------|-------------|
|------|--------|-------------|

- Highlight any recently agreed changes to the budget and explain any variation in expenditure where this is +/- 10% of the budget

We are pleased to report that we have claimed £889 less than we have spent, and are therefore within 2% of the original budget. This overspend, which we are not claiming from Darwin is essentially due to extra resources being used in our core training programme, on printing and technical training workshops.

9. Monitoring, Evaluation and Lessons

Discuss methods employed to monitor and evaluate the project this year. How can you demonstrate that the outputs and outcomes of the project actually contribute to the project purpose? i.e. what are the indicators of achievements (both qualitative and quantitative) and how are you measuring these?

In this first year, the main source of evaluation came from questionnaires completed by participants at the end of each education event. These showed a general high level of satisfaction with workshop programs. Individual items ranked with low satisfaction were readjusted during ad hoc training events for the Darwin staff run by Dr. Stephen Elliott. Feed back from teachers has been very positive, as evidenced from additional requests for further events, but evaluation of the ultimate impact of schools events is problematic. The future use of the information and skills provided to school children will have long term benefits that accrue well beyond the end of this project.

More comprehensive evaluation will be undertaken in the second year, which includes the results of the Annual Report review, Report from the Utilisation Workshop, the Records of participating Schools and the evaluation of the Darwin Forest Restoration Manual.

Are there lessons that you learned from this years work and can you build this learning into future plans?

National holidays and especially the long school breaks need to be taken into consideration when planning target numbers of schools events, as it has proved impossible to organise school events in the vacation periods. Numbers of *ad hoc* events that do not fit the standard formats are quite high and diverse and need to be taken into account when planning staff timetables.

10. Author(s) / Date

Dr David Blakesley, Dr Steve Elliott, Dr Sutthathorn Suwannaratana

28 April 2003

Appendix

| <i>Project summary</i> | <i>Measurable indicators</i> | <i>Means of verification</i> | <i>Important assumptions</i> |
|--|--|---|---|
| <p><i>Goal</i></p> <p>To assist countries rich in biodiversity but poor in resources with the conservation of biological diversity and implementation of the Biodiversity Convention</p> | | <p>Personnel implementing forest restoration projects will be trained how to monitor biodiversity in planted plots. Results will be shared at workshops and through the network.</p> | <p>1. Thai government policies will continue to promote forest restoration by planting of native tree species</p> <p>2. Integration of community forestry with forest conservation will continue</p> |
| <p><i>Purpose</i></p> <p>To build lasting capacity to restore forests on degraded land for biodiversity conservation through improved forest restoration and biodiversity monitoring practices, based on sound scientific research.</p> | <p>Adoption of the methods described in the education material and workshops by communities and groups implementing forest restoration projects, leading to the initiation of new projects or improvement of existing projects, by 2003.</p> | <p>1. Initial knowledge uptake by questionnaires at the end of each training session.</p> <p>2. Long-term knowledge use determined at 3 evaluation workshops and by extension visits to project sites.</p> <p>3. Independently reviewed annual Project Reports</p> | <p>1. The existing local demand for forest restoration knowledge will continue or increase.</p> <p>2. Local people will be receptive to the information and training methods provided.</p> <p>3. Local people will have the resources needed to put their education and training into practice.</p> |
| <p><i>Outputs</i></p> <p>-Forest Restoration Manual - Educational aids for workshops etc: a/v show, images catalogue, videos, workshop info. pack, posters -15 workshops training 300 individuals -120 school education events reaching 3-5000 children -On site advice provided during extension visits -Newsletter for 'Reforestation Network'</p> | <p>-Publication date and demand for the Forest Restoration Manual, peer review, in 2003 -Fifteen workshops held, participant numbers and affiliation, participants feedback, questionnaires, 2001 - 2003 -Three workshops specifically to assess effectiveness of Education & Extension programme 2002</p> | <p>-Presentation of Manual, and peer review -Presentation of educational material -Participant list for workshops, plus completed questionnaires -Report on two 'effectiveness' workshops -Record of participating schools -Independently reviewed annual Project Reports</p> | <p>-Thai government policies will continue to advocate the planting of native tree species in degraded forest -Co-operation of local people in attending workshops -Public enthusiasm for tree planting will continue</p> |
| <p><i>Activities</i></p> <p>-Compile/analyse existing data from FORRU's research programme -Edit and publish Forest Restoration Manual -Recruit and train four Education Officers -Establish links with NGOs/villages/RFD officials interested in forest restoration -Organise/carry out training workshops and school visits</p> | <p>-Budget of £157560, of which £128345 requested from Darwin -Expertise of Drs Blakesley and Elliott -Expertise of Darwin Education Officers -FORRU nursery, office and field plot facilities -CMU herbarium and office space for programme</p> | <p>-Annual project report for Darwin, detailing progress on the Forest Restoration Manual, and education and extension programme -Audit of budget holders (HRI and CMU/FORRU)</p> | <p>-Suitably qualified and motivated staff can be found to carry out the tasks required by the project -Co-funding will continue to support existing FORRU facilities and research personnel -Continued agreement of the Royal Forestry Department</p> |

