



**Evaluation of Closed Projects in Brazil  
December 2007 and January 2008**

**Final report – 3 February 2008**

### The Darwin Initiative

The Darwin Initiative is a UK Government small grants programme which 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 Gordon Armstrong on behalf of the Darwin Initiative

Cover Photo Credit: Fishermen from the community of Ilha de São Miguel, Santarém, Brazil,  
Photo: Ed Parker, WWF-UK (Project 8-126)

For more information about this review, please contact:



Darwin Projects, c/o LTS International Ltd, Pentlands Science Park, Bush Loan,  
Penicuik EH26 0PL

tel: +44-(0)131-440-5181 fax: +44-(0)131-440-5501

e-mail: [darwin-projects@ltsi.co.uk](mailto:darwin-projects@ltsi.co.uk)

Websites: <http://darwin.defra.gov.uk> and [www.ltsi.co.uk](http://www.ltsi.co.uk)





# Contents

<b>EXECUTIVE SUMMARY.....</b>	<b>1</b>
<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. PROJECT EVALUATIONS.....</b>	<b>5</b>
2.1 FISCAL INCENTIVES FOR BIODIVERSITY CONSERVATION IN BRAZIL .....	5
2.1.1 Project implementation .....	5
2.1.2 Post project sustainability and impact .....	6
2.2 RIVER DOLPHIN CONSERVATION IN BRAZIL .....	6
2.2.1 Project implementation .....	6
2.2.2 Post project sustainability and impact .....	7
2.3 REPATRIATION OF HERBARIUM DATA FOR THE FLORA OF BAHIA, BRAZIL.....	9
2.3.1 Project implementation .....	9
2.3.2 Post project sustainability and impact .....	10
2.4 FISHERIES MANAGEMENT FOR BIODIVERSITY CONSERVATION IN THE BRAZILIAN AMAZON .....	11
2.4.1 Project implementation .....	11
2.4.2 Post project sustainability and impact .....	12
2.5 ENHANCING BIODIVERSITY CONSERVATION IN BRAZIL THROUGH THE USE OF AN ECONOMIC INCENTIVE ..	13
2.5.1 Project implementation .....	13
2.5.2 Post project sustainability and impact .....	14
<b>3. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>15</b>
<b>4. INNOVATIONS, LESSONS LEARNED AND BEST PRACTICE .....</b>	<b>17</b>
<b>5. ADVICE ON COMMUNICATIONS.....</b>	<b>18</b>
<b>ANNEX 1 TERMS REFERENCE – BRAZIL EVALUATION OF CLOSED PROJECTS.....</b>	<b>19</b>
<b>ANNEX 2 SUMMARY TABLES OF PROJECT ACHIEVEMENTS AND OUTCOMES .....</b>	<b>24</b>
<b>ANNEX 3 PERSONS CONSULTED .....</b>	<b>29</b>
<b>ANNEX 4 DOCUMENTATION CONSULTED .....</b>	<b>30</b>

This document is printed on 100% recycled paper and  
printed on both sides to save paper

## List of acronyms

CBD	Convention on Biological Diversity
CEPEC	Herbarium of the Cocoa Research Centre
DEFRA	Department fro Environment, Food and Rural Affairs
DFID	Department for International Development
DI	Darwin Initiative
FCO	Foreign and Commonwealth Office
HUEFS	Herbarium of the State University of Feira de Santana
IBAMA	Brazilian Federal Environment Agency
IC	Imperial College, London
ICMS	Brazilian value added tax
IDSM	Mamirauá Sustainable Development Institute
IIED	International Institute for Environment and Development
INPA	Brazilian National Institute for Amazonian Research
IPA	Herbarium of the Pernambuco Agricultural Research Institute
IPAM	Amazon Environmental Research Institute
RBG	Royal Botanic Gardens, Kew

## **Executive Summary**

---

Brazil is bigger than the whole of Western Europe, with a population of over 188 million people. It harbours the largest remaining intact tropical forest, 15 to 20% of all global biodiversity and the highest number of endemic species. Inappropriate and unsustainable use of natural resources is common with deforestation continuing at an alarming rate and many species probably becoming extinct before they are even known to science. In recent years, progress towards more sustainable practices has been made with a good legislative base now in place. Brazil has ratified the Biodiversity, Desertification, Ramsar and Climate Change Conventions. However, there is still a long way to go before Brazil will be in a position to fully abide by these conventions and the Biodiversity Convention, in particular.

Since 1994, the Darwin Initiative has approved a total of fifteen projects wholly or partially implemented in Brazil. Five of the eleven closed projects were selected for inclusion in the evaluation. These projects are:

- **Fiscal Incentives for Biodiversity Conservation in Brazil (6-098)**, closed in June 2000
- **River dolphin conservation in Brazil (7-035)**, closed in December 2001
- **Repatriation of herbarium data for the flora of Bahia, Brazil (7-108)**, closed in October 1999
- **Fisheries management for biodiversity conservation in the Brazilian Amazon (8-126)**, closed in June 2002
- **Enhancing biodiversity conservation in Brazil through the use of an economic incentive (12-015)**, terminated in May 2005

The evaluation is primarily intended to provide an external perspective on the legacy and impact of the cluster of closed Darwin Projects, and to draw out innovations, lessons learned and best practices. It was undertaken during December 2007 and January 2008.

Four of the five projects were well implemented, achieved their objectives and have had lasting long term impacts. They represented excellent value for money and produced results in excess of the value of the investment by Darwin Initiative. They have made important contributions to helping Brazil implement the Biodiversity Convention.

Highlights of the outcomes of these four projects include:

- demonstration of the value of a fiscal incentive (the “ICMS Ecologico”) in encouraging municipal governments to promote conservation and create protected areas;
- establishment of a long term programme of research and monitoring of river dolphin populations and behaviour which has made very important contributions to the management and conservation of Amazonian flooded forests;
- repatriation of herbarium data on the flora of northeast Brazil, strengthening the capacity of local herbaria and academic and research institutions and improving the quantity and quality of botanical research outputs;
- demonstration of the socio-economic importance of Amazon fisheries and evidence that co-management initiatives can safeguard the future of the fishery and conserve biodiversity.

One of the projects (12-015) did not achieve its objectives and was terminated early. This was due to change of institutional strategy of the host institution, a high turnover of local project staff and an inability of the host agency to adapt to changing political circumstances.

Summary tables of project achievements and outcomes are given in Annex 2.

All the projects suffered from the lack of long term funding for biodiversity research and conservation. The most important impacts are long term and came after the end of Darwin Initiative funding. If it was not for the dedication and effort (and at times personal funding) of project partners, none of the projects would have been able to continue and they would not have achieved the significant long term impacts that they have.

The successful projects worked with rather than through local institutions. Although local institutions were strengthened, the projects were not entirely "assumed" by local institutions.

Much basic information required for conservation management is still lacking in Brazil. All five projects were involved in generating new and improved information necessary for biodiversity conservation. Some projects have been more successful than others in feeding that information into decision making processes. But there still remains a major problem of how to transform improved biodiversity information into effective conservation.

Four of the five projects were concerned with the socio-economic aspects of biodiversity conservation including participatory community management of natural resources for the benefit of local livelihoods. Such approaches are highly relevant for the achievement of sustained biodiversity conservation in Brazil.

The varied and isolated nature of the projects meant that there was no interaction between them and no consolidated impact. Although most of the individual projects have achieved significant outcomes, the overall impact of the Darwin Initiative in Brazil is small compared to the scale of the problems. In relation to the scale of its biodiversity, Brazil is under-represented in terms of number of Darwin Initiative projects funded. The Darwin Initiative is not widely known within Brazil. In countries like Brazil, it may be better to focus on a few key biodiversity issues, biomes or committed people.

