Evaluation of Closed Projects in Indonesia
December 2006

Final report - March 2007

The Darwin Initiative

The Darwin Initiative is a UK Government small grants programme whic was launched at the Rio Earth Summit in 1992. It aims to assist countries rich in biodiversity but constrained by financial resources to implement the Convention on Biological Diversity (CBD). The Initiative is funded and managed by the UK Department of Environment, Food and Rural Affairs (Defra). This is the UK Government's main support to other countries (including the UK's Overseas Territories) in their implementation of the CBD, and more recently the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) and the Convention on the Conservation of Migratory Species of Wild Animals (CMS), through the funding of collaborative projects which draw on UK biodiversity expertise.

Monitoring and Evaluation

The Darwin Initiative has a comprehensive Monitoring and Evaluation (M&E) programme in place which is central to informing on the progress of the Darwin Initiative against its goal – 'to support countries that are rich in resources but poor in financial resources to meet their commitments under one or more of the major biodiversity conventions: the Convention on Biological Diversity; the Convention on Migratory Species; and the Convention on International Trade in Endangered Species'.

The M&E programme is used in a number of ways to help inform on best practice, to support ongoing projects in their delivery, to strengthen the Darwin Initiative itself, and to demonstrate the gains Darwin Initiative projects have made in conserving biodiversity through partnerships between the UK and developing countries.

The Darwin Initiative M&E programme is essentially centred on performance monitoring and impact evaluation. The M&E programme assesses legacy and impact at different levels with lessons drawn out from each level:

- At the project level – in terms of host country institutions and local partners and beneficiaries, and in terms of conservation achievements;
- At the national and ecoregion level – in terms of host country policies and programmes, and, if relevant, at a cross-boundary and eco-region level;
- At the international level – in terms of emerging best practices, and the conventions themselves;
- At the UK level – in terms of legacy and impact within UK institutions.

This report was undertaken by P D Hardcastle on behalf of the Darwin Initiative

Cover Photo Credit: Babirusa at Adudu salt lick, Nantu protected area, Goronotalo, Sulawesi.

P D Hardcastle, December 2006

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List of acronyms

APHI	Asosiasi Pengusalia Hutan Indonesia
	(Association of Indonesian Forest Companies)
CITES	Convention on International Trade in Endangered Species
EU INCO	European Union framework funding for International Scientific Cooperation
FLEGT	Forest law enforcement, governance and trade

Executive Summary

This evaluation of closed projects in Indonesia is based on a mix of interviews in UK and field visits. The five projects evaluated were running between 1995 and 2003 but there is also a current project (13-028) that is a continuation of two of the earlier ones (5-127 and 9-012). The projects evaluated included a herbarium database (4-068), a revised university forestry curriculum for conservation (6-166) and study of the biodiversity and hydrology of peatsawmp forest (7-135) as well as the two projects referred to above, which related to illegal trade in rattan and bushmeat and moved on to establishment of a protected area. All the projects were considered to be highly relevant and to have been efficiently delivered.

In terms of effectiveness, the database and curriculum projects very effective in making changes which were sustained and still apparent resulting in visible impact 7 to 10 years later. Both these projects were relatively simple in design and, furthermore, the project partners were able to implement and use the outputs directly, leading immediately to useful outcomes.

The project on peatswamp biodiversity was very effective in terms of its science and, despite considerable challenges, in its capacity building. Numerous publications of high quality were produced, further research continued with EU funding and an effective university department was created with internationally recognised expertise in peatswamp forests. All these outcomes are directly traceable to the initial Darwin funding.

In terms of its impact on improved land use planning and its application, the project did not have the necessary leverage to push through the changes required. This was, perhaps, inevitable given the small scale of the resource available compared with the scale of use of peatswamp forest in Kalimantan. Nevertheless, the findings remain available for use, when there is sufficient interest in doing so.

The two protected area projects (5-127 and 9-016) have been very effective in documenting the extent of illegal trade in rattan and wildlife, marshalling local support for continued protection and in producing appropriate material for awareness-raising in local communities. At the wider policy level, the projects and their successor (13-028) have had less secure impact. The situation remains vulnerable to a cessation of external funds and all the valuable gains could be lost in a very short time should this happen.

Because English is not an official language in Indonesia, project staff have had to work in Bahasa Indonesia, at least in the field and it has sometimes proven hard to find people with sufficiently good English for further education without recourse to English language training.

The evaluation has concluded that the ability of local partners to provide an appropriate level of influence are critical to sustainable impact and legacy. This can create problems where local partners themselves do not have the high leverage required for changes at the wider policy level nor the ability to ensure that resources are made available on project completion.

The scale of Darwin funding for a single project is quite small when addressing wide-ranging, complex policy and livelihood issues as well as biodiversity conservation. It is necessary as part of the selection process to identify those projects that cannot reach a stable end-point on completion and to ensure that appropriate measures are in place to sustain the gains made.

Overall, the projects evaluated represent an extremely successful suite of interventions for the Darwin Initiative. All have delivered significant impact and legacy even if in some cases this is less than originally intended. The value of what has been achieved is many times the financial investment made. It does, however, also need to be recognised that in part this has been due to the incredible commitment of project personnel in terms of their willingness to work for very long hours in many cases under extremely arduous conditions.

The Darwin Initiative is quite widely known and respected in Indonesia. This is in no small measure due to the efforts of the personnel who have been engaged in the projects it has supported.

Recommendations

The main recommendation is that Darwin projects need to be realistic in what can be achieved within the limited time and financial resources available. It appears that concentration on a relatively narrow set of outputs and outcomes gives much better progress than being spread too widely.

1. Background

1.1 Darwin Projects in Indonesia

As part of the wider programme of Evaluation of Closed Darwin Initiative projects, it was decided to undertake an evaluation in Indonesia during December 2006. This was linked with a Mid-term Review of DI Project 14-031 (*A market led conservation response to the domestic bird trade in Indonesia*) and a visit to Sabah, Malaysia to initiate the Evaluation of Closed Projects there. Subsequently, the findings from the two evaluations have been drawn together in a brief overview and synthesis report.

The projects that were encompassed in the evaluation are shown in Table 1 below

Table 1 List of Closed Projects in Indonesia

Project No's.	**4-068**	**5-127**	**6-166**	**7-135**	**9-012**
UK Institution and Project Leader/Contact	BGCI P Wyse Jackson	Imperial College London EJ Milner-Gulland and Lynn Clayton	University of Stirling John Proctor	University of Nottingham Jack Rieley	Imperial College London Lynn Clayton
Partner Institution(s)/ Contact(s) per project	Indonesian Botanic Gardens	North Sulawesi Forestry Office	University of Gajah Mada, Ministry of Forestry and the Indonesian Institute of Sciences	University of Palanga Raya, provincial government of Central Kalimantan, Indonesia	North Sulawesi Forestry Office University of Gorontalo, Gorontalo Local Government
Project Grant Values/project	£139,500	£118,475	£44,875	£119,100	£189,960
Project's Start / End Date:	1/4/95 – 30/03/98	1/10/96 – 30/09/99	1/10/97 – 30/9/99	1/4/98 – 31/3/01	1/10/00 – 30/9/03

The only other closed project, reference number 10-018 (*UK Darwin Initiative Papuan plant diversity project*) was excluded on grounds of cost and time, as the project is geographically very isolated from the others. Project reference number 9-012 followed on from 5-127, and ultimately led to ongoing project 13-028 (*Establishment and management of Nantu National Park, Gorontalo Province, Sulawesi*). Projects starting before 2000 did not have Logical Frameworks and there is now only a partial document trail for some of the earlier projects.

1.2 Biodiversity in Indonesia

Indonesia has a land area of 1,811,570 Km² and 93,000 Km² of inland water, lying between latitudes 6°N and 11°S and longitudes 95° and 141°E. Altitude ranges from sea level to over 5,000 metres in Papua. There are over 13,000 islands and islets with a total coastline of some 55,000 Km. Forest cover is just under 50%. Indonesia straddles Wallace's line, meaning that it has substantial representation of both Indo-Malayan and Australasian floral and faunal groups.

The population is 218 million, but population density varies widely with volcanic islands such as Java being very highly populated compared with the less fertile islands of Sumatra and Sulawesi. Despite its diversity and substantial land and forest area, there is considerable threat to some biodiversity from land use changes and from logging, especially in lowland tropical forests and on vulnerable tropical peat.

