Darwin Initiative – Final Report –

*(To be completed with reference to the Reporting Guidance Notes for Project Leaders (http://darwin.defra.gov.uk/resources/reporting/) - it is expected that this report will be a **maximum** of 20 pages in length, excluding annexes)*

Darwin project information

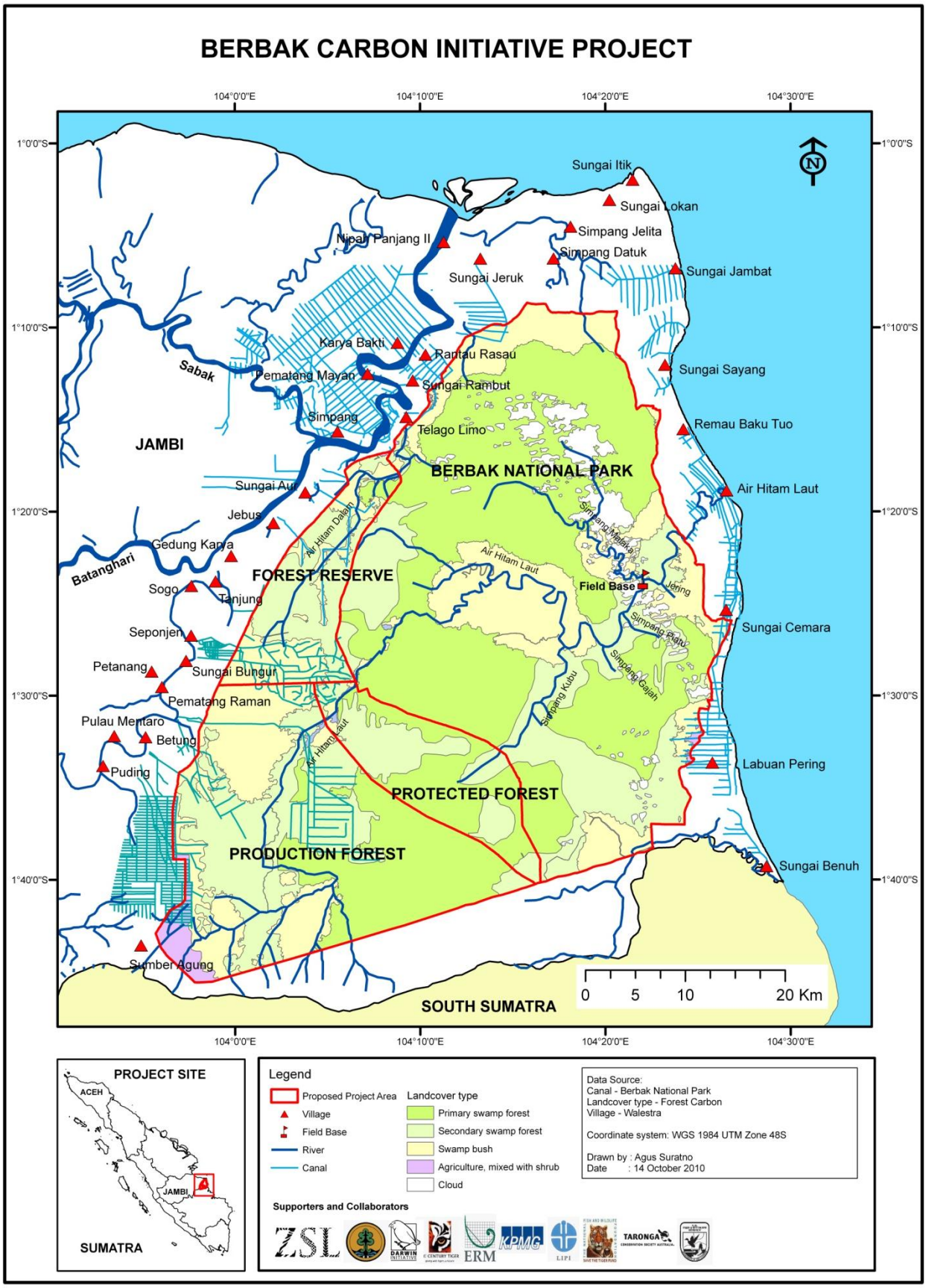
Project Reference	17-029
Project Title	Berbak to the Future: Harnessing Carbon to Conserve Biodiversity
Host country(ies)	Indonesia
UK Contract Holder Institution	Zoological Society of London (ZSL)
UK Partner Institution(s)	Environmental Resource Management (ERM)
Host Country Partner Institution(s)	**Director General of Forest Protection**, Minister of Forestry, (PHKA); **Indonesian Institute of Sciences** (Lembaga Ilmu Pengetahuan Indonesia (LIPI)); **Berbak National Park Agency** (Balai Taman Nasional Berbak); **Jambi REDD+ Provincial Commission** (Komisi Daerah REDD+ Propinsi Jambi), **Directorate of Ecosystem Services within Conservation Areas and Protection Forest**(PJLKKHL), **Jambi Nature and Resources Conservation Agency** (Balai Konservasi Sumber Daya Alam (BKSDA) – Propinsi Jambi); **Jambi Provincial Forestry Services** (Dinas Kehutanan Propinsi (DKP) Jambi); Local NGOs: **Walestra, Gita Buana** and **Pinse**.
Darwin Grant Value	£XXX
Start/End dates of Project	1 April 2009 – 31 March 2012
Project Leader Name	Laura D'Arcy
Project Website	http://www.zsl.org/conservation/regions/asia/indonesia Dedicated website due to go live December 2012.
Report Author(s) and date	Laura D'Arcy / Erwin Adriawan Perbatakusuma / Sarah Christie June 2012

