

The Darwin Initiative: Achievements in Forest Biodiversity Conservation

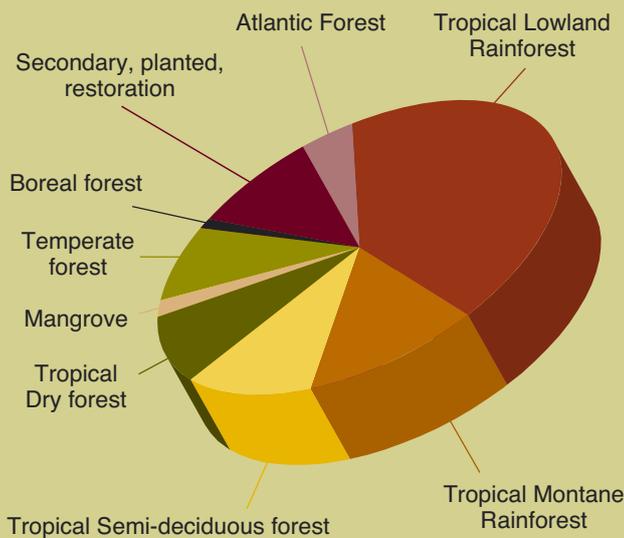
Forest ecological types, hotspots and vulnerabilities

Mention 'forest conservation' and people tend to think of tropical 'rainforests'. But in fact all forests hold valuable biodiversity, and dry forests are of immense importance to human livelihoods, whilst boreal forests are critical to international trade and their soil carbon is important in climate change.

areas is happening at high rate – as much as 2% per year in places, often in poor countries where most of the population is dependent on forest cover in some way.

So, what can the Darwin Initiative do in the face of such challenges? A recent thematic review of Darwin Initiative projects working on forest biodiversity has assessed achievements to date. This briefing note summarises these successes.

Darwin Initiative projects in
forest ecological types



The Darwin Initiative works in all these ecological types.

The CBD has a stated aim of conserving 10% of each forest type. Yet many known forest biodiversity hotspots already are reduced to less than 10% of their original extent – making them particularly high priorities for conservation activity. At the same time, forest loss in some of these



Photo credit: PD Hardcastle



The CBD Goals for forest biodiversity and the Darwin Initiative

The Darwin Initiative's main objective has been to support countries to implement the CBD. At its COP6 (2002) CBD agreed an expanded programme of Work on Forest Biodiversity, then at COP8 (2006) Forest Biodiversity was included in the overarching framework of Goals and Targets for 2010 for all CBD Thematic programmes. This note highlights those Goals that Darwin Initiative projects have been particularly effective at delivering on.

CBD COP6 Expanded Programme of Work Goals To characterise and to analyse from forest ecosystem to global scale and develop

Case Studies: Para-taxonomy – broadening the impact of taxonomic inputs.

Limited taxonomic expertise is often a key constraint to effective conservation. Training 'para-taxonomists' overcomes this and harnesses local knowledge of the resource. Para-taxonomists are people from the local community who are trained in basic taxonomy methods.

Project 10-030 in Papua New Guinea found this approach to be very effective in quickly developing much improved local capacity and knowledge. The approach was cost effective,

general classification of forests on various scales in order to improve the assessment of status and trends of forest biological diversity.

Typically under the Darwin Initiative, this has been through surveys of ecosystems or ecosystem components. Forest ecosystem components surveyed have included timber and non-timber resources, such as medicinal plants, primates, insects, avifauna, fruitbats, and forest molluscs. Many of these biodiversity surveys have engaged effectively with local people, with some excellent examples of developing local capacity by training 'para-taxonomists'.

and very appropriate in a country with large, but little known, biodiversity.

Project 6-050 in Central America developed a computerised identification system, and this is very useful to para-taxonomists who do not have specialised knowledge. The "DAISY" system can identify 10 species per second, identify organisms from diverse species, runs on Microsoft operating systems, can share results by internet or phone, and can be easily used by field teams with hand-held devices such as 'Blackberries'. This will be piloted in Honduras in 2008.