Forest conversion, sometimes but not invariably preceded by logging, is undertaken for subsistence and industrial wood plantations and commercial agriculture, the latter encompassing Oil Palm plantation, which are currently a major growth area due to excess global demand. The resettlement of people from areas of dense population to areas of much lower population density has been part of government policy for more than two decades. Such schemes have considerable potential to impact severely negatively on biodiversity unless tightly controlled within an agreed land use planning framework.

The sheer size and complexity of the country means that large numbers of people and institutions are involved in activities that directly or indirectly impinge on biodiversity conservation, leading to a complicated institutional landscape and challenges for communication. Following decentralisation, there have been concerns expressed with the problems of maintaining sound governance and there are a number of donor funded interventions, including substantial support on forest governance.

Consequently, local project partners tend to be dispersed in geographical and institutional terms. Although all projects have had some formal link with central and/or local government institutions, active partners range from academic and research institutions to international and local NGOs.

2. Closed Projects

2.1 Indonesian Botanic Garden Biodiversity Database (4-068)

Project Purpose

To create a biodiversity documentation system for the Botanic Gardens of Indonesia, including registration, documentation, coordination and long term data integrity. To install appropriate computer software and train staff in its use. To strengthen the capacity of BG staff for plant conservation.

Relevance

At the time it was initiated (1995), the project was highly relevant. It brought to Indonesia the latest versions of computer software for managing specimen collections and also provided training in its use as well as more general capacity building.

Efficiency and Effectiveness

No details exist but from discussion with national personnel involved, the project was efficiently delivered and achieved what it set out to do.

Impact

After almost 10 years, during which there had been no follow on support, it was not anticipated that there would be much residual impact remaining. This assumption proved incorrect. Contact was made through Dr Lynn Clayton and BirdLife Indonesia with Dr Dedy Darnaedi of LIPI, who proved to have been closely involved with the project.

He confirmed that the system had proved effective in delivering what it set out to achieve and had been maintained. Denis Filer, the original computer software specialist (from Oxford Plant Sciences – the BRAHMS herbarium management system developer) had visited from Kuala Lumpur at the invitation and expense of LIPI in October 2006. This was to assist with an ongoing programme to update all specimen management systems, due to the amalgamation of the records and creation of a national database for all biological and geological collections in public sector institutions.

Sustainability and Legacy

It appears that the project had a very substantial legacy in terms of creating a computerised herbarium record management system that remained in use for almost 10 years, during which time it proved an effective tool.

The fact that one of the original project team was requested to return, at local expense, to advise on the process of incorporating the system into a new, more widely based national system, suggests that effective and supportive relationships were established during the original project.

The support from the Darwin Initiative was recognised and much appreciated. This project achieved a visible legacy that was still apparent almost 10 years after the project had been completed, which is a major achievement.

2.2 Forestry Curriculum towards sustainable forestry and conservation of biodiversity in Indonesia (6-166)

Project Purpose

To review the forestry education system and make recommendations in line with the provisions of the Biodiversity Convention

Relevance

During the 1990s, Indonesian forestry was predominantly focused on harvesting of natural forest and the establishment of very extensive plantations for industrial wood. Conservation issues were not given much prominence. The structure of the sector was reflected in the employment opportunities and these were in turn reflected in university curricula.

The project addressed increasing national and international interest in Sustainable Forest Management, the mechanisms by which it might be achieved and changes required to bring it about. These changes included new directions in university education.

Efficiency and Effectiveness

It was not possible to locate detailed reports on the project but discussion with national personnel involved at the partner institution suggested that both these aspects were well delivered by the project.

Impact

This project was completed in September 1999 and the untimely death of the UK leader (Prof. John Proctor) in August 2006 made prior contact problematic. Through the ongoing project with BirdLife Indonesia (14-031), which was being given a Mid-term Review, a connection was established with the University of Gajah Mada. This proved to be a rich lode. Dr Ir Sri Nugroho Marsoem, the Vice-Dean of the Forestry Faculty was the initial contact and he quickly located Prof Dr Ir Suhardi, who had been involved in the project.

The main impact of the project was a major revision of the curriculum and syllabus. Historically, the degree programme had been heavily focused towards harvesting of natural forests and the establishment of plantations. Initially there was a much stronger focus on improved sustainable forest management, including new approaches such as Reduced Impact Logging and the setting aside of effective conservation areas within production forests. This progressed from the initial impetus given by the project to the current situation where the university now offers four areas of specialisation within its programme. These are:

- Forest conservation;
- Forest business management, marketing and trade;
- Silviculture, focused on plantations; and
- Forest products and industries.

At the present time, there are around 225 students in each year (selected from 800+ applicants) and 50 take each option. There is apparently, much more demand for the conservation option than for the other three, which is an interesting reflection of the changed attitudes towards conservation, in the student population, as a result of negative publicity.

Sustainability and Legacy

The fact the programme now being offered by the University has its roots in the changes given impetus by the project is a remarkable example of long term sustainability and a valuable legacy for what was a very small outlay by the Darwin Initiative on a two-year project.

It is not possible to state with certainty to what extent the project was instrumental in bringing about the changes to the academic approach that has allowed the new curriculum to flower so markedly. There was at the time substantial ongoing support to forestry in Indonesia through UK DFID, and the University had close links with that programme.

The project, which organised a major conference in order to develop the changes, encountered considerable resistance from some members of the academic staff, with a strong tradition of forest production, and there is still some residual pressure when changes and improvements are being discussed.

Nevertheless, the high level of commitment to the ideas and concepts underlying the integration of conservation into the degree programme displayed by the academic staff met was refreshing and remarkable. In terms of the broad vision of its academic leaders, the wide understanding of conservation and sustainable management and their grasp of the issues and challenges, the Forestry Faculty has tremendous capacity to support achievement of the goals of the Darwin Initiative in Indonesia. To the extent that the project was instrumental in assisting this, it has provided a fantastic legacy.

2.3 Biodiversity of peatswamp forest in Central Kalimantan, Indonesia (7-135)

Project Purpose

To provide baseline information required to inform Government Agencies and others of the importance of peatswamp forest

Relevance

The project was undertaken following very serious fires in Kalimantan in the mid 1990s and especially in 1997. It aimed to undertake a biodiversity audit of logged, unlogged and degraded forests as well as to carry out research on the structure and hydrology of the peat, leading to recommendations for future management. The project included substantial capacity building using a range of mechanisms. The increasing land use pressure on tropical peatswamp, partly from livelihoods but mainly from conversion for rice or oil-palm and often preceded by unsustainable logging, made this project highly relevant. In particular, although there had been many previous studies, the timing following severe fires gave added value.

Efficiency and effectiveness

The project was delivered very efficiently.

In terms of effectiveness, the findings are more mixed. Capacity building was effective in creating improved expertise and the work on peat hydrology led to much improved understanding of the system and how it should be managed. The results were counter intuitive, in that peat depth *increased* moving away from the drainage line due to perched water tables. The research also found that there were two distinct ages in the peat with a gap of several thousand years across the uncomformity.

It became apparent from the research that the management practices being applied were inappropriate. Drainage for rice ran counter to the fundamental hydrology of the system, while forest clearance impacted severely on the water table and prevented establishment of crops such as oil palm. Furthermore, degrading the forest canopy through overcutting was shown to be instrumental in the widespread fire damage.

The quality of the research was extremely high and on project completion, two further projects have followed on, with funding from the EU INCO scheme. Unfortunately, little attention has been paid to the project findings in Indonesia and inappropriate land use practices continue to be tried. The research has also drawn attention to the importance of tropical peat as a carbon sink and its much higher rate of accumulation than that of boreal or temperate peat (3 to 6 times). The project, in the absence of local interest, did not complete the management recommendations originally envisaged as these were rendered superfluous by the lack of support and of a clear policy and strategy for peat areas.

Impact

The project made valuable contributions to increased knowledge of tropical peat biodiversity but the greatest contribution was probably on the improved understanding of tropical peat hydrology and hydraulics. The project was also instrumental in clarifying the science behind the failure of land use conversion schemes and the severe damage to the ecosystem from log extraction practices applied.

It is also salutary to note that the project facilitated the calculation of the catastrophic carbon emission from the fires associated with the Mega Rice Project, which was estimated as some 30% of the total annual global carbon emissions from fossil fuels.

Sustainability and Legacy

The scientific legacy from the project was very substantial, with top quality publications recording interesting and valuable findings. The potential skills improvement from the capacity building was also high but there is no clear information available as to the extent it has been made use of, although the following projects with EU funding have derived some value.