Better coordination between British government agencies supporting environmental projects in Brazil and better dissemination of their programmes would improve the effectiveness of Britain's contribution to biodiversity conservation, and the Defra Secretariat might consider how this could be achieved.

The value of evaluations of closed projects has been demonstrated by this review.

## 1. Introduction

---

Brazil is a large country - bigger than the whole of Western Europe. It has a population of over 188 million, including 600,000 indigenous people divided into 220 indigenous groups. Large areas, particularly in Amazonia and the central cerrado (woody savannah), remain in a largely natural state. Brazil harbours the largest remaining intact tropical forest, 15 to 20% of all global biodiversity and the highest number of endemic species.

In many ways, Brazil is still a “frontier” country of land occupation. Much development takes place in a predatory manner. Inappropriate and unsustainable use of natural resources is common. Only 7% of the Atlantic forest remains intact and destruction of the Amazon forest continues apace at an average of around 16,000 km<sup>2</sup> per year over the past decade. Huge areas of the cerrado are being cleared for cattle ranching and soy and sugar cane production.

Concern for the environment has only recently emerged. Environmental management and control is still in an incipient state. Serious attention only started to be given to environmental issues about 10 years ago in the run up to the Rio conference. Much of this was stimulated by external pressure. Since then, much has been achieved. The Ministry of Environment has become more effective – although it is still one of the weaker ministries with limited influence on major economic and social policy decisions. The concept of sustainable development is now generally accepted as the model to follow, at least in theory. A good legislative base is in place, although further refinement is required on user rights to natural resources. An extensive system of protected areas has been created but many of these are still “paper parks” without effective protection and management. There are over 600 indigenous territories covering 13% of the country. Brazil has ratified the Biodiversity, Desertification, Ramsar and Climate Change Conventions. However, there is still a long way to go before Brazil will be in a position to fully abide by these conventions and the Biodiversity Convention, in particular.

Since 1994, the Darwin Initiative has approved a total of 15 projects wholly or partially implemented in Brazil. Four of these are ongoing. Of the remaining eleven, six were not included in this evaluation due to the length of time since completion or previous participation in a mid term review. The five projects included in this evaluation are:

Project No.	Title	Purpose
6-098	Fiscal Incentives for Biodiversity Conservation in Brazil	To contribute to the implementation of the Biodiversity Convention in Brazil by stimulating the adoption of fiscal incentives for biodiversity conservation.
7-035	River dolphin conservation in Brazil and Pakistan	To determine the impact on dolphins of various aquatic management regimes within the Mamirauá Sustainable Development Reserve.
7-108	Repatriation of herbarium data for the flora of Bahia, Brazil	To develop and refine the methodology for data capture and repatriation of data.
8-126	Fisheries management for biodiversity conservation in the Brazilian Amazon	To evaluate fisheries management approaches to the conservation of floodplain ( <i>varzea</i> ) habitats and their associated biodiversity.
12-015	Enhancing biodiversity conservation in Brazil through the use of an economic incentive	To assist Brazil to meet its obligation under the Biodiversity Convention (article 11/CBD) through the effective implementation of an economic instrument (the ICMS Ecologico) which acts as an incentive for biodiversity conservation.

The evaluation is primarily intended to provide an external perspective on the legacy and impact of the cluster of closed Darwin Projects, and to draw out innovations, lessons learned and best practices that account for positive legacy and impact (see Annex 1 for Terms of Reference).

The evaluation was undertaken during December 2007 and January 2008. The evaluation was hindered by a lack of documentation of some of the earlier projects. In particular, for projects 6-098 and 7-035, none of the basic project documentation (proposal, annual reports, final report, etc.) was available from the Darwin Initiative secretariat. The project leaders of these two projects were eventually able to provide the reviewer with some of this documentation. Annexes 3 and 4 list the persons and documentation consulted.

## **2. Project Evaluations**

---

### **2.1 Fiscal Incentives for Biodiversity Conservation in Brazil**

Project Reference No:	6-098
Lead Institution:	WWF-UK
Partner Institutions:	WWF-Brazil International Institute for Environment and Development (IIED)
Grant value:	£67,400
Start / finish date:	July 1997 to June 2000

#### **2.1.1 Project implementation**

The project purpose was to contribute to the implementation of the Biodiversity Convention in Brazil by stimulating the adoption of fiscal incentives for biodiversity conservation. The ICMS Ecologico provides a mechanism for states to reward municipalities for activities and projects benefiting biodiversity conservation, through the redistribution of a proportion of the ICMS tax (VAT equivalent) levied in that state. The objectives were to carry out a comprehensive evaluation of the results from the ICMS Ecologico in four states that had already adopted the mechanism, to provide a broad dissemination of this analysis, and to promote advocacy activities focused on key decision makers and other target audiences. Outputs included a series of reports, publications and discussions.

The project was implemented successfully. The reviews were undertaken (in three states instead of the planned four), the reports were distributed and the advocacy activities (including technical meetings and workshops) were undertaken. Although ICMS Ecologico has still not been adopted by the three new states targeted in the project proposal (Goiás, Pará and Bahia), WWF-Brazil was requested by a number of other states to advise on the implementation of ICMS Ecologico. The states of Pernambuco and Mato Grosso introduced ICMS Ecologico during the project and Mato Grosso do Sul implemented previous legislation.

No serious problems were encountered during implementation. The successful implementation was attributed to the fact that the project was primarily devolved to the Brazilian host institution, and was thus conducted by Brazilians in their own country. WWF-UK contributed by preparing the project submission and reporting to Darwin Initiative and by bringing in the expertise of IIED. The IIED study "Fiscal Incentives for Biodiversity Conservation: The ICMS Ecológico in Brazil" is an excellent analysis of the extent to which the compensation and incentive objectives of ICMS Ecologico have been achieved in two states (Minas Gerais and Rondonia). Conditions are very different in different states so this work needs to be expanded to other states.

One problem mentioned was the large difference in fee rates paid to UK and Brazilian consultants. This caused some resentment with one local consultant and hindered cooperation. With the increase in value of the Brazilian Real, this problem has diminished – by raising Brazilian consultant (and other costs) in Sterling equivalent.

## **2.1.2 Post project sustainability and impact**

The project certainly contributed to raising capacity in the project partner institutions and the beneficiary Brazilian states (although this was not subsequently maintained by WWF-Brazil). Sustainability was intended to be supported by a follow up project (12-015). It is therefore disappointing that WWF-Brazil was not able to complete that project (see below). However some follow up work has been taken on by others. For example, The Nature Conservancy is supporting a study on ICMS Ecologico in the Atlantic Forest states, undertaken by one of the project local consultants.

Since the project, the number of states implementing some form of ICMS Ecologico has increased from five to eleven (out of a total of 24 Brazilian states). Although establishment of effective criteria and monitoring systems and ensuring a fair distribution so as not to penalise poor municipalities remain as problems, ICMS Ecologico has shown its value in encouraging municipal governments to promote conservation and create protected areas. It is likely that the ICMS Ecologico as such will be scrapped under proposals for fiscal reform being put forward by the federal government. However, the results of the project will contribute to informing the debate on that reform and showing the value of some form of fiscal incentive for environmental conservation.

Two lessons derived from the project and relevant to a wider interest are reported: Publications are not sufficient in themselves to effect change; Policy-based projects of this nature cannot be undertaken quickly, and may require more than the standard 3 years for effective implementation. They also demand considerable flexibility of approach.