1. Project Background

Berbak National Park (BNP) provides vital ecosystem services and habitat for endangered wildlife species such as the Sumatran tiger, but is threatened by unsustainable use of forest and wildlife resources (Fig. 1). The Berbak Carbon Initiative (BCI) aims to conserve this highly threatened, 240,000 hectares ecosystem by creating financial incentives in emerging carbon markets to reduce deforestation. The BCI project has achieved national recognition[1] due to improved protection of BNP, and the establishment of a knowledge baseline for biodiversity, carbon, and community needs; key steps to enable a future reduction in carbon emissions from avoided deforestation and degradation (REDD+).

[1]This recognition was assured by Indonesian REDD+ related regulations: P-08/Menhut-II/2010 (Strategic Plan of Minister of Forestry (2010-2014)); Ministry of Forestry Regulation No. P.20/Menhut-II/2012 (Implementation of Forest Carbon); Presidential Instruction No.10 (Postponement of primary of peat forest conversion); Presidential Reg. No. 61 /201 (National Reduction of Green house gas emissions.

Figure 1: Map of the Berbak Carbon Initiative (BCI) area of interest (AOI) area and constituent forest blocks.



2. Project support to the Convention on Biological Diversity (CBD)

The BCI project's aims and activities are directly in line with the CBD Strategic Action Plan (SAP) vision and mission, and provide a framework to help achieve the associated Aichi targets. BCI specifically contributes to CBD objectives through helping to conserve biodiversity by establishing a fair and equitable distribution and use of the benefits arising from carbon credits. Though some of the BCI's activities are still in progress, the project has achieved significant successes in improving habitat protection, and establishing a substantial ecological/socio-economic knowledge base (Annex 3).

These project outputs specifically support six CBD articles: General Measures for Conservation and Sustainable Use (6), Identification and Monitoring (7), In-situ Conservation (8), Sustainable Use of Components of Biological Biodiversity (10), Research and Training (12), and Incentive Measures (Annex 3). The BCI project has also identified and explored potential REDD activities to reduce pressure on tropical forests, and has set out indicators and mechanisms to assess the impacts of future REDD+-related activities.

Furthermore, the BCI outputs have contributed to supporting the Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020 (Table 1). The BCI outputs also are contributing to (1) the work plan between the Convention on Migratory Species (CMS), AEWA, and the Ramsar Convention signed in April 2004 as part of Ramsar and the CMS's African-Eurasian Migratory Water Bird Agreement (AEWA), (2) the Wildlife Conflict and Crime Response Team's (WCCRT) policing of illegal poaching and wildlife trade, and (3) the implementation of Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES) in Indonesia. The completion of the biological, carbon, and social-economic surveys will also help BCI to attain the Climate, Community and Biodiversity Alliance (CCBA) Gold Standard for Biodiversity Assessments.

Notably, the BCI biodiversity assessment has confirmed the presence of 22 species of migratory wader species, many of which are listed in Appendices I and II of the CMS; including Chinese egret (*Egretta eulophotes)*, Far Eastern curlew (*Numenius madagascariensis*), Nordmann's Greenshank (*Tringa guttifer)*, lesser crested tern (*Sterna bengalensis)*, swift tern (*Sterna bergii*) and the Caspian tern *(Hydropogne caspia).* BCI also supports the WCCRT's policing of illegal poaching and wildlife trade, and the implementation of CITES in Indonesia.

Furthermore, the BCI built substantial capacity in government and local stakeholders to improve biodiversity, carbon, and socio-economic monitoring, as well as increasing the protection and general threat mitigation capabilities of key stakeholders (Table 1). The CBD focal point has been kept informed of the project developments, with a final project presentation to be delivered to the CBD focal point and the Deputy Minister of the Environment set for August 2012. As a signatory of the CBD, Indonesia has its own national CBD-related strategic plan, the "Indonesian Biodiversity Strategy and Action Plan (IBSAP) 2003-2020". BCI contribution to IBSAP is summarised in Table 1.