The most disappointing aspect is that the findings have not been used in the way they should have been used, to inform policy decisions. This is a serious limitation and one that calls into question the validity of the assumption that excellent research leads to improved conservation. The drivers of land use decisions on the ground are also to some degree independent of the policy framework. Even if the findings had been translated into much improved policy guidance for land use decisions, the reality of practice is that such guidelines have no certainty of application.

Despite this rather negative conclusion, the value of the findings remains and the information is available to inform in due course decision-makers who may have more leverage over activities on the ground. The increased prominence of international concern with governance and trade, such as FLEGT processes, may provide a mechanism by which pressure can be brought to bear for effective application of sound policies.

In the light of recent international attention to climate change issues, the carbon balance findings of the research are of great importance. Although not currently being used in Indonesia, the findings remain highly relevant for the future.

The institutional strengthening provided to the University of Palangka Raya, which has achieved recognition as a centre of expertise in tropical peat and will be seminal if and when there is effective movement on the ground.

2.4 Sustainability of Wildlife and Rattan Trades in North Sulawesi (5-127)

Project Purpose

To study the sustainability of wildlife and rattan trades in North Sulawesi, quantifying the offtake, its effects on traded species and the effects of policies to make the trade more sustainable and profitable

Background

Northern Sulawesi is an area that until the mid 1990s had a comparatively low population and large areas of relatively undisturbed forest. Despite this, rattan and bush meat collection were organised, significant but uncontrolled. The principal researcher, Lynn Clayton, spent 5 years in the area undertaking a DPhil and had recorded the high level of illegal trade in wildlife and rattan. The project aimed to document the trade and work towards establishing sustainable offtake levels. The project area is, however, contains what is thought to be the last remaining population of babirusa (*Babyrousa babyrussa*), a species which has Appendix 1 status under CITES. The earlier work had identified 3 salt licks at which the animals gathered, making them highly vulnerable to poaching Of these 3 salt licks, one was lost by forest clearance for subsistence farming in 1993 and a second by logging in 1995, leaving only the Adudu salt lick for wildlife (see Figure 1).

The Land use zonation for Gorontalo Province allocated the forest area to conservation, conversion, production and protection (soil and water conservation) working circles. Despite this, it appears that practice on the ground has not always observed this zonation.

The level of control of illegal activities on the ground was generally poor. With the local population being mainly incomers and settlers, there is a relatively low sense of ownership of the adjacent forest and limited potential for control through traditional structures.

Relevance

The protected area that is the focus of the project lies on a ridge reaching over 2,500 metres in places. The vegetation is closed tropical forest. The valleys had lowland tropical rainforest, including substantial quantities of mature, natural *Eucalyptus deglupta*. There is also *Agathis ?philippinensis* along the ridges. Lowland tropical rainforest is particularly threatened due to extensive clearance and land conversion.

The vulnerability of babirusa to extinction made this project highly relevant in terms of biodiversity conservation. The work undertaken by Dr Clayton on babirusa as part of her DPhil research, and subsequently, is the main source of literature on this species.

Efficiency and Effectiveness

The project started Oct 1996 and ran until Oct 1999. The principal researcher, Lynn Clayton, was on the ground continuously. The project was very efficiently delivered; noting that the area is extremely isolated with difficult access and in 1996 lacked even the most basic facilities.

The data collection was the core element of the project and was effective in providing detailed information on the extent of the trade in wildlife, rattan and timber. During the first year, anti-poaching control points were established on the Trans-Sulawesi highway, with the assistance of the police and Wildlife Department. These were combined with field patrols by “Brimob” (armed police) through support from the local regent. These two actions provided an immediate reduction in babirusa meat for sale although the total number of wild pigs and babirusa on sale in the sample market remained fairly constant. A parallel reduction was also recorded on illegal rattan and timber, the latter being reduced from around 40m^3 per day to almost zero. Although babirusa is the prime species of concern, the dwarf buffalo (anoa) was also being poached.

Awareness raising activities appear to have been effective, and provided improved support from local communities to the project approach with a number of former poachers and traders subsequently being trained as patrolmen. There was general support from local politicians and officials. Although corrupt practices did continue, the project was able to persuade the authorities to prosecute and secure convictions. Wildlife traders were encouraged to hunt only wild pig as an alternative to babirusa. Offtake limits for the wild pig population were not established although the population appears to have remained viable.

Impact

The project’s main impact was in securing basic protection for the babirusa population, through physical patrols, intervention in markets and through education and basic awareness raising. The project was instrumental in limiting forest conversion for small-scale agriculture but less influential on the more widespread land conversion.

The information on the size of the rattan trade and the origin of the canes was useful in reaching the conclusion that more protection was required. This led to the next project.

Sustainability and Legacy

The main legacy from the project was the establishment of a *de facto* protected area for babirusa and a marked and sustained reduction in illegal timber wildlife and rattan from the area.

This legacy, however, was not sustainable without further support. The project had in effect been undertaking a function that was a national responsibility and despite local political support and changed attitudes, there was neither capacity nor resources from government to take up this role.

The project leader arranged short term funding for a transitional year, to maintain patrols and thereafter secured a second Darwin project (9-012). Annex 2 provides a timeline from 1989, which includes all the projects.

2.5 Conservation of the Paguyaman Forest in North Sulawesi Indonesia (9-012)

Project Purpose

To establish a functioning nature reserve at the Paguyaman Forest

Relevance

In the light of the information given under the previous project (5-127), this project was highly relevant to secure the achievements of that project. The same rationale applies as to its predecessor.

Efficiency and Effectiveness

The project was delivered very efficiently, despite a six-month delay in start up.

The project was highly effective in formally securing the 31,000 ha reserve as a protected area and in supporting and providing control. The successful prosecution of babirusa traders in 2002 led to a sustained reduction in poaching by at least 75% on the basis of the sampling.

A local NGO (YANI) was formed and supported to act as a local partner. Perhaps the most high profile work was in awareness-raising which targeted local communities, urban populations and, especially, schools. The innovative educational materials were well received and 5 TV films were made, including crews from UK, France and Japan, giving global publicity to the project and its aims. A permanent camp was effectively established and used for hosting visits.

The project was diverted by the demand for inputs on patrols and control activities, which limited the inputs for and hence the outputs of the management plan and further refinement of the sustainable offtake limits did not achieve as much progress as originally intended.

The project started some livelihood activities with provision of teak seedlings but the effectiveness of this is uncertain only limited further advice or support could be provided post planting. To move from direct consumption to income generation by means of these alternatives is highly complex and will require future inputs to achieve success.

Impact

The main impact from the project was the creation of the protected area with legal status as a reserve. Substantial impact was also achieved with the public awareness events, including a concert as well as the schools' materials, notably the children's book which is a leader in its field for relevant dissemination of research findings. The project, together with its predecessor, appears to have had a major impact on attitudes towards conservation and trade in forest and wildlife products, with a remarkable level of cooperation from traders being established. This raises the issue of alternative livelihoods and the need to promote alternatives for those whose livelihoods are affected negatively by project actions.

By creating a local NGO and commissioning research through the local University, the project had a noticeable local profile and this was conducive to securing better awareness of conservation issues. The project also supported and encouraged government agencies to carry out their responsibilities more effectively.

Legacy and Sustainability

The main legacy was the legally established protected area, increased to 52,000 ha from the original 31,000. Despite this, the high level of dependency on the project funds for the patrol meant that the sustainability was weak and a further project was secured in order to maintain and improve the position that had been achieved. Annex 3 gives brief information on this third project and some of the issues that have arisen.

3. Discussion

Of the five projects reviewed, two (4-068 and 6-166) were in essence capacity building projects although the latter also included a substantial element of awareness raising in terms of increased understanding of forest conservation within an academic institution. Both had tremendous impact and their outcomes provide very substantial legacy.

The two projects relating to the Nantu area (5-127 and 9-012) although initially based on field research on wildlife populations and illegal trade in rattan and bush meat, have developed into an effective protection system for the remaining population of babirusa. In the absence of a system of national control at the level required, further funding will be required to continue to secure the protected area.

Project 7-135 was the most “scientific” of the projects evaluated and generated publications of a very high standard recording its counter–intuitive and seminal findings. Although the Darwin funding provided a basis from which the research could continue, the lack of a viable and effective policy framework within which the findings could be applied has limited the wider impact of the research and the potential legacy has not been capitalised.