## **2.2 River dolphin conservation in Brazil**

Project Reference No: 7-035

Lead Institution: Sea Mammal Research Unit, Univ. of St Andrews

Partner Institutions: Brazilian National Institute for Amazonian Research (INPA),  
Mamirauá Sustainable Development Institute (IDSM)

Grant value: £172,500

Start / finish date: December 1998 to December 2001

### **2.2.1 Project implementation**

The Project (known as "Projeto Boto" after the local name of the pink river dolphin, one of the two species studied) was formed in 1993 when Drs Vera da Silva and Tony Martin commenced a long-term study of river dolphins in Brazil, and chose the newly created Mamirauá Reserve for its location. Field activities commenced in January 1994 with the marking of nine botoes (of which seven are still regularly seen). The main fields of study are: population characteristics such as reproductive and mortality rates, density and abundance, growth and development, social behaviour, movements, biochemistry of blood and milk, diet, and relationship with Man, including interactions with fisheries

Darwin Initiative support to the project started in December 1998 and finished in December 2001. The purpose and primary objective of the work was to bring about improved prospects for the conservation of river dolphins in Amazonian flooded forest by improving knowledge of the animal and its ecology, by developing management advice based on high quality applied research, and by assisting the host country to meet its obligations under the Convention on Biodiversity . A second objective was to enhance the capacity of Brazil and other South American states to carry out similar research on small cetaceans and other rainforest animals by training bright young scientists.

The original concept remains valid and, as subsequent events have shown, highly relevant to biodiversity conservation. As charismatic top predators, the river dolphins are good indicators of general ecosystem health. The original proposal included work in Pakistan but, due to security concerns, the Pakistan component was removed with Darwin Secretariat approval before project implementation started and the project focused on river dolphins in Brazil and in particular the Mamirauá Sustainable Development Reserve. The establishment and management of the Mamirauá Reserve were being supported at the time by a major DFID funded project.

The project was well managed and implemented with full participation by the local project leader, the host country institutions and other local partners. Project activities were undertaken and project outputs produced as planned and within budget. A well written final report was presented. The Final Report Review concluded that “The original objectives have clearly been achieved, and the project leader and his local partner have been extremely efficient and productive in the results that they have generated”.

The only problem during implementation mentioned by project participants is the “scientific culture clash” between British and Brazilian scientists. In UK and other countries greater importance is given to publishing results as soon as possible and careers and scientific advancement largely depend on papers published. This is not so in Brazil. This apparently caused some stress in the relationship between the UK and Brazilian partners but was overcome by frequent communication and, in the longer term, the eventual production of publications.

## **2.2.2 Post project sustainability and impact**

The project laid the base for long term research and monitoring of river dolphin populations and behaviour which have made very important contributions to the management and conservation of the Mamirauá Reserve and Amazonian flooded forest in general. The methodologies developed during the project have shown to be of high quality and have been continued to this day. The floating research base has also been maintained. Regular surveys and monitoring have continued and an extremely important database of observations has been built up over thirteen years. Nearly 500 animals have now been captured and marked. This is probably the most complete long term study of any mammal population anywhere in South America and one of the three most important studies of cetaceans in the World. The work is continuing to produce new and important information.

The training and capacity building has also continued. Six short term graduate interns received field training during the Darwin Initiative project. This number has now been increased to 45 (although on shorter internships). One project student has gone on to do a PhD and four are doing masters degrees on related subjects.

The project has gained a high level of recognition both in national and international scientific circles and among a wider public. Thirteen scientific publications have been published and conference presentations given in addition to the one paper published during the Darwin Initiative project. The time taken for scientific articles to be written, submitted, reviewed, edited and published means that there is often a time lag of two to three years between doing the research and publishing an article. The project maintains its own informative website ([www.projetoboto.com](http://www.projetoboto.com)) although this is updated only till 2006 and lacks a Portuguese version.

Both the dolphin project and the Mamirauá Reserve have achieved high profiles. They are recognized as biodiversity conservation flagships nationally and internationally. In addition to the newspaper articles, television programmes and visits (including two by the Brazilian president) achieved during the Darwin Initiative funding, the project has continued to attract wide media attention. The project appears in the media on average about once per month. Various television programmes have been produced and currently there are five requests from television companies including the BBC and National Geographic.

Being able to observe dolphins at close quarters and watch scientists at work is an important attraction for the successful ecotourism enterprise at Mamirauá. The good relationships with local communities have been maintained. One full time field assistant is employed and 14 local fishermen participate in the annual capture and marking. Local people are now more aware of the importance of dolphins and supportive of conservation measures,

The local participating institutions, principally the Mamirauá Sustainable Development Institute (IDSM) and the National Institute for Amazonian Research (INPA), have been strengthened through the publicity and recognition gained by the project and the capacity building. However, in order to maintain an effective and low cost implementation, the project has operated largely outside the formal bureaucracies of these two institutions, depending largely on administration by the local project leader. Being a small project within the much larger institutes, the dolphin project has preferred to maintain a certain independence.

The project has had an impact beyond its small size. Much of this impact came after the end of Darwin Initiative and depended on project partners being able to raise funding to continue the work started under Darwin. The project has had a direct impact on the management of the Mamirauá reserve influencing decisions on zoning and ecotourism practices. Project data is also vital for monitoring of conservation success. For example, the reserve management has been successful in increasing the populations of a large predatory and commercially important fish (the *pirarucu*) and alligators. This may be creating competition with the dolphins which are the other main large aquatic predators, and the project has detected changes in behaviour and range which may reflect this.

The Brazilian project leader is active on various policy committees and regularly advises the relevant government environmental agencies. She sits on the IBAMA (federal environment agency) aquatic mammals committee and fisheries committees and has, for example, contributed to the promulgation of legislation on the molesting of aquatic mammals and on net size (to reduce accidental drowning of dolphins in fishing nets).

The importance of long term data collection and monitoring has been shown. Some conclusions are only now becoming apparent, for example, the observed use of objects in the mating behaviour of pink dolphins. A dramatic example of the value of the project's work has arisen recently and is described in Box 1, below.

**Box 1: Amazonian dolphin populations threatened by illegal killing for fish bait**

Over the last few years, project data has shown a steep decline in total population numbers of pink dolphins (known locally as the “*boto*”) culminating in a 20% mortality last year. This level of mortality is clearly a major threat to conservation of the species, bearing in mind its slow reproduction rate. Following surveys by *Projeto Boto* staff, the mortality has been attributed to the illegal killing of dolphins mainly outside the reserve by a small minority of fishermen to use as bait for the capture of the *piracatinga* catfish. This fish feeds on dead meat and is known as the “vulture of the water”. It is not consumed locally. However, a lucrative market has recently developed from buyers in Colombia with the fishmeat being transported upriver to Colombia and then flown to the major cities. This trade has now reached an alarming scale. The project leaders and colleagues from IDSM and INPA have been very active in exposing this new threat to Amazonian river dolphins - until recently a comparatively healthy population - both nationally and internationally and making representations to the appropriate authorities. The killing of dolphins is already theoretically illegal but this is almost impossible to police in the vast expanse of the Amazon floodplain so the government is considering urgent measures directed specifically at the *piracatinga* fishery. Without the monitoring data from the project, the alarm would have been raised much later.