Photo credit: Dr. Alan Stewart, University of Sussex.



Part of the Binatang butterfly collection, Papua New Guinea, that was collected using para-taxonomists.

Case Studies: Forest restoration – sharing lessons, extending impacts

Two projects have dealt with forest restoration using the framework species approach. This method concentrates on planting 20-30 indigenous species on degraded sites.

Project 11-023 in Thailand focused on education and training with the partner institution (the Forest Restoration Unit at Chiang Mai University - FORRU). FORRU has now become a centre of expertise on forest restoration in the region, and many schools are now taking up the materials produced. Project 14-010 drew on FORRU's experience and transferred it to partners in Cambodia and Laos, and then into China. Like the FORRU project, this project has created networks of practitioners and has developed and adapted the FORRU materials (including translation into national languages). Very positive uptake has been recorded in the 3 new partner countries.

These examples demonstrate Darwin's success both in the restoration goal and in the value of capacity building for successive projects.

To protect, recover and restore forest biological diversity.

Many Darwin projects have dealt with management plans at all levels, including species management plans. Typically the underlying strategy has been to reduce threats to the forest or key components of it. A limited number of projects have dealt with forest restoration – these hold useful lessons as restored, secondary and planted forests are now increasingly recognised as highly important sources of raw materials, reducing pressures on primary forest.

To promote the sustainable use of forest biological diversity.

Many Darwin projects have looked at non-timber products and services. Typically they have developed local skills and collected data in order to develop management plans for sustainable off-take. There are also some good examples of information collection to support sustainable harvest of commercial timber – this is particularly useful to refine guidelines and legal frameworks, and in reducing the biodiversity losses due to forest fragmentation after fellings. Nine projects in the million hectare Yayasan Sabah Forest Management Area have generated



Photo credit: Stephen Elliott, FORRU

Over-cultivated, abandoned and burnt, this degraded site was planted in June 2006 with 30 framework tree species to restore habitat connectivity for biodiversity conservation in a fragmented forest landscape in Doi Suthep-Pui National Park, N. Thailand.

valuable findings about fragmentation. For example, some (7-040, 9-016, 10-025, 14-022) have demonstrated that even highly degraded and fragmented logged forest retains significant biodiversity in the short-term. This suggests that fragmented forest is more valuable for forest restoration than was previously appreciated - if appropriate restoration is done quickly, biodiversity can be recaptured. The knowledge generated by this group of projects has been instrumental in establishing two new globally important protected areas, and planning for several others.

Increase public education, participation, and awareness.

This includes Darwin projects that have, for example, carried out specific education activities, set up user groups, sought participation in planning or surveys. Project 14-046 in the Srepok Wilderness Area in Cambodia took an innovative step by constructing a 3-D model of the area during a multi-stakeholder workshop. Government participants were surprised by the remarkable familiarity of local people with the terrain of the protected forest. The model and the shared knowledge were used effectively to plan management zones, and local people felt their voices had been heard.

Improve the infrastructure for data and information management for accurate assessment and monitoring of global forest biological diversity.

This is at the core of the Darwin Initiative, and it makes a strong contribution to building technical capacity through equipment and skills transfer. All projects make some contribution, but 29% have delivered particular impacts, such as establishing reference collections, databases, baseline sample information, getting information (for example, images of herbarium specimens) onto websites.

CBD COP8 Goals for CBD Thematic Programmes

Parties have improved financial, human, technical and technological capacity to implement the Convention.

Again, this is at the heart of the Darwin Initiative – most Darwin projects include a significant level of capacity building. Where projects have operated concurrently and sequentially, there has been outstanding and cost-effective benefit, with staff trained under one project then able to cascade their skills to new people, and

equipment from earlier projects can be used in subsequent ones.

Promote the conservation of species diversity.