This is an unfortunate finding but, taken in context with the outcomes from the other projects, it suggests that there is a need for the potential impact of a project to be realistically assessed at the application stage.

Capacity building has been an important component of all the projects evaluated. Project 7-135 faced perhaps the greatest challenge in this regard in that it wished to provide UK based postgraduate studies to Indonesian personnel who were not fluent in English. The resultant delays were criticised in a review of the project but given the circumstances, these did not seem at all unreasonable and were eventually delivered, despite the need for substantial English language teaching beforehand. The capacity of the individuals trained to work now in English has certainly greatly increased the capacity of their institution to engage with the international community.

The working language of a project is also an important consideration, especially in a country such as Indonesia. The main researcher for the series of projects in Sulawesi, Dr Clayton, works entirely in Bahasa Indonesia. Her fluency and ability to work in this language has been an important component of the successful delivery of the three projects, especially in respect of establishing a support network amongst local institutions.

The series of projects around Nantu have resulted in more than 15 years of conservation of what is thought to be the last remaining wild population of babirusa. In terms of value for money, Darwin funding has protected 50,000 ha for 10 years at a cost of less than £ 1.00 per ha per annum. Capitalised, this gives a value of just under £ 29 per ha for the reserve, which is obviously well below its true value by any measure.

The public awareness raising activities undertaken in Sulawesi appear to have been innovative and successful. The livelihood alternatives have achieved less impact because the level of resources available has not been sufficient to provide the intensive engagement required. This is mainly the unforeseen demands for continued protection by the project. It does however, raise the issue of how wide ranging a Darwin project should be. Combining research, protection, awareness raising and livelihood support is the stuff of major development projects and programmes, with resources far in excess of what Darwin can provide, even for relatively limited areas.

Given the level of funding available, the results than have been achieved in Nantu would not have accrued had the project been more thinly spread. This suggests that either such projects must secure parallel funding or be divided into distinct phases with a range of different expertise cascading from one phase to the next as each progress point is secured. In the case of Nantu, despite the inputs and dedication, even the current project (the third) has not yet reached a point of sustainability.

4. Conclusions

All the projects evaluated appear to have been successful, to have offered good value for money and to have achieved valuable outcomes and significant legacy. The legacy is much easier to discern in the relatively simple projects and much harder to achieve and assess in complex projects, especially those that require parallel actions by government. Those projects that required this have not been successful in reaching a sustainable outcome. This is no reflection on the way they have been delivered but it is a reflection on the importance of the host government taking responsibility to provide a level of support that is reasonable and matches that promised during appraisal.

It may be that the appraisal process needs to secure commitment from a higher level than was the case with the projects under discussion. The two small projects (4-068 and 6-166) worked with partners who had the capacity to deliver their wider responsibilities. In the other projects, this was not the case.

The Nantu project series is a different case again. From an initial start aiming at the study of the babirusa population, it was able to expand into a vacant niche and provide protection for the last remaining wild babirusa population of significance. By doing so, it has now come to the position where further support is required in order to ensure that the benefits of the past investment, by partners as well as by Darwin, is not lost,. This has implications for the future funding of such open-ended commitments by the Darwin Initiative.

The main recommendation is that Darwin projects need to be realistic in what can be achieved within the limited time and financial resources available. It appears that concentration on a relatively narrow set of outputs and outcomes gives much better progress than being spread too widely.

Where projects require associated actions by partners, it may be necessary to try and secure a much firmer commitment than was the case with the projects in Sulawesi and Kalimantan.

5. Lessons Learned

- Darwin has received excellent value from all the projects evaluated and it has also achieved a substantial legacy of which it can be justifiably proud. The achievement of these outcomes is in no small measure due to the willingness of people in the field to work in difficult conditions for very long periods;
- Projects have a range of risks attached to them. The assessment of these risks must be realistic and fair;
- Wide ranging projects that encompass aspects such as policy changes and livelihood development as well as research and/or awareness raising, need to be given close scrutiny at the outset and have a realistic assessment made of the need for financial support beyond an initial three year period. Not all projects can reach a sustainable end point in this time;
- Partner institutions' commitments may need to be more rigorously reviewed at the application stage to see that they are capable of delivering support at the level required. This is particularly so when policy changes or application is required.

Annex 1 Terms of Reference

Post Project Evaluation	Evaluation of Closed Darwin Initiative Projects located in Indonesia				
Project No's.	4-068	5-127	6-166	7-135	9-012
UK Institution and Project Leader/Contact	BGCI P Wyse Jackson	Imperial College London EJ Milner-Gulland	University of Stirling John Proctor	University of Nottingham Jack Rieley	Imperial College London Lyn Clayton
Partner Institution(s)/ Contact(s) per project		Lynn Clayton	University of Gajah Mada, Ministry of Forestry and the Indonesian Institute of Sciences	University of Palanga Raya, provincial government of Central Kalimantan, Indonesia	
Project Grant Values/project	£139,500	£118,475	£44,875	£119,100	£189,960
Project's Start / End Date:	1/4/95 - ????	1/4/96 - ????	1/10/97 – 30/9/99	1/4/98 – 31/3/01	1/10/00 – 30/9/03
Reviewer	Pat Hardcastle, ECTF				

INTRODUCTION

The Darwin Initiative seeks to help the safeguard of the World's biodiversity by drawing on UK biodiversity expertise to work with local partners in countries that are rich in biodiversity but poor in financial resources. Particular emphasis is placed on:

- Conserving biological diversity within the context of the Convention on Biological Diversity, including sustainable use and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources;
- Improving collaboration with host country/ies and strengthening their capacity to carry forward Darwin funded initiatives;
- Enhancing the overall legacy of Darwin projects.

The Darwin Initiative supports projects led by UK institutions, in partnership with host country institutions, which support biodiversity conservation over a range of ecosystems and locations. Five priority areas for Darwin funding include:

- Institutional capacity building.
- Training
- Research
- Work to implement the Convention on Biological Diversity
- Environmental education and awareness

In order to inform on the impact and legacy of the Darwin Initiative, the Darwin ECTF Monitoring and Evaluation component is commissioning evaluations of projects that previously received funding from the Darwin Initiative (ie "closed" Darwin projects). Issues of sustainability are also integral components in the analysis of impact and legacy.

The approach applied by the Darwin Initiative M&E component is to select *clusters* of "closed" projects based on either a country, theme or eco-region. Such missions shall be undertaken in close consultation with UK based and host country institutions, and involve relevant in-country beneficiaries and stakeholders.

Objectives for the Evaluation of Closed Darwin Initiative Projects

The Evaluation of Closed Projects (ECP) is primarily intended to provide an external perspective on the legacy and impact of Darwin Projects, and to draw out lessons learned and best practices that account for positive legacy and impact.

Legacy and impact shall be accessed at different levels:

- At the **project level** – in terms of host country institutions and local partners and beneficiaries, and in terms of conservation achievements.
- At the **national & eco-region level** – in terms of host country policies and programmes, and if relevant at cross-boundary and eco-region level.
- At the **international level** – in terms of emerging best practices, and the CBD itself.
- At the **UK level** – in terms of legacy and impact within UK institutions.

Within the context of the above, the evaluation shall comment on how the clusters of projects evaluated have contributed towards achieving Darwin Initiative objectives.

Background of Projects to be evaluated

Indonesia has been the focus of a number of Darwin projects (see below). The 5 completed projects present an opportunity to evaluate the long-term impact and legacy of Darwin projects in Indonesia.

Project No.	Title	Purpose
4-068	Indonesian Botanic Garden Biodiversity Database	To create a database system for living plant collections
5-127	Sustainability of Wildlife and Rattan Trades in North Sulawesi	To study the sustainability of wildlife and rattan trades in North Sulawesi, quantifying the offtake, its effects on traded species and the effects of policies to make the trade more sustainable and profitable.
6-166	Forestry Curriculum Towards Sustainable Forestry and Conservation of Biodiversity in Indonesia	To review the forestry education system and make recommendations in line with the provisions of the Biodiversity Convention.
7-135	Biodiversity of peatswamp forest in Central Kalimantan, Indonesia	To provide baseline information required to inform government agencies and others of the importance of peatswamp forests.
9-012	Conservation of the Paguyaman forest in North Sulawesi, Indonesia	To contribute to the Indonesian national biodiversity action plan by implementing a management programme for the Paguyaman Forest Reserve

Issues to be evaluated

The Evaluation of Closed Projects (ECP) shall review outcomes of Darwin Initiative funded projects against the original logical framework and Darwin proposal, Project reports and products, and through the following evaluation criteria:

Relevance: The extent to which the project outcomes correctly addressed identified problems and needs at the time of design, and whether these problems and needs were addressed as a result of the project. Guiding issues include:

- Appropriateness of the project design to the identified problems and towards supporting the implementation of the CBD.
- Complementarity and coherence with other related programmes and activities at national or local levels.
- Overall design strengths and weakness as reflected in the original logical framework.
- Extent of participation by host country institution and beneficiaries in initial consultations, and identification of problems and needs.