Projeto Boto has contributed to the success of the whole Mamirauá project. Mamirauá is credited with “moving thinking away from total protection and resettlement to one of integrating people with protected areas and away from pure to more applied or people driven research and the positive poverty impact this has had – not only in Mamirauá but also in Brazil – should certainly not be underestimated”.<sup>1</sup> The conservation success of Mamirauá led to the incorporation of the category of Sustainable Development Reserve in the national conservation area system and the creation of over twenty new reserves.

In spite of the obvious value and impact of the project’s work it has not been easy for the project team to raise secure funding to continue work and, at times, project participants had to use their own funds to keep operations going. The Mamirauá Institute has provided a minimum baseline funding of approx US\$800 per month. In addition, the Mamirauá ecotourism operation has recently started paying US\$10 for each tourist received by the project. Additional funding since the end of the DI support has been provided by the Brazilian National Research Council, the Embassy of the Netherlands in Brazil, the Cetacean Conservation Society and Global Vision International. More substantial funding is currently being sought from Petrobras (the Brazilian state oil company) and Humboldt Sud (a maritime transport company).

The current Darwin Initiative project “Sustainable Management of Ornamental Fish Species” (14-060) led by the Zoological Society of London is also based at the Mamirauá Reserve. However, there appears to be little collaboration with Projeto Boto.

## **2.3 Repatriation of herbarium data for the flora of Bahia, Brazil**

Project Reference No: 7-108

Lead Institution: Royal Botanic Gardens, Kew

Partner Institutions: Herbarium of the State University of Feira de Santana (HUEFS),  
Herbarium of the Cocoa Research Centre (CEPEC),  
Herbarium of the Pernambuco Agricultural Research Institute (IPA)

Grant value: £38, 307

Start / finish date: August 1998 to October 1999

### **2.3.1 Project implementation**

The Brazilian state of Bahia has a rich flora (15–20,000 species), and its conservation is hindered by the lack of accessible information on its plant diversity and plant identification tools. The purpose of this small, one-year project was to develop and refine the methodology for the capture and repatriation of herbarium data held at the Royal Botanic Garden, Kew, for the flora of Bahia, Brazil. Specific objectives were: preparation of a database of all Kew holdings from Bahia of six plant families; preparation of high quality images for all type material included in the database; accurate assessment of the resources required to database the remaining collections for Northeastern Brazil held at Kew; combination of new data with existing data to prepare a total collections distribution map for Bahia. During the implementation of the project, objectives were expanded by the addition of two extra plant families and the extension of the project area to cover seven other states of the region, more than doubling the project area.

---

<sup>1</sup> Koziell, I and C. Inoue (2006) *Mamirauá Sustainable Development Reserve, Brazil: Lessons Learnt in Integrating Conservation with Poverty Reduction*. [www.iied.org/pubs/pdf/full/9168IIED.pdf](http://www.iied.org/pubs/pdf/full/9168IIED.pdf)

The principal input was the funding of a Brazilian botanist (the “Darwin Bahia Research Officer”) to spend one year at Kew receiving training and conducting the bulk of the data selection and quality review. Project outputs were largely achieved with some exceeded and some additional outputs (articles, course and a seminar) recorded. The primary end products were repatriation packs consisting of the database of collections held in Kew, high quality images (cibachromes) of species types and photocopies of protogues (original species type description publication). These were sent to the three local Brazilian institutes, with an additional set made available to plant family specialists residing within Brazil.

The Final Report Review concluded: “The project addresses a common problem encountered by researchers and conservation workers in developing countries - the lack of in-country information on plant collections, type specimens and protogues. Without this it is difficult to conduct research without consulting foreign herbaria. The project is extremely worthy and for its target region has fulfilled all its aims.”

The only implementation difficulties mentioned in project reports were some problems in obtaining a work visa for the Brazilian research officer to stay in UK (eventually overcome by obtaining a student visa) and some minor problems with equipment purchases due to the budget having been prepared more than one year before implementation started.

### **2.3.2 Post project sustainability and impact**

Since the termination of the Darwin Initiative project, project partners have sustained and expanded the herbarium data repatriation. The information packs distributed by the project have been incorporated by the recipient herbaria and are available for consultation by researchers and students. Individual folders are also loaned to other herbaria on request. Following the successful demonstration of the Darwin project a further larger project lasting three years was implemented by Kew and Brazilian partner institutions. RBG Kew obtained funding from British Tobacco for this project. The quality of the images is widely recognized as being high. A similar model was used for this follow up project with four Brazilian researchers spending one year at Kew. This project brought the total number of plant families repatriated to 15, accounting for 70% of the plant species of northeast Brazil, with 3,000 types. However, funding ended in 2004 with repatriation of the whole flora incomplete. The pilot Darwin project is also credited with influencing the Spruce project between the Natural History Museum and Kew and the African and Latin American Plants Initiatives. Unfortunately applications to the Brazilian national research funding council for further repatriation have not been successful. Competition for such funding is severe and priority has been given to Brazil based research.

To some extent the need for this type of repatriation has been superseded with the expansion of online access to herbaria databases. However, in most cases such online information is not subject to the quality review undertaken under the Darwin and follow-on projects and has many errors and inaccuracies. The Brazilian partner botanists considered that repatriation under the project format is still highly justified.

Brazilian botanists involved in the projects greatly appreciated the opportunity to spend time at Kew as this gave them the chance to learn from Kew specialists and visit other herbaria in Europe and to work with the Kew collections. This helped to increase their technical capacity and, together with the repatriated data, strengthened the capacity of Brazilian institutions. Returning trainees have multiplied their training by giving courses to various local institutions.

The main local partner institution (HUEFS) is an active and well used herbarium with a small enthusiastic staff and many students and researchers using its collection. Over 30 doctoral and masters students work at the herbarium along with various university teachers. It now has over 130,000 accessions with 10,000 new accessions added each year. The herbarium also receives visits from local schools and other local interest groups. A new, larger, purpose-built herbarium building has been built and staff hope to occupy it early in 2008.

Links between the Brazilian partner institutions and Kew have been maintained with a number of Kew scientists visiting and seven UEFS post graduate students currently being supervised by Kew scientists. The project supported a larger DFID funded project on the Northeast Plant Information Centre. This made information on plants more widely available to government agencies, NGOs and community groups. The project research officer also subsequently participated in a DFID forest research funded project on biodiversity field guides for local communities.

Brazilian participants are certain that the project did contribute to strengthening the capacity of local herbaria and academic and research institutions and improving the quantity and quality of botanical research outputs, although it is difficult to attribute this impact specifically to the project. The project clearly contributed to improving the quality of botanical biodiversity information in Northeastern Brazil. The work on the Flora of Bahia has led to identification of endemic species and those threatened with extinction and some species thought to be extinct have been rediscovered. Areas of high species diversity and endemism have been identified. Such information is vital for conservation planning and management. However actual impacts in terms of the creation of new protected areas or more sustainable management are not yet apparent. Project staff do advise the State Environment Secretariat and IBAMA (the federal environment agency) and the creation one private reserve was mentioned as being influenced by herbarium botanists. But there does remain the problem of translating improved botanical information into effective conservation. This is probably a general worldwide problem.

## **2.4 Fisheries management for biodiversity conservation in the Brazilian Amazon**

Project Reference No: 8-126

Lead Institution: Imperial College, London

Partner Institution: Amazon Environmental Research Institute (IPAM)

Grant value: £121,347

Start / finish date: April 1999 to June 2002 (including agreed 3 month extension)

### **2.4.1 Project implementation**

Fish stocks in the Amazon floodplain are a key resource in terms of the biodiversity they represent (being the most diverse assemblage of river fish species in the world) and in their capacity as an economic resource for subsistence-based and commercial fisheries. The purpose of this project was to evaluate fisheries management approaches to the conservation of floodplain (*varzea*) habitats and their associated biodiversity. The specific objectives were to: analyse the economic strategies of different types of commercial fishers; analyse the response of commercial fishers to alternative management practices; analyse the impact of the fisheries sector on the Amazonian regional economy; develop a bio-economic model to predict commercial fishers' responses to alternative management regimes. During the course of the project, the objectives were expanded to include analyses of subsistence-oriented fishing.