In line with the most recent Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) meeting in April 2012 (UNEP/CBD/SBSTTA/16/L.12), BCI typifies recommendations made that it has demonstrated that taking steps to mitigate the negative impact on the unique biodiversity richness of the area should be implicit in the design and implementation of REDD projects therefore maximising the co-benefits for biodiversity conservation of REDD+. The next phase of BCI will continue to address Targets 12, 14 and 15, where ecosystem services, resilience and the conservation of the threatened species within the ecosystem are sustained. The project also aims to expand its remit to share our experiences and lessons learned to assist in the development of sub-national and national safeguard frameworks, and to engage community and corporate land use stakeholders in sustainable production methods under Strategic Goals A and E of the CBD strategic plan.

Table 1: To show the BCI contribution to Indonesian IBSAP (2003-20)

IBSAP Objectives & Goals Relevant to BCI	BCI Contribution to IBSAP Goals
Objective 1: To develop the quality of Indonesian individuals and society who are concerned with the conservation and sustainable use of biodiversity. Goal: Change the behaviour and attitude of individuals and communities to encourage active participation in the management, conservation and sustainable utilisation of biodiversity. CBD Strategic Goals: A, D, E.	NP, forestry, provincial government, NGO, and ZSL staff trained in carbon and biodiversity monitoring; including Agile gibbon *(Hylobates agilis)* vocal triangulation (Appendix 18), bird point counts, camera trapping, ArcGIS and habitat assessments. Continued development in the field will ensure, standardised monitoring protocols are used, as well as providing a legacy of trained, competent field staff. Established and trained six Wildlife Conflict and Crime Response Team (WCCRT) members, incorporating key government agencies (BNP, BKSDA and DKP); in conjunction with 23 person strong volunteer Community Ranger Support Unit (CRSU). Facilitated training of BNP staff and community volunteers to conduct community surveys of needs and attitudes towards biodiversity, conservation, REDD+ and other stakeholders; to determine the potential drivers of negative behaviour identify potential ways to facilitate positive behavioural change. Community, local government and BNP staff trained in participatory rural development planning to assess community needs and facilitate inclusive, active participation. Road shows, workshops, training materials and presentations were delivered at both a government level and community level to build support and understanding of REDD+.
Objective 2: To strengthen resources for supporting the development of science, technology and the application of local wisdom for the conservation and sustainable use of biodiversity. Goal: Expand the data and information available on the nation's biodiversity and make it available to policy makers and the public. Increased applied research in the field of sustainable management of biodiversity. Dissemination of information. CBD Strategic Goals: A, E.	Established field research station to enable long-term biodiversity, carbon, and socio-economic monitoring in and around BNP. Training given to WCCRT team on the use and implementation of MIST (Management Information System for tigers), to increase efficacy of enforcement and protection through application of technological advances. Collected information on tigers used as input into the National Tiger Recovery Programme (NTRP) and Global Tiger Initiative (GTI); resulting in BNP being recognised as part of a priority Tiger Conservation Landscape (TCL) integrated into the NTRP strategy. Produced a biodiversity assessment protocol for tropical peat swamp forest (TPSF) (Appendix 1). Biodiversity, habitat and Carbon baselines and long-term monitoring plan established; including compilation of comprehensive species lists for trees (122 sp), birds (177 sp) and

	mammals (29 sp) (Appendices 2 - 4), to facilitate BCI to attain "Climate, Community and Biodiversity Alliance (CCBA) Gold Standard for Biodiversity Assessments" [2]. All scientific information generated by BCI regularly shared through reports and presentations with key government partners (e.g. PHKA, UN REDD task force, Jambi Provincial government, CBD Adviser Ministry of Environment) and United Nations Office for REDD+ Coordination in Indonesia.
Objective 3: To reduce and stop the rate of biodiversity degradation and extinction at national, regional and local levels within the 2003-2020 period, along with rehabilitation and sustainable use efforts. Goal: Reduction in the rate of degradation and loss of biodiversity. Reduction of deforestation. CBD Strategic Goals: B, C.	WCCRT supporting the policing of BNP (as above). Provided technical advice to facilitate rezoning of BNP (Appendix 5).
Objective 4: To empower institutional, policy and law enforcement arrangements at national, regional and local, as well as at customary level so as to be effective and conducive for the management of biodiversity in a synergic, responsible, accountable, fair, balanced and sustainable manner. CBD Strategic Goals: A,B, C, D, E.	BCI membership and support of the Presidential REDD+ Task Force and Jambi Governor's Provincial REDD+ Commission have led to direct involvement in REDD+ policy-making at national and provincial levels. WCCRT supporting the policing of BNP (as above) and eastern Jambi. Completed signed agreement with BNP and Directorate (PJLKKHL) for provisioning of ecosystem services in protected areas (P.20/Menhut-II/2012).
Objective 5: To achieve fair balance of roles and interests of Indonesian society, as well as to reduce conflict potential among all relevant sectors. CBD Strategic Goals: A,B, D, E.	Economic feasibility assessment of REDD sustainable funding project completed ((Year 1 Forest Carbon report). Completed community surveys to provide baseline information regarding local perception of their role in park management, conservation and economic development. Workshops and road shows carried out to enable effective stakeholder communications and mitigate potential human-wildlife conflict issues.