Efficiency: An assessment of how well the projects transformed their available resources into intended outputs in terms of quantity, quality and timeliness. Guiding issues include:

- Appropriateness and suitability of the technical methodology applied by the project and overall delivery of the technical assistance
- Review of project costs and value for money.
- Level of Partner country contributions in the project
- Extent of monitoring systems to assess progress and impact.
- Extent of the project's ability to adapt its programme and approach in response to changing assumptions and risks.

Effectiveness: To what extent the project outputs were achieved and to what extent they contributed to achieving the project purpose. In other words what difference the project has made in practice with the intended beneficiaries. Guiding issues include

- Extent of the technical advances made by the project.
- Extent of institutional change within beneficiary institutions as a result of the project outputs and purpose.
- Validity of the assumptions and risks of the project at the purpose level, and how did these change during the course of the project
- Extent of the project's ability to adapt its programme and approach during the course of implementation in response to changing assumptions and risks.

Impact: To what extent the project purpose was achieved and thus contributed to the overall project goal (ie to work with local partners in countries rich in biodiversity but poor in resources to achieve the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.). Guiding issues include:

- To what extent has conservation of biological diversity benefited (or expected to benefit) from the achievements of the projects.
- Have there been unplanned impact resulting from the projects and what have been their consequences.
- Have there been gender-related or poverty related impacts rising from the project.
- Have there been impacts on host country ability to implement the Convention on Biological Diversity.

Sustainability: Extent to which the outcomes of the projects, at either output or purpose level, have continued on after the end of the project. Guiding issues include:

- Extent of the ownership of the project purpose and achievements, and means for ensuring this ownership.
- Extent of the policy environment being in support of the project purpose and achievements.
- Extent of the institution capacity of host country and beneficiary institutions to carry forward project outcomes post project support, at the level of scientific, technological and financial considerations
- Extent of the socio-cultural factors being in support of project outcomes, and whether the project outcomes are well grounded.

Methodology

The ECP shall be undertaken in close collaboration with Darwin Team Leaders and host country institutions, and engage with project stakeholders and beneficiaries. Wherever possible, ECP consultants should consultant with National CBD focal points.

The ECP consultant shall ensure that the ECP is informed through consultative and participatory work sessions and semi-structured interviews with project team members, project beneficiaries and other project stakeholders. Use of participatory assessment tools should be used where ever possible (eg timelines, mapping, stakeholder analysis)

Timetable

The ECP in Indonesia shall be undertaken according to the following schedule:

- Preparation and review of documentation – 1 day
- Field mission and travel - 6 days
- Report preparation – 3 days

Reporting and Feedback

No later than two weeks after the end of the field mission, the ECP consultant shall submit a **draft report** to the Team Leaders and the Darwin Programme Director. Thereafter, the Team Leader, host country institution(s) and the Darwin Programme Director shall have up to two weeks to submit comments to the ECP consultant. The ECP consultant shall finalise the ECP report no later than one week after receiving comments on the draft report.

As a guide, the ECP draft and final report should be no more than 15 pages (excluding annexes) and reflect the following outline.

- Executive Summary: A free-standing executive summary mainly on the key fey findings of the ECP. It should be short and no more than four pages.
- Main Text: Should start with an introduction describing the projects being reviewed and the evaluation objectives. The body of the report should follow the five review criteria described in the methodology with emphasis on describing status of project outcomes and achievements.
- Conclusions on lessons learned and best practice.
- Annexes should include:
    - The TORs for the ECP
    - Logical Framework of projects evaluated indicating original intended purpose and outputs, actual achievements by the end of the project, and outcomes at the time of the ECP..
    - Sources of evidence of achievement, impact and legacy from Darwin projects.
    - List of persons/organisation consulted

- Documentation consultant
- Other relevant annexes

Current Projects

While you are not required to interact with current projects in the country/region, you might find it helpful to know that the following Darwin projects are currently active in Indonesia since there may be an element of overlap of partners in particular.

Project Ref	Title	PL	Organisation	Partners	Dates
13-028	Establishment & Management of Nantu National Park, Gorontalo Province, Sulawesi	Lyn Clayton	University of Oxford, WildCRU	Gorontalo local government	1/11/04 – 31/10/07
14-031	A Market-Led Conservation Response to the Domestic Bird-Trade in Indonesia	Paul Jepson	Environmental Change Institute	Birdlife Indonesia	1/4/05 – 31/3/08
14-037	Conserving Coral Reefs Through Community Ownership and Enterprise in Indonesia	Trevor Rees	LEAD UK	LEAD-Indonesia	1/5/05 – 30/4/08

Annex 2 Time Line for Nantu Protected Area

Year	Key events
1989	Nantu area isolated with occasional wildlife poaching and unlicensed rattan collection. Three salt licks identified, important for wildlife but creating high vulnerability from poachers who knew of them
1989 – 1996	Lynn Clayton undertaking DPhil based on field research in Nantu area, writing up in Oxford (Sep 94 to Sep 96), provided basic protection through engagement with local communities and limited patrols
1991/92	During brief absence from Nantu to raise funds, poachers snared a number of babirusa at the salt lick
	Sugar plantation established by Naga Manis on flood plain near Nantu, leading to forest clearance and increased human population pressure CIDA proposal for an irrigation scheme with the Nantu area as a major part of the catchment did not go ahead, reducing potential service values and funding opportunities for protection
1993	Initially a negative reaction to creation of protected area from forest industry interests, lowland forest has a number of valuable species, including mature *Eucalyptus deglupta*
	More favourable view of creation of a protected area expressed by Indonesian Forest Industry Association (APHI) but despite their active engagement, support from national government level not forthcoming
1994 – 96	Two locally appointed personnel maintained a presence during absence of researcher for writing up thesis, minimal illegal activities in Nantu but extensive destruction from legal logging in the wider Paguyaman watershed, including localities of two salt-licks
1997 – 2000	DI Project 5-127 October 1997 to October 2000 focused on analysis of the trade in wildlife and rattan, collecting population data and testing the impact of conservation policies. In addition, training and awareness raising was also undertaken.
2000 – 2001	Period between successive DI projects (5-127 and 9-012) funds secured from Peoples Trust for Endangered Species to maintain patrols and protection
2001 – 2004	DI Project 9-012 October 2001 to September 2004 established the Paguyaman Forest protected area and delivered high profile publicity and awareness raising material while maintaining and improving control. YANI, a local NGO partner was created and supported by the project
2004 – 2007	DI Project 13-028 November 2004 to October 2007 seeks to raise the protected area to National Park status while maintaining support for patrol activities and strengthening the local NGO partner YANI and the University. Social development activities including health and income generation activities as well as continuing support to schools. Monitoring of wildlife populations and illegal activities
2007	Efforts being made to secure sponsorship or a trust fund to secure protection. Increased pressures along southern boundary from settlement and along northern boundary following upgrading of former track, allowing improved access for timber cutting and poaching as well as encouraging settlement and forest clearance

Annex 3 Ongoing DI Project 13-028 – Nantu NP

This latest phase of the Darwin support is due for completion in October 2007. To date the project has achieved, or is working towards, the following:

- Securing National Park status was the original aim but given the dire and degraded status of the relatively adjacent Bogani Nani Wartabone NP this seems unlikely to provide the level of protection needed;
- The project has continued to support patrols and to maintain effective control, especially of the wildlife resources in the area;
- The project has provided capacity building opportunities for the local University and YANI the NGO partner;
- Preliminary household surveys have been undertaken to determine attitudes and provide a basis for livelihood support interventions. The project provided financial and logistic support for Ani Kartikasari's fieldwork on Perceptions of Local Stakeholders in Gorontalo, which subsequently formed the basis of her doctoral degree in New Zealand. The fieldwork also provides a solid foundation for future targeted livelihood support interventions;
- Teak and cocoa plants have been provided to interested villagers and support given to women's groups, including some basic health interventions facilitated by the project from the Manado medical school and the personal contacts of the researcher;
- Awareness raising, especially linked to the children's book on babirusa, which continues to attract wide interest in Indonesia and as an example of crafting publications for specific audiences to disseminate research findings;
- Publicity activities, including hosting a French TV crew at the main camp.