The project was well implemented. The expansion to include subsistence fisheries meant that more field work was required and a three month extension was agreed. All originally planned outputs were produced together with some additional outputs. A well written final report was presented and the final report review concluded that quality of all the outputs was high.

Implementation of the project depended on counterpart funding from other organizations.

Essentially the Darwin Initiative covered UK costs while Brazilian field costs were funded by the ProVarzea project of the Brazilian Environment Ministry and WWF/ DFID joint funding scheme.

One potential problem for project implementation was the high level of overheads normally charged by Imperial College which threatened to consume much of the budget. This was overcome by Imperial College agreeing to reduce its normal overhead rate, on the basis that much of the work was being conducted in Brazil and therefore, off-campus.

The project produced several important results, including rigorous quantitative assessments which showed, among other conclusions, that the economic importance of Amazon fisheries was far greater than previously realized and that community managed lake reserves resulted in significant increases in fisheries productivity for the benefit of local communities. Together with the bio-economic model developed by the project, the economic analyses provided evidence that co-management initiatives can safeguard the future of the fishery in the face of a probable market expansion due to infrastructure development in Amazonia. In retrospect, project staff considered that they could have done more to promote the visibility of their work.

#### **2.4.2 Post project sustainability and impact**

The capacity of the Brazilian host institution, IPAM to undertake such economic and interdisciplinary analyses was strengthened, principally through the secondment of the Darwin fellow (Oriana Almeida) to Imperial College and field visits by IC staff. Ms Almeida went on to obtain her PhD based on project work and returned to become a consultant to the Ministry of Environment ProVarzea project and for two years held the post of executive director of IPAM. The link with Imperial College has been maintained. For example, a student from Imperial College recently spent several months undertaking field work with IPAM as part of her masters degree.

Since the termination of the project, IPAM has continued to work on the analysis and management of floodplain fisheries. Further funding was received from WWF/DFID. The ProVarzea project provided funding to create a centre for artisanal fishermen in the lower Amazon. Additional studies have been undertaken and scientific articles published. Bio-economic and fluvial models have been further developed. A book on Fisheries Management in the Brazilian Amazon, largely based on analyses carried out by Oriana Almeida, was published in 2006.

Project staff have exchanged management experiences with floodplain fisheries managers in the Mekong region, particularly in Cambodia. Methodologies developed by the project have been used and adapted by others for similar work in other regions. Data from the project work, together with similar data from the Mekong region, has also been used to establish general models for the relationship between fishing effort and catch in multi-species fisheries, which are now being used in many management settings.

Probably the biggest impact has occurred in community management. Although no specific policy output can be directly attributed to the project, the project made significant contributions to changes in relevant legislation and practices. The practice of co-management of floodplain lakes by local communities has expanded greatly throughout the Brazilian varzea and has led to increases in productivity of up to 60%. Community understanding of the link between biodiversity and productivity has increased.

Changes in commercial fisheries policy have not been so rapid. Project studies showed that the overall production by commercial fisheries has been remarkably stable for the past decade. Although the species balance has changed due to the over-fishing of some large commercially attractive species. The opening of new roads into Amazonia brings the threat of increasing market demand from the more developed southern regions of Brazil. The work done on the project and subsequently is providing a scientific basis for policy discussion and development. The state of Pará, where IPAM is based, recently created a Fisheries Secretariat and IPAM is actively involved in providing advice. Dr Almeida is coordinating a Secretariat research working group

The project's approach to biodiversity conservation was different than most Darwin Initiative projects. It was not concerned with research or developing measures intended to protect endangered biodiversity directly (and was apparently nearly rejected by the selection committee for this reason). Instead it took the approach of achieving biodiversity conservation through the sustainable management of natural resources, involving and benefiting local communities. This approach is highly relevant for the achievement of sustained biodiversity conservation in Brazil.

## **2.5 Enhancing biodiversity conservation in Brazil through the use of an economic incentive**

Project Reference No:	12-015
Lead Institution:	WWF-UK
Partner Institutions:	WWF-Brazil International Institute for Environment and Development (IIED)
Grant value:	£160,000
Start / finish date:	April 2003 – March 2006 (Terminated May 2005)

### **2.5.1 Project implementation**

The original purpose of this project was to assist Brazil meet its obligations under the Biodiversity Convention through the effective implementation of an economic instrument (the ICMS Ecologico) which acts as an incentive for biodiversity conservation. The project was designed to build on a previous Darwin Initiative supported project, Fiscal Incentives for Biodiversity Conservation in Brazil (DI 6-098, see above). The project concept is summarized in the first annual report review as follows: "The ICMS is an indirect tax charged on consumption of goods and services [at state level]. In some States a proportion of the revenue from the tax is redistributed [among municipalities] according to environmental criteria with the aim of encouraging the maintenance and establishment of nature reserves. This Darwin project aims to design, test and evaluate a monitoring system for the ICMS Ecologico in two pilot States in Brazil. Based on this work WWF-Brazil will lobby other States that are already implementing the ICMS Ecologico to introduce similar types of monitoring systems." The planned outputs were: monitoring systems for ICMS in two States; four workshops in two States; two data bases with indicators (one per state); presentation of preliminary results at the World Parks Congress; one national and two local press releases; one newsletter to inform decision makers on progress in adoption of ICMS in Brazilian states.

The project started in April 2003 and was due to run till March 2006. It started about three months late and some of the first year activities were undertaken. Problems and delays were experienced in negotiations with one of the states (Pernambuco) and due to staff changes at the main implementing partner, WWF-Brazil. At that stage the annual report reviewer considered that the project was "broadly on track". However, the project continued to experience problems in the two states where the monitoring system was intended to be trialled and due to the fiscal reform process started by the federal government and which proposed the replacement of the ICMS tax by a single value added tax by 2007. In April 2005, WWF proposed a reformulation of the project which reduced the work on a monitoring system to one state (Mato Grosso) and to a selection of municipalities within that state, and added outputs on a study on lessons learned for the implementation of ICMS Ecologico in several states and the implications for the fiscal reform process, and dissemination and lobby based on that study.

A new logical framework and work plan was submitted. This revised proposal was accepted by the Darwin Secretariat but in May 2005, WWF-Brazil decided to terminate the project. The principal reason given for this (in a report submitted in March 2006) was the emergence of two separate political corruption scandals in Mato Grosso state and in the National Congress. These scandals compromised both the state monitoring work and the proposed lobbying activities as the fiscal reform came to a standstill. Other reasons given for terminating the project were the difficulty in isolating the impact of ICMS Ecologico, lack of understanding of the operation of ICMS Ecologico in the states, and continued staff turnover at WWF-Brazil. These reasons were not fully accepted by the final report reviewer who concluded that: "the project team seem to be have been overwhelmed by the challenges faced and were not able to meet the aims of the project, nor deliver any outputs. This is an unsatisfactory outcome".