Darwin has supported many projects that have made a real contribution to species conservation in many countries. These projects typically concentrate on threatened species, mainly through information documentation and ecological research. Other projects have taken a range of strategies, from field demonstrations to providing alternative sources of products.

Maintain capacity of forest ecosystems to deliver goods and services and support livelihoods.

Throughout the Darwin Initiative's lifetime, projects have contributed effectively to maintaining the ecosystem capacity, whilst since around 2002 there has also been a significant increase in projects focusing specifically on working with local people to identify products and services with real livelihoods values. The Darwin Initiative has responded well to the broadening of its mandate to be more 'livelihoods sensitive', using an appropriate range of approaches.

Case Study: Building capacity – concentrated effort, concentrated impact

The Universiti Malaysia Sabah has been a valuable partner for all the Darwin Projects in Sabah. The Institute for Tropical Biology and Conservation there is recognised widely as a centre of excellence and expertise.

Darwin projects have facilitated the development of the Institute, especially in new techniques and approaches. Also, a comprehensive museum of well-curated and accessible specimens has been created and is now accommodated in a purpose-built centre, which acknowledges the importance of Darwin support. The new skills have been retained and developed for inclusion in teaching and research programmes. This has led to very substantial impact as well as sustainability. Many of those who have benefited from Darwin support have subsequently passed on their expertise to others: an ideal outcome for the Darwin Initiative.



Dr Suzan Benedick (Darwin fellow) & Nasir Majid (Royal Society SEARRP research assistant) with some of the butterflies collected as part of project 7-040.

Photo credit: Glen Reynolds

Livelihoods sensitivity in Darwin Initiative forest biodiversity projects

Projects apply a wide range of types of livelihoods support. Examples include:

Skills development – building community management capacity (Nepal, Vietnam, Liberia), new livelihoods options (Guyana 15-013), taxonomy skills (PNG 10-030)

Sustainable consumption – buffer zone projects, sustainable offtake (Brazil 16-001, central Africa 16-010). In Guyana (12-019) community engagement and empowerment is at the heart of efforts to secure sustainable management.

Co-management – buffer zones and community forestry approaches. In Nepal (11-021), the policy and legal framework supports community management, but this basis is not always clear in other countries.

Alternative livelihoods – the few examples are mainly related to NTFPs. Project 13-028 in Gorontalo, Sulawesi, assisted local people to establish crops such as cocoa and small teak woodlots.

Livelihoods approaches – includes approaches working with private sector, such as projects in Colombia (11-014) and El Salvador (8-150) working with coffee farmers, and efforts to promote ecotourism.

Restoration – all restoration projects are working through engagement with local communities.



Photo credit: Lynn Clayton

Livelihoods assistance in agroforestry for local communities around Nantu National Park, Sulawesi, Indonesia (Project 13-028)

Overall, there is a significant level of innovation, and the potential value of the outcomes in terms of supporting biodiversity conservation is significant.

Promote conservation of biodiversity of ecosystems, habitats and biomes.

Many Darwin Projects have related to Protected Area management, or promoted similar protection through other means. Working with the private sector for change is increasingly evident. An interesting example in Chile (15-006) has been developing public-private partnerships to secure conservation on private land.

Pressures from habitat loss, land use change, etc. reduced.

The Initiative has supported a useful range of innovative and creative projects to address this goal. The results of this experience are very valuable. Projects have typically done work on Protected Areas, often building capacity, doing buffer zone management, ecosystem component management plans, commercialisation of products, and supporting community managed areas. Two projects relate directly to support of commercial forestry (12-014 in Brazil and 14-016 in Sabah) while the concept of conservation concessions is being tested in Sumatra (16-005) and in Sierra Leone (13-031).