The situation in the area surrounding the protected area is a cause of concern. The newly improved road along the northern coast is facilitating access to the northern boundary area of the reserve and settlement continues to expand along the southern boundary. On the other hand, the value of watershed protection linked to rice irrigation is now being appreciated and the dam construction proposed in 1992 is being revisited. This would give further rationale for protection of the wider area, including Nantu.

It seems that the project has not yet reached a sustainable outcome and, as already proved by the project, even temporary withdrawal of the patrols leads to immediate encroachment by illegal loggers, rattan collectors and poachers.

The long-term security of the area and bringing the Darwin support to fruition will require either a trust fund or guaranteed support from the national authorities. The alternative livelihood approaches undertaken to date have not yet come to fruition as originally intended although there is potential that could be further developed. This is mainly due to the limited capacity of the project to undertake the necessary analysis and provide the inputs when patrol and control activities take so much of the limited resources available.

A further project designed to consolidate the gains to date, including calculation of the sustainable off-take of wild pig – the alternative to babirusa – is required. It should be combined with a livelihoods based approach delivering alternative income sources, especially to those impacted upon by the project and building on the successful awareness raising and initial alternative livelihood activities undertaken so far. It should also include restoration to bring the boundaries to a more logical line and restitute the cleared steeper slopes.

In common with all field based Darwin projects, part of the reason for the success that has been achieved is the willingness of personnel to work long hours, weekends and holidays often in very isolated and arduous conditions. This incredible value of this for the overall Darwin Initiative needs to be more widely recognised and more fully appreciated.

Annex 4 List of peer reviewed publications

Project 5-127

Clayton L.M. Milner-Gulland E.J. Singa D.W. Mustari A.H. 2000. Effects of a proposed *ex situ* conservation programme on *in situ* conservation of the babirusa. *Conservation Biology*

Keeling M. Milner-Gulland E.J. Clayton L 1999. Spatial dynamics of two harvested wild pig populations *Natural Resource Modelling* **12** 147-169

Clayton L. Milner-Gulland E.J. Sarjono A.P. 2000. Sustainability of rattan harvesting in North Sulawesi, Indonesia *Darwin Manual of Plant Conservation in the Tropics*

Clayton L. Milner-Gulland E.J. 2000. The trade in wildlife in North Sulawesi, Indonesia. *Hunting for sustainability in tropical forests* ed Robinson J.R and Bennett E.L.

Project 7-135

Eds Rieley, J O. and Page, S.E., 2001, International Symposium on Tropical Peatlands, 50 papers

Page S.E. Rieley J.O. 1998, Tropical Peatlands: a review of their natural resource functions with particular reference to South East Asia

Page S.E. Rieley J.O. Shotyk O.W. Weiss D. 1999. Interdependence of peat and vegetation in a tropical peat forest, *Philosophical Transactions of the Royal Society*, **354**, 1885-1897

Page S.E. Siegert F. Rieley, J.O., Boehm H-D.V., Jaya A. and Limin S.H. 2002. The amount of carbon released from peat and forest fires in Indonesia during 1997, *Nature* **420**, 61-65

Page S.E. Wust R.A.J. Weiss D. Rieley J.O. Shotyk W. and Limin S.H. 2004. A record of Late Pleistocene and Holocene carbon accumulation and climate change from an equatorial peat bog (Kalimantan, Indonesia): implications for past, present and future carbon dynamics. *Journal of Quaternary Science* **19**, 625-635.

Project 9-012

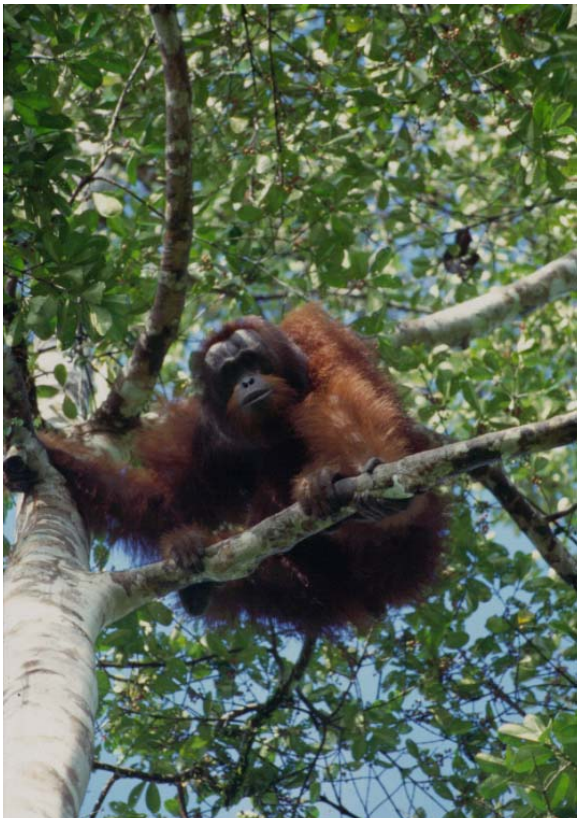
Clayton L.M. Babirusa: Tusk Master. *BBC Wildlife Magazine 21*(1), 52 – 57.

Colbeck M. and Clayton L. 2003. Tempat Istimewa di Dalam Hutan (The Special Place in the Forest).

Milner-Gulland E.J. and Clayton L.M. 2002. The trade in babirusas and wild pigs in North Sulawesi. *Ecological Economics* **42** 165–183

Pakaya A.H. et al. 2003. Suatu Tinjauan Ekologis Tentang Kemungkinan Pengelolaan Suaka Margasatwa Nantu, Hutan Lindung Boliyohuto dan Hutan Produksi Terbatas Boliyohuto Sebagai Taman National Nantu Boliyohuto di Kabupaten Gorontalo, Provinsi Gorontalo. Hi.

Annex 5 ECP Synthesis report



Overview of Evaluations of Closed Projects in Sabah and Indonesia

P D Hardcastle

April 2007

Final Report

Contents

Cover photos Left: Mature male Orang-utan in the Lower Kinabatangan Wildlife Sanctuary, Sabah

Right: Mature *Eucalyptus deglupta*, Nantu River, Gorontalo, Sulawesi, Indonesia

Executive Summary

This brief report draws on the Evaluations of Closed Projects undertaken in Sabah and Indonesia. Three projects were looked at in Sabah and five in Indonesia; all had relevance to the CBD theme of Forest Biodiversity. The evaluations showed that all the projects were *Relevant* and had been *Efficiently* delivered.

The *Effectiveness* of the projects varied. The more straightforward projects proved very effective, while the more complex ones were partially effective. A similar split was observed in terms of *Impact* and *Sustainability*.

It is concluded that projects can be divided into three broad categories. Discrete projects, which achieve a “one-off” outcome, which is stable and useful, although it can be further developed at a later date. Stepwise projects reach a stable end point, which can be built upon after some delay without loss of value of the findings and outcomes. Contiguous projects only start a process and do not reach a stable outcome and further support is required if the gains are not to be lost. There were examples of all three types in the sample examined.

The differences in effectiveness seem to be correlated with the capacity of the local partner to implement the project findings. Where the partner was able to implement these directly, the project was generally more effective than where this was not possible. Projects that require policy level changes were generally less effective overall than those projects where the local partner could directly apply the outcome.

There was substantial synergy amongst projects in Sabah, where researchers and institutions worked closely together on a regular basis. This also maximised the benefit of earlier capacity building, with people trained by earlier Darwin projects contributing to subsequent projects. In one case, the expertise was used in non-Darwin funded continuation. The Darwin Initiative should perhaps give more consideration to building and supporting networks amongst researchers to secure the benefits of this potential synergy.

There are benefits for Darwin project personnel from having closer linkages. In addition to research findings and experience, administrative matters also benefit from closer contacts. The Darwin Initiative has not to date made as much of the potential contact between projects as it might.