Although the political situation was difficult at the time, the objective to study the lessons learned form the implementation of ICMS Ecologico as a contribution to the fiscal reform remains very valid. The fiscal reform process has proceeded much slower than foreseen. ICMS Ecologico still exists and has been adopted by more states. It is now being implemented by 11 of the 24 Brazilian states. It is likely that ICMS will be replaced by another form of taxation but it is also likely that this will include some form of incentives for environmental conservation (proposals exist for new state and municipal "participation funds") so it is important that lessons learned from ICMS Ecologico can feed into this process. An expansion of the excellent study undertaken by IIED in the previous project to all the states would be very worthwhile. Some work in this direction is now being undertaken by others

The main reason for the abandonment of the project appears to be institutional changes within WWF-Brazil and the wider WWF system. A new focus on practical conservation and sustainable development, principally in Amazonia, coupled with continuing high staff turnover meant that the institutional interest in continuing the project and facing the challenges mentioned above did not exist any more. Many institutions (both governmental and non governmental) change their strategies and priorities and this is healthy if change is not rushed through too fast, but it is disappointing that WWF was not able to see through a commitment. Energy and funding were wasted.

## **2.5.2 Post project sustainability and impact**

As the project was terminated and did not deliver its outputs, it has not produced the intended institutional strengthening and impacts. WWF-Brazil has lost its interest and capacity in fiscal incentives. IIED and some of the state level participants have maintained their capacity acquired during project 6-098 and this is available to new initiatives.

### **3. Conclusions and Recommendations**

---

Four of the five projects were well implemented, achieved their objectives and have had lasting long term impacts. They have made important contributions to helping Brazil implement the Biodiversity Convention.

The four successful projects have all represented excellent value for money and produced results in excess of the value of the investment by Darwin Initiative.

Successful implementation of the projects and the continuation of their activities and impacts depended largely on the commitment of the individuals who proposed and implemented them. The existence of a committed project team is probably more important than institutional commitment.

The successful projects worked with rather than through local institutions. Although local institutions were strengthened, the projects were not entirely “assumed” by local institutions.

One project (12-015) failed due to a change of institutional strategy of the host institution (WWF-Brazil), a high turnover of local project staff and an inability of the host agency to adapt to changing political circumstances. However, the need for a project of this nature remains and has not yet been filled by other initiatives.

All the projects suffered from the lack of long term funding for biodiversity research and conservation. The most important impacts are long term and come after the end of Darwin Initiative funding of the projects. If it was not for the dedication and effort of project partners, none of the projects would have been able to continue and projects would not have achieved the significant long term impacts that they have.

Four of the five projects were concerned with the socio-economic aspects of biodiversity conservation. Two projects were involved with participatory community management of natural resources for the benefits of local livelihoods and two with the development of fiscal incentives. Such approaches are highly relevant for the achievement of sustained biodiversity conservation. In countries like Brazil, conservation will not be achieved by the creation of strictly protected areas alone.

The varied and isolated nature of the projects (river dolphins in the Amazon, through repatriation of herbarium data for plants of the dry north east, to state level tax incentives) meant that there was no interaction between them and no consolidated impact. In a huge diverse country like Brazil, the small, scattered inputs from Darwin Initiative although individually highly effective, are small scale compared to the immense overall biodiversity conservation problems in Brazil.

In relation to the scale of its biodiversity, Brazil is under-represented in terms of number of Darwin Initiative projects funded. Only 15 projects have been implemented in Brazil out of a total of 472 funded by the Darwin Initiative. This is probably partially due to the restricted number of UK organizations which have experience and interest in working in Brazil. Although the Darwin Initiative is known to a few key people (such as the CBD focal point in the Ministry of Environment) it is not widely known within Brazil. In countries like Brazil, it may be better to focus on a few key biodiversity issues, biomes (e.g. the Amazon floodplain where two successful projects have already been implemented) or key committed people. However, this approach would probably require the relaxing of application restrictions to allow Brazilian organizations to make direct applications to Darwin Initiative, or alternatively facilitating Brazilian organisations to find and develop proposals with UK institutions.

Three of the five projects included in this evaluation were closely linked with and provided added value to major DFID projects under the DFID environment cooperation programme with Brazil. Since DFID's short-sighted decision to end this programme, these links has ceased. The FCO Global Opportunities Fund operated by the British Embassy has since provided some funding for environmental conservation projects in Brazil but these have no links with the five projects of this evaluation or any of the other DI projects in Brazil. The British Embassy in Brasília has provided comments on Brazilian Darwin Initiative project applications but, otherwise, is not well informed on the implementation of projects. FCO is apparently phasing out the sustainable development component of the Global Opportunities Fund. However Brazil is one of the focal countries of the DEFRA led Sustainable Development Dialogues. There is clearly a need to improve the coordination of UK government support to environmental research and conservation in Brazil. With so little funding compared to scale of the environmental problems in Brazil, it makes sense for UK support to conservation to be coordinated and focused on common goals.

In order to improve awareness and understanding in Brazil of UK government support to research and conservation projects, it would be worthwhile producing a short joint Darwin Initiative, FCO, DFID and possibly British Council publication of success stories of British assistance to environmental conservation in Brazil over the past 15 years or so.

All five projects were involved in generating new and improved information necessary for biodiversity conservation. Some projects have been more successful than others in feeding that information into decision making processes. But there still remains a major problem of how to transform improved biodiversity information into effective conservation. Project teams often do not have the required communication and influencing skills.

In the opinion of the reviewer, the value of evaluations of closed projects has been demonstrated by this review. As shown by the projects included in this evaluation, most projects generate impacts long after the termination of Darwin Initiative funding – indeed biodiversity conservation is a long term process and many of the most important impacts and lessons only become apparent some time later. It is only by going back and looking at what happened after projects closed that the real impacts and lesson can be gauged. Further evaluations of this type, both geographic and thematic should be undertaken to guide Darwin Initiative's strategic decisions. In order to do this, Darwin Initiative needs to maintain good files of project records.

## **4. Innovations, lessons learned and best practice**

---

Most biodiversity conservation initiatives, particularly those involving changes in policy and management require a long term to reach fruition – much longer than the maximum three years of Darwin Initiative support. Lack of long term funding for biodiversity conservation is a serious constraint.

Successful implementation of the projects and the continuation of their activities and impacts depended largely on the commitment and dedication of the individuals who proposed and implemented them.

However, a stable institutional commitment is required to take forward policy influencing and change objectives.

Much basic information required for conservation management is still lacking in Brazil. The transformation of improved biodiversity information into effective conservation is still a major problem. Publications alone are not sufficient and use of different media and communication skills are required.

Successful biodiversity conservation in Brazil requires the consideration of socio-economic issues and the promotion of sustainable management of natural resources, involving and benefiting local communities.

Although most of the individual projects have achieved significant outcomes, the overall impact of the Darwin Initiative in Brazil is small compared to the scale of the problems. In large biodiversity rich countries such as Brazil greater impact could be achieved by focusing Darwin Initiative support of particular biomes, themes or key individuals and the opening of applications to Brazilian organizations.

Better coordination between British government agencies supporting environmental projects in Brazil and better dissemination of their programmes would improve the effectiveness of Britain's contribution to biodiversity conservation, and the Darwin Initiative might have a role to play here.

The value of evaluations of closed projects has been demonstrated by this review. It is important to maintain good records of project documentation.

## **5. Advice on communications**

---

Send copies of the ECP report to FCO and DFID Brazil desk officers, British Embassy, DFID and British Council offices in Brazil

Distribute the ECP completion summary more widely in FCO, DFID and DEFRA with the aim of improving coordination of activities in Brazil.

Encourage projects to produce dissemination material / leaflet and website material in Portuguese on the Darwin Initiative for dissemination in Brazil. .