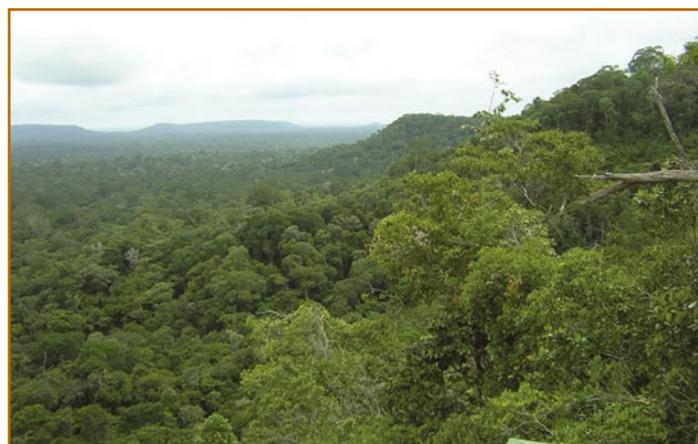


Photo credit: PD Hardcastle

Project 12-014 in Brazil assessed the biodiversity values of Amazonian primary, secondary and plantation forests

Key successes

Effective and efficient conservation. The Darwin Initiative has made excellent and effective contributions to the CBD obligations relating to forest biodiversity. It has done so through many, relatively small projects, which as a whole have achieved remarkable value for money. In addition, Darwin projects are excellent at leveraging additional funds to continue their work. Consequently, Darwin Initiative funds, whilst relatively small for each project, can be excellent value as catalysts to bigger things.

Information, knowledge and awareness. Darwin Initiative projects have successfully made a wide and diverse range of high value documentation and information available and secure. They have made

a real and substantial contribution to the sum of knowledge on forest biodiversity, including not only peer-reviewed scientific papers, but critically effective links into local school curricula and media for public awareness.

Capacity building and improved skills. This is a very valuable outcome of most projects, especially where there are multiple and sequential projects to create synergy.

Significant achievements in building in livelihoods aspects. The Darwin Initiative has successfully become 'livelihoods sensitive' in recent years. Projects use a range of approaches, including significant innovation, to achieve more effective conservation.

Overcoming challenges

Building strength in numbers. Single projects in a country often struggle more than those that are part of a Darwin group. Further emphasis on lesson learning between projects is important. Where a project is operating alone in a country, attention should be given to links with other institutions as a way to ensure effective and efficient operation.

More focus on vulnerable forests. The Darwin Initiative still seems to disproportionately attract projects in tropical moist forests. Given the importance of dry and boreal forests in particular, and the real vulnerability of a wide range of forest types, in future, a better balance should be struck.

Forest Biodiversity Hotspots with 10% or less of original cover remaining

Biodiversity Hotspots	No. of DI projects	Area remaining
Atlantic Forest	2	8%
Caribbean Islands	2	10%
Coastal forests of East Africa	2	10%
Horn of Africa	0	5%
Indo-Burma	9	5%
Madagascar, Indian Ocean	2	10%
Mediterranean Basin	0	5%
Mountains of SW China	0	8%
Philippines	3	7%
Sundaland	13	7%
Not in a Biodiversity Hotspot	31	

Keeping up with international agendas.

Darwin Initiative projects could take more of a lead in international trends in policy processes. Forest restoration and climate change, for example, are highly topical issues in the international arena at the moment, but very few projects are working on these issues directly. The Darwin Initiative has commissioned another review to look at implications of climate change on DI projects.



Photo credit Glen Reynolds

Sunrise over the Ulu Segama Forest Reserve, Sabah (7-040 and 10-025)

The Darwin Initiative aims to promote biodiversity conservation and sustainable use of resources around the world. It uses UK expertise working with local partners to help countries rich in biodiversity but poor in resources to fulfil their commitments under the CBD. The Initiative is funded and administered by the UK Government's Department for Environment, Food and Rural Affairs (Defra). Since 1992, the DI has committed over £45m to over 450 projects in over 100 countries.

This note was produced by the Edinburgh Centre for Tropical Forests (ECTF) www.ectf.co.uk

For information on the Darwin Initiative see www.darwin.gov.uk. For information on the CBD see www.biodiv.org.

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