This overview proposes that more consideration is given to the capacity of local partners in Darwin project proposals to implement the outcomes, It also proposes that careful consideration of whether a stable endpoint can be realistically reached during the project period. This is not to be taken that project proposals that do not do so should be rejected, more that such proposals require special attention to how the outcomes will be supported until a stable end point is reached.

Finally, this overview confirms the findings of both evaluations that all of the projects evaluated were successful and that they represent extremely good value for money for the Darwin Initiative.

Background and Projects Evaluated

As part of the wider Monitoring and Evaluation component of Darwin Initiative programme management, evaluations of closed projects that were relevant to the forest biodiversity theme of CBD were undertaken recently in Indonesia and Sabah. These have been fully reported upon separately. The purpose of this brief report is to draw out the lessons learned from these two evaluations and try to identify useful guidance for future management.

Closed Projects evaluated in Indonesia

Indonesian Botanic Garden Biodiversity Database (4-068)

Project Purpose

To create a biodiversity documentation system for the Botanic Gardens of Indonesia, including registration, documentation, coordination and long term data integrity. To install appropriate computer software and train staff in its use. To strengthen the capacity of BG staff for plant conservation.

Forestry Curriculum towards sustainable forestry and conservation of biodiversity in Indonesia (6-166)

Project Purpose

To review the forestry education system and make recommendations in line with the provisions of the Biodiversity Convention

Biodiversity of peatswamp forest in Central Kalimantan, Indonesia (7-135)

Project Purpose

To provide baseline information required to inform Government Agencies and others of the importance of peatswamp forest

Sustainability of Wildlife and Rattan Trades in North Sulawesi (5-127)

Project Purpose

To study the sustainability of wildlife and rattan trades in North Sulawesi, quantifying the offtake, its effects on traded species and the effects of policies to make the trade more sustainable and profitable

Conservation of the Paguyaman Forest in North Sulawesi Indonesia (9-012)

Project Purpose

To establish a functioning nature reserve at the Paguyaman Forest

Closed Projects evaluated in Sabah

Biodiversity of butterflies in tropical rainforests of Sabah, Borneo (7-040)

Project Purpose

To develop strategies that balance conservation of rainforest biodiversity with local community requirements, monitoring changes in butterfly communities as an indicator of habitat change

Conservation of the Orang-utan in Kinabatangan Wildlife Sanctuary, Sabah (9-016)

Project Purpose

To provide a range of essential information on the genetic structure of the Kinabatangan orang-utan population to create a conservation strategy

Molecular tools for promoting biodiversity in rainforest fragments (10-025)

Project Purpose

Data gathering and capacity building to assist conservationists, ecologists and forest managers in Sabah with promoting responsible economic growth … whilst minimising the impacts of loss and fragmentation

Key Findings

Basic comparisons

In order to make sense of the key findings it is necessary to appreciate the similarities and broad differences between Indonesia and Sabah. Both have very important tropical moist forest resources, including substantial areas of high conservation value, and both have seen extensive commercial logging of the forest resource. Forest conversion for agriculture and crops such as oil palm has occurred in both states but is more extensive in Indonesia, which has a much larger geographic area and population. In addition to high biodiversity values, there is a high degree of endemism in both Sabah and Indonesia. Furthermore, Wallace's line, separating the Indo-Malaysian and Australasian floristic and faunal regions, cuts through Indonesia, making the situation there even more complex than in Sabah.

The differences noted above are further reflected in the institutional landscape. In Sabah, the institutional landscape is small and quite tightly knit. Biodiversity researchers and practitioners know each other fairly well and meet regularly, facilitating exchange of information and ideas. By contrast, the size and complexity of Indonesia means that the institutional landscape is much more complex and individual institutions, let alone individual scientists, are relatively more isolated. There is also the question of language, English being more widely used and understood in Sabah.

Evaluation summary

The sections below are structured according to the standard headings used in project evaluation.

Relevance

All the projects, in both Indonesia and Sabah, were assessed as being highly relevant to both national needs and to CBD.

Efficiency

All the projects had been very efficiently delivered with comparatively limited financial resources. In addition, it was apparent that the researchers involved had all worked far in excess of normal hours in order to achieve what they had, often in extremely arduous conditions.

Effectiveness

This aspect shows much more variation, especially amongst the projects in Indonesia. All the Sabah projects were essentially scientific with research and capacity building objectives. All these objectives were successfully achieved and in some cases exceeded.

In Indonesia, the two simpler projects on the herbarium database and the revised curriculum successfully achieved their planned targets. The peatswamp forest project successfully delivered its science and, after resolving problems due to poor English, its capacity building target. Where it was not effective was in influencing land use decisions.

The two linked projects in Sulawesi were successful in their data collection and analysis and in securing effective protection for an area that was eventually expanded to 52,000 ha. This provided a core refuge for what is thought to be the last remaining significant wild population of babirusa. These two projects, and their successor (13-028), were also effective in their awareness raising activities. To date, however, the protected area has not been successfully secured, its continued existence, and the survival of the babirusa, depends on continued external support.

Impact

The impact is strongly correlated with the effectiveness of the project. In addition to the points noted in the previous section, there has been a major positive impact from capacity building in Sabah. The Institute of Tropical Biology and Conservation at University of Malaysia, Sabah is an outstanding legacy built from engagement in a series of Darwin projects. Similar, but less spectacular, capacity building has occurred at the Forest Research Centre in Sandakan and in the Sabah Wildlife Department. The latter was recently separated from the Forest Department and is comparatively poorly resourced. Darwin projects have been valuable in assisting the fledgling department with capacity building. In addition to the closed project on Orang-utan, the Wildlife Department is involved in two ongoing projects (one on the Bornean Elephant and one on the Bornean Wild Cat and Clouded Leopard).

In Indonesia, there has been much less impact on capacity building. The two projects in Nantu, Sulawesi, have provided support to a local NGO (YANI) and to the University of Gorontalo but the scale is quite limited. The peatswamp forest project was ultimately very successful in building capacity on peatswamp ecology and hydrology in the University of Palangka Raya. Because of the lack of close links amongst Darwin projects in Indonesia, there has never been the synergy between projects that has developed in Sabah.

Sustainability

The issue of sustainability is not a simple one. In some cases, a project results in changes that can be readily carried forward by the partner institution. This was the case with the herbarium and university curriculum projects in Indonesia. In both cases, the results of the project have been used and further developed after the Darwin project was completed.

In the Sabah projects, sustainability has been secured from capacity building, with personnel trained by one project being available for future projects as well as for the institutional partner more generally. In parallel with this, the scientific results from the Sabah projects have also been used progressively by later Darwin projects and in day to day work. These projects certainly reached a sustainable outcome.

The peatswamp project in Kalimantan secured a sustainable outcome from its capacity building, the University of Palangka Raya now being highly regarded regionally and internationally as a centre of expertise on peatswamp ecology and hydrology. The research from the project was carried forward albeit with EU rather than Darwin funds, leading to much improved understanding of tropical peatswamps.

The projects with the least sustainability are the two at Nantu in Sulawesi where, even with the current third project, the protected area has not been secured. The first project (5-127) gathered information, the second and the current projects have tried to create a protected area but to date it has not proved possible to hand this over to the national authorities without compromising its integrity. A further consolidation phase is required, building on what has been achieved and engaging more comprehensively with local communities.

Discussion

The Darwin projects in Sabah have a coherence that is not apparent from those in Indonesia. This coherence appears to be more a result of the linkages between the institutions and researchers than of any strategic funding decisions. Regardless of its origin, however, the coherence means that the legacy from Darwin support is substantial. In particular:

- The Institute for Tropical Biology and Conservation at UMS is now a major centre of excellence in the region and has staff and physical resources to match this status;
- Capacity building has also been significant in the Wildlife Department and at the Forest Research Centre, both of which have been partners in Darwin projects;
- The findings on the biodiversity value of forest fragments are of crucial importance to conservation, as it opens up a strategy for restoration. Furthermore, there is some evidence that the research supported by Darwin has been instrumental in the 2006 declaration of 2 protected areas of Lowland tropical forest totalling some 237,000 ha;
- The findings have also been instrumental in the formulation of forest conservation planning guidelines, which will impact over a very substantial area of forest.

Despite equivalent effort and some very significant results from the projects evaluated, there has been no equivalent wider values secured in Indonesia. This is perhaps the most important finding from the two evaluations taken together. The table below gives some key difference between Indonesia and Sabah.