Produce a short joint publication of success stories of British assistance to environmental conservation in Brazil over the past 15 years or so.

Give exposure in Darwin Initiative website, newsletter and press releases to the current severe threat to pink river dolphin population in the Amazon floodplain due to the illegal killing for use as fish bait (see text box in paragraph 3.2.2, above).

# Annex 1 Terms Reference – Brazil Evaluation of Closed Projects

---

## 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 provide information 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 innovations, 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. Comments shall include how later projects have built on earlier projects or been mutually supportive of each other.

## **Background of Projects to be evaluated**

Brazil has been the focus of several Darwin projects. These completed projects present an opportunity to evaluate the long-term impact and legacy of Darwin projects in Brazil.

<b>Project No.</b>	<b>Title</b>	<b>Purpose</b>
6-098	Fiscal Incentives for Biodiversity Conservation in Brazil	To contribute to the implementation of the Biodiversity Convention in Brazil by stimulating the adoption of fiscal incentives for biodiversity conservation.
7-035	River dolphin conservation in Brazil and Pakistan	To determine the impact on dolphins of various aquatic management regimes within the Mamirauá Sustainable Development Reserve.
7-108	Repatriation of herbarium data for the flora of Bahia, Brazil	To develop and refine the methodology for data capture and repatriation of data.
8-126	Fisheries management for biodiversity conservation in the Brazilian Amazon	To evaluate fisheries management approaches to the conservation of floodplain ( <i>varzea</i> ) habitats and their associated biodiversity.
12-015	Enhancing biodiversity conservation in Brazil through the use of an economic incentive	To assist Brazil to meet its obligation under the Biodiversity Convention (article 11/CBD) through the effective implementation of an economic instrument (the ICMS Ecologico) which acts as an incentive for biodiversity conservation.

## **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 (i.e. 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.

***Innovations, lessons learned and best practice:***

- Report on any innovations developed by the project.
- What lessons do the project implementers report.
- Is the project implementing best practices, has it any indicators that it will do so?

## Methodology

The ECP shall be undertaken in close collaboration with Darwin Project Leaders and host country institutions, and engage with project stakeholders and beneficiaries. Wherever possible, ECP consultants should consult 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 Brazil shall be undertaken according to the following schedule:

- Scoping, preparation and review of documentation – 1.5 day (including the work already carried out)
- Field mission - 5.5 days
- Report preparation – 3 day

## 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 Project Leaders and the Darwin Programme Director. Thereafter, the Project 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 and will submit the report, and the Completion Summary, to the Darwin Programme Director, who will forward it to the PLs and Defra.

Please note that all reporting to the Darwin Programme Director should be sent to [Darwin-Projects@ectf-ed.org.uk](mailto:Darwin-Projects@ectf-ed.org.uk)

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 covering the key purpose and issues arising from the MTR; an outline of the main analytical points and the main conclusions, lessons learned, best practice and recommendations. It should be no more than two pages.
- *Main Text:* Should start with an introduction describing the projects being reviewed, collective context and the evaluation objectives. The body of the report should follow with a project by project description the review criteria described in the methodology describing the facts and interpreting them in accordance with key questions for the review.
- *Conclusions and Recommendations* according to partnerships, relevance, efficiency, effectiveness, impact and sustainability criteria.
- *Innovations, lessons learned and best practice* of the projects individually and collectively as well as the Darwin Initiative programme.
- *Advice on communications:* the ECP Consultant's views on how key messages about the project should be communicated and to which audience (eg press release in the UK or briefing to local FCO staff)

- Annexes should include:
  - the TORs for the ECP
  - the Logical Framework of the project indicating original intended purpose and outputs, actual achievements by the end of the project, and outcomes at the time of the ECP
  - A map of the project areas if relevant
  - A list of persons/organisation consulted
  - Documentation consulted (i.e. bibliography)
  - Other relevant annexes as appropriate.

The *Completion Summary* should be a one page checklist of key issues from the ECP, pulling together the recommendations, lessons learned, best practice and the advice on communications. A template will be provided by the Darwin Programme Director.

## Annex 2 Summary tables of project achievements and outcomes

### 6-098 Fiscal Incentives for Biodiversity Conservation in Brazil

Original Objectives	Achievements by end project	Outcomes by time of ECP
<p><b>Purpose</b> To contribute to the implementation of the Biodiversity Convention in Brazil by stimulating the adoption of fiscal incentives for biodiversity conservation.</p>	<p>Three state governments “ready to adopt ICMS Ecologico”. Capacity raised in the project partner institutions and the beneficiary states.</p>	<p>ICMS Ecologico has still not been adopted by the three target states. Other states have adopted ICMS Ecologico with the number of states implementing some form of the tax increased from five to eleven.</p>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. Comprehensive evaluation of the results from the ICMS Ecologico in four States that had already adopted the mechanism.</li> <li>2. Broad dissemination of this analysis.</li> <li>3. Advocacy activities focused on key decision makers and other target audiences.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review undertaken in three (instead of planned four) states.</li> <li>2. Two publications distributed in all municipalities of three target states and all 24 Brazilian states.</li> <li>3. Seven technical meetings held in four states; nine workshops to define criteria.</li> </ol>	<p>Review results and publications not widely available. Need to expand reviews to other states. Follow up activities planned under project 12-015 not accomplished. Some follow up work has been undertaken by others</p>

### 7-035 River dolphin conservation in Brazil

Original Objectives	Achievements by end project	Outcomes by time of ECP
<p><b>Purpose</b></p> <p>To determine the impact on dolphins of various aquatic management regimes within the Mamirauá Sustainable Development Reserve.</p> <p>To enhance the capacity of Brazil and other South American states to undertake similar research</p>	<p>The project laid the base for long term research and monitoring of river dolphin populations and behaviour which have made important contributions to the management and conservation of the Mamirauá Reserve and Amazonian flooded forest in general.</p>	<p>Important contribution to the conservation success of the whole Mamirauá project.</p> <p>The project has gained a high level of recognition both in national and international scientific circles and among a wider public.</p> <p>The work has shown the importance of long term monitoring and is continuing to produce new and important information.</p> <p>The training and capacity building has continued.</p>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. Improved knowledge of the animal and its ecology</li> <li>2. Management advice based on high quality applied research,</li> <li>3. Bright young scientists trained to carry out similar research on small cetaceans and other rainforest animals</li> </ol>	<p>All outputs achieved as planned.</p>	<p>Regular surveys and monitoring continued and important database of observations built up over thirteen years.</p> <p>The floating research base maintained.</p> <p>Thirteen scientific publications.</p> <p>The Brazilian project leader regularly advises relevant government environmental agencies.</p> <p>45 short term graduate interns trained.</p>

### 7-108 Repatriation of herbarium data for the flora of Bahia, Brazil

Original Objectives	Achievements by end project	Outcomes by time of ECP
<p><b>Purpose</b> To develop and refine the methodology for data capture and repatriation of data.</p>	Purpose achieved	<p>A similar model was used for a follow up project. This brought the total number of plant families repatriated to 15, with 3,000 types.</p> <p>The project clearly contributed to improving botanical biodiversity information in Northeastern Brazil.</p>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. Database of all Kew holdings from Bahia of six plant families.</li> <li>2. High quality images for all type material included in the database.</li> <li>3. Accurate assessment of the resources required to database the remaining collections for Northeastern Brazil held at Kew</li> <li>4. Combination of new data with existing data to prepare a total collections distribution map for Bahia.</li> </ol>	<ol style="list-style-type: none"> <li>1. Database completed for eight plant families for eight states of Northeastern Brazil.</li> <li>2. Images produced and distributed in information packs to 3 herbaria and family specialists.</li> <li>3. Resources assessment completed.</li> <li>4. Collection coverage map produced.</li> </ol> <p>Additional outputs included: training of Brazilian Darwin fellow in herbarium techniques, various publications and presentations</p>	<p>Information packs distributed by the project have been incorporated by the recipient herbaria and are available for consultation by researchers and students.</p> <p>Returning trainees have multiplied their training by giving courses to various local institutions.</p> <p>Links between the Brazilian partner institutions and Kew have been maintained.</p>

## 8-126 Fisheries management for biodiversity conservation in the Brazilian Amazon

Original Objectives	Achievements by end project	Outcomes by time of ECP
<p><b>Purpose</b></p> <p>To evaluate fisheries management approaches to the conservation of floodplain (<i>varzea</i>) habitats and their associated biodiversity.</p>	<p>Quantitative assessments showed that the economic importance of Amazon fisheries was far greater than previously realized and that community managed lake reserves resulted in significant increases in fisheries productivity for the benefit of local communities. The economic analyses provided evidence that co-management initiatives can safeguard the future of the fishery.</p>	<p>Significant contributions to changes in relevant legislation and practices related to community fishery management.</p> <p>Community understanding of the link between biodiversity and productivity has increased.</p> <p>Work done on the project and subsequently is providing a scientific basis for policy discussion and development.</p>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. Analysis of the economic strategies of different types of commercial fishers.</li> <li>2. Analysis of the response of commercial fishers to alternative management practices.</li> <li>3. Analysis of the impact of the fisheries sector on the Amazonian regional economy.</li> <li>4. Socio-economic model to predict commercial fishers' responses to alternative management regimes.</li> </ol>	<p>Objectives expanded to include analyses of subsistence-oriented fishing.</p> <p>All outputs achieved.</p>	<p>IPAM has continued to work on the analysis and management of floodplain fisheries. Centre for artisanal fishermen in the lower Amazon created.</p> <p>Additional studies undertaken and scientific articles published. Bio-economic and fluvial models have been further developed.</p> <p>Book on Fisheries Management in the Brazilian Amazon published.</p> <p>Methodologies developed by the project have been used and adapted by others for similar work in other regions.</p>

**12-015 Enhancing biodiversity conservation in Brazil through the use of an economic incentive**

Original Objectives	Achievements by end project	Outcomes by time of ECP
<p><b>Purpose</b></p> <p>To assist Brazil to meets its obligation under the Biodiversity Convention (article 11/CBD) through the effective implementation of an economic instrument (the ICMS Ecologico) which acts as an incentive for biodiversity conservation.</p>	<p>Purpose not achieved due changed political circumstances, a change of institutional strategy of the host institution (WWF-Brazil), a high turnover of local project staff and an inability of the host agency to adapt. Although a proposal to revise project outputs was accepted by DI, WWF-Brazil did not proceed with this and the project was terminated early.</p>	<p>The need for a project of this nature remains and has not yet been filled by other initiatives.</p>
<p><b>Outputs</b></p> <ol style="list-style-type: none"> <li>1. Monitoring systems for ICMS in two States.</li> <li>2. Four workshops in two States</li> <li>3. Two data bases with indicators (one per state)</li> <li>4. Presentation of preliminary results as the World Park Congress</li> <li>5. One national and two local press releases</li> <li>6. One newsletter to inform decision makers on progress in adoption of ICMS in Brazilian states.</li> </ol>	<ol style="list-style-type: none"> <li>1. Not achieved.</li> <li>2. Two workshops held.</li> <li>3. One data base designed.</li> <li>4. Presentation given.</li> <li>5. Not achieved.</li> <li>6. Not achieved.</li> </ol>	

## **Annex 3 Persons consulted**

---

### **6-098 Fiscal Incentives for Biodiversity Conservation in Brazil**

Sandra Charity, Project Leader, WWK-UK (by email)

Analuce Freitas, Brazil Project Leader, formerly WWF-Brazil

Nurit Bensusan, formerly WWF-Brazil

### **7-035 River dolphin conservation in Brazil**

Anthony Martin, Project Leader, Sea Mammal Research Unit, Univ. of St Andrews (by email)

Vera da Silva, Brazil Project Leader, Brazilian National Institute for Amazonian Research (INPA)

### **7-108 Repatriation of herbarium data for the flora of Bahia, Brazil**

Daniela Zappi, Project Leader, Royal Botanic Garden, Kew (by email)

Teonildes Nunes, Darwin Fellow, Herbarium of the State University of Feira de Santana (HUEFS)

Elaine Miranda, Herbarium of the State University of Feira de Santana (HUEFS)

Cecília Azevedo, Herbarium of the State University of Feira de Santana (HUEFS)

### **8-126 Fisheries management for biodiversity conservation in the Brazilian Amazon**

Kai Lorenzen, Project Leader, Imperial College, London (by email)

David McGrath, Brazil Project Leader, Amazon Environmental Research Institute (IPAM)

Oriana Almeida, Darwin Fellow, Amazon Environmental Research Institute (IPAM)

### **12-015 Enhancing biodiversity conservation in Brazil through the use of an economic incentive**

Sandra Charity, Project Leader, WWK-UK (by email)

Analuce Freitas, formerly WWF-Brazil

Nurit Bensusan, formerly WWF-Brazil

### **British Embassy, Brasília**

Luiz Andrade, Projects Manager

## Annex 4 Documentation consulted

---

### 6-098 Fiscal Incentives for Biodiversity Conservation in Brazil

Annual Monitoring Reports

Final Completion Report

Completion Report Review

"Results and lessons learned of the Ecological ICMS project in Brazil". Internal WWF memo.

Greig-Gran, Maryanne, (2000). *Fiscal Incentives for Biodiversity Conservation: The ICMS Ecológico in Brazil*. International Institute for Environment and Development, Discussion Paper 00-01.

### 7-035 River dolphin conservation in Brazil

Second Annual Report and Report Review.

Final Report

Final Report Review

Website: [www.projetoboto.com](http://www.projetoboto.com)

Koziell, I and C. Inoue (2006) *Mamirauá Sustainable Development Reserve, Brazil: Lessons Learnt in Integrating Conservation with Poverty Reduction*.

[www.iied.org/pubs/pdf/full/9168IIED.pdf](http://www.iied.org/pubs/pdf/full/9168IIED.pdf)

### 7-108 Repatriation of herbarium data for the flora of Bahia, Brazil

Grant Application

Final Report

Final Report Review

Kew Scientist. Issue 16, October 1999

### 8-126 Fisheries management for biodiversity conservation in the Brazilian Amazon

Grant Application

Annual Reports and Report Reviews

Final Report

Final Report Review

WWF-Brasil, IPAM (2006) *Desenvolvimento de Sistemas de Manejo Comunitário para a Várzea Amazônica: Lições que estamos aprendendo*.

Oriana Trindade de Almeida (org.) (2006). *Manejo de pesca na Amazônia brasileira*.

Kai Lorenzen, Oriana Almeida, Robert Arthur, Caroline Garaway, and Sophie Nguyen Khoa. (2006) *Aggregated yield and fishing effort in multispecies fisheries: an empirical analysis*. Can. J. Fish. Aquat. Sci. 63: 1334-1343

**12-015 Enhancing biodiversity conservation in Brazil through the use of an economic incentive**

Grant Application

First Annual Report and Review

WWF-UK (2005) Suggestions for the Reorientation of the Project

Darwin Initiative correspondence on proposed reorientation

Final Report

Final Report Review