Table 2 Basic Comparison between Indonesia and Sabah

Indonesia	Sabah
Medium level economy, high level of forest dependency in some regions, commercial forestry important, land use decisions not always rational	Relatively wealthy country, limited forest dependency, commercial forestry important, land use decisions generally transparent
Huge area and high biodiversity values	Small area, high biodiversity values
Complex institutional landscape	Simple institutional landscape
Large numbers of scientists widely spread	Small numbers of scientists, concentrated
Relatively few DI projects, sequential projects very rare	Many DI projects including sequential projects
Projects generally isolated from one another	Close linkages between projects and researchers
Relatively weak national NGO sector, some international NGOs	Relatively strong national and international NGO sector

In order to secure wider values, it appears to be essential for projects to engage with local partners that have the mandate and leverage to make changes. Where projects in Indonesia had only to secure changes that were within the direct mandate of the partner, they were successful. Where the local partner was subsidiary and did not have the mandate to implement the necessary changes, there was little or no success at the wider level. Despite this, the potential to make appropriate changes will continue to exist for some years before it becomes outdated

In Sabah, because the partner institutions included those with the power to make the necessary changes, the wider impacts have been very much more apparent. This is evidenced by the step of declaring conservation areas. Even here, however, there is further to go. The real potential wider benefit from the work on fragmentation will come with forest restoration. This has yet to begin.

It is evident from the experience in Sabah that there is considerable potential synergy from Darwin projects working closely together. Furthermore, people trained under Darwin projects in Sabah have frequently used their expertise in later projects, giving both cross project and temporal synergies.

The Darwin projects in Indonesia have not in the past maintained any contact. Following the field visit for evaluation and a mid-term review, a number of potentially useful cross-linkages became apparent and these have been taken up by the projects concerned. In some cases, there was contact but the parties were unaware of past Darwin activities. The support to the University of Gajah Mada and the Botanic garden are examples of this, yet both still have strong positive experience from past Darwin support and appear willing to engage with current projects.

The peatswamp forest project is the only one where Darwin support led to further research funded by a different agency, in this case EU INCO. The subsequent projects were predicated on the initial Darwin funds and this is an example of a different wider value being achieved.

The projects evaluated span a period of more than 12 years, the earliest starting in 1994. In this time, there have been major changes in the wider operating conditions. The Millennium Development Goals emphasise the importance of addressing poverty and equity issues concurrently with conservation while more recently, global warming and carbon flux has become a dominant issue in international debate. Global warming is doubly relevant: it will affect species survival but there is also potential for forest ecosystems to contribute to reducing atmospheric carbon.

It is obviously not appropriate to expect every Darwin project to address directly all issues of significance. There are, however, some interesting observations that can be made. The research conducted under peatswamp project in Indonesia (7-135) provided valuable information on carbon storage and the impact on the carbon economy of changes such as drainage and/or land conversion. With the recent recognition that avoided deforestation is a valuable strategy, it may be that projects such as the Nantu protected area could tap into carbon funds in order to secure their conservation goal.

The projects in Sabah are of particular interest for a forest restoration strategy. By showing the biodiversity value of fragmented forest, restoration through enrichment planting for example, could result in a much more biodiverse ecosystem than would have been expected from forest restoration. The findings from the Sabah projects have great potential value to guide and inform future forest restoration processes.

Conclusions and recommendations

Types of project

There appear to be three different types of project that have been supported:

- Discrete - completed, stable, good legacy potential as a "one-off" contribution, may be developed further but probably as one element amongst others. Example would be the computerised herbarium management system;
- Stepwise - reaches a stable end point, great potential for further activities, these can be delayed for some time without major losses but note need to retain expertise. Examples are the work on forest fragments;
- Contiguous - need to have follow on support immediately after the project ends to avoid catastrophic loss. Example is Nantu NP.

If this categorisation is accepted, then there are implications for project selection for funding. In terms of their profile and legacy, *Discrete* projects should be easily delivered, make solid achievements and leave a legacy for the future. Such projects are relatively low risk and tend to operate at the local level or with a single institution.

Stepwise projects are generally more complex and have a higher level of risk but they also have a much greater potential for leading to follow on projects and for providing good legacy. One important attribute is that such projects should reach a stable end point. The increased complexity means that these projects often contribute to wider strategic or policy level decision making and thus such projects can be more influential than the previous category

The *Contiguous* projects are by definition not going to reach a stable end point and, to secure legacy, will require follow on funding for 3 or even four phases. These phases can tackle different aspects of the problem. Such projects carry a high risk as if funding ceases, most or all the gains may be lost but they also have potential to provide high profile legacy. In the main, such projects will have policy level implications and often also include a developmental as well as a scientific focus. Engaging with local communities is often much more time consuming than undertaking research as progress depends on establishing trust.

A categorisation of the type noted above would be helpful for making funding decisions. It would clarify the likely sustainability and the level of risk borne.

Project partners

Related to the categorisation laid out above is the local partner. Simple projects where the local partner is the main beneficiary, or one of several, are likely to meet their anticipated outcomes more readily than those where the project is delivering findings of policy level significance or where the beneficiaries are widely dispersed. The Sabah projects, although they generated findings of interest at a range of levels operated within a tight institutional network. In the Indonesian projects at the Botanic Garden and the University of Gajah Mada, the local partner was the immediate and sole beneficiary. Both projects findings were taken up and had a long-term legacy.

The peatswamp forest project in Indonesia, by contrast, produced the most erudite scientific publications, was successful in building capacity at the partner University but its findings have never been utilised in the way they could have been, to inform land use decisions on peatswamp forest areas. It is an open question as to whether such projects in isolation can be fully effective. Had the project operated within, for example, the framework of a donor-supported programme, the additional leverage might have encouraged the findings to be taken up. The project in fact worked closely with the then DFID Forestry programme but even so Indonesian policy makers have largely ignored its results.

The two projects at Nantu have operated in the most isolated conditions of any of those evaluated. Notwithstanding this, they have achieved major breakthroughs at local level. This has been with awareness raising in local communities and support from local politicians, as well as local forestry and police service personnel. The research on the extent of illegal trade in timber, rattan and wildlife was the first information from the area and the publications on babirusa are the main ones of significance on the species.

Despite these successes, and despite some interest at national level, the much looser institutional structures in Indonesia mean that there has been no tangible support from national level institutions, with the result that the planned transfer to National Park status in the current project has been postponed. The level of destruction and illegal activity evident in the proximate National Park in Sulawesi does not give great cause for optimism that national level protection would be effective.

On the basis of the projects evaluated, it seems that giving more detailed consideration to the effectiveness of the operational framework for implementing project findings and other outputs should be given when the project funding is being assessed. Projects that work on wide-ranging issues and require policy level changes need to be very carefully assessed. While the research and local level outputs can be successfully achieved by most projects, the level of influence at policy level requires detailed consideration of the institutional structures within which the project will operate.

Linkages between Darwin projects

The system of funding of Darwin projects is based on the quality of the applications: there is no over-arching strategy being applied. Regardless of this, many countries with important biodiversity issues have several concurrent Darwin projects as well as closed projects. This has considerable potential synergetic value but the potential has not been tapped into so far.

The Sabah projects evaluated show how valuable close contact between researchers on different projects can be. The limited number of institutions in Sabah has helped, as there is an obvious and effective point of direct contact. In Indonesia, linkages between Darwin projects have been largely non-existent to date although this has improved following the contacts made during the evaluation and mid-tern review visits.

There are two benefits from having more contact: the first is exchanging ideas on science and research, the second is exchanging views and experience of project delivery. Both are important. Where projects are isolated, opportunities for peer discussion can be very limited. Using the network of Darwin projects is one method for overcoming such isolation.

Administratively, it is also useful for Darwin projects to come together. As well as Indonesia and Sabah, there are projects in Philippines, Thailand and adjacent countries. All are well connected by air. By bringing together people working on different Darwin projects, discussion of common issues as well as exchange of ideas and experience is facilitated. The Darwin Initiative has not so far exploited the potential benefits from such linkages and meetings.

Core recommendations

- Realistic consideration of likely project outcomes at the selection stage, recognising the need for a stable end point to be achieved, which may need support beyond a single project;
- Ensure that project partners are appropriate for implementing the level of result anticipated;
- Appreciate fully the need for a range of complementary expertise to address complex problems, especially where local communities and/or policy issues are involved;
- Make full use of personnel trained in earlier Darwin projects;
- Encourage and provide support for communication amongst Darwin projects within countries and regions.

Figure 1 Map of the Nantu National Park area