[2] CCBA Standard Version 2 (2008) states to attain the gold standard all CCBA basic criteria must be met including demonstrating net positive impacts on biodiversity within their project zone, alongside with at least one of three optional Gold Level criteria. This includes "Exceptional Biodiversity Benefits" whereby projects conserve biodiversity of global significance, within the Key Biodiversity Area (KBA) framework of vulnerability and irreplaceability of which eight 8 have been determined to inhabit the BCI AOI. These criteria are defined by species and population threat levels, and are drawn from existing best practices that have been used, to date, to identify important sites for biodiversity in over 173 countries.

3. Project Partnerships

ZSL was the lead UK institution for the BCI project, with ZSL's head office in London provided oversight through its East and South East Asia Conservation Programme. The Project Leader was changed when Laura D'Arcy replaced Tom Maddox as Indonesia Country Coordinator (this change was approved by Darwin). Oversight and technical advice was provided by Dolly Priatna (ZSL Country Coordinator) and Dr Barita Manullang (Project Technical Advisor). Further scientific technical direction was provided by ZSL's Institute of Zoology (IOZ) staff such as Dr Chris Carbone, who assisted with developing camera trapping methods and analysis.

All project activities in Indonesia have been implemented by ZSL's Indonesia Programme. Daily management of the project was carried out by ZSL in country staff; primarily Erwin Perbatakusuma (who replaced Dr. Agus Suratno as BCI Project Manager in August 2011) and Mulya Sakti (BCI Field Manager). ZSL's Ahmad Rusik (Community Liaison Officer), helped coordinate joint activities with community-based NGOs, community stakeholders and government bodies.

Host Country Government Partnerships

Ministry of Forestry (PHKA): In 2008, BNP staff requested help from ZSL to help conserve BNP; leading to development of the BCI project. In May 2011, following 3 years of negotiations, a landmark umbrella MoU was signed by Ir. Darori M.M. (Director General of the Ministry of Forestry) and ZSL to formalise all ZSL activities in Indonesia. This MoU was crucial to formalising BCI's legal recognition as a REDD pilot project (Appendix 6).

Dr, Yeti Rusli (Senior Climate Advisor) and Ibu Nur Masripatin (Director of the Centre for Social Economy and Policy Research) have promoted BCI at international carbon and biodiversity events, including CBD COP 10 in Nagoya, Japan.

Berbak National Park (PHKA): Pak Francisco Moga (Head of BNP) has been a strong and vocal advocate of the project from its inception; joining the team in the field, providing a BCI "operations room" at BNP headquarters and generating significant media coverage to promote the project. A MoU was signed in October 2011 to formalise the relationship between BNP and ZSL (Appendix 7). Dr. Hayani Suprahman took over as Head of BNP in April 2012 and continues the work of Pak Moga to support the BCI.

Directorate of Ecosystem Services within Conservation Areas and Protection Forest (PJLKKHL (PHKA)): To meet with the conditions of the Presidential Decree (61/11), in December 2011 ZSL and BNP signed a work agreement (Appendix 8) with the PJLKKHL. This MoU covered the implementation of activities in preparation for REDD+ in BNP and the listing of BCI to become one of the official REDD+ Demonstration Activities in Indonesia.

Directorate-General of Nature Conservation (PPA (PHKA)): has helped oversee all biodiversity monitoring, management, and protection activities.

Presidential REDD+ Task Force (UPK4): ZSL is working closely with the task force in the development of a REDD+ strategy and action plan for Jambi Province. As part of this collaboration, ZSL supported the Presidential REDD+ Task Force decision to select Jambi Province as one of the nine Indonesian forested provinces designated as a REDD+ pilot province. As an official REDD+ pilot province, the Provincial Government of Jambi will received financial support from UPK4 to develop its REDD+ strategy and action plans and establish baseline carbon stock and emissions data.

Department of Natural Resources Conservation Jambi (Provincial BKSDA (PHKA)): ZSL has had a long-standing and positive relationship with BKSDA Jambi, the head of which, Ir. Tri Siswo Rahardjo MSi, is a strong advocate of REDD+ and Wildlife protection. This partnership was strengthened in January 2010 by the establishment of the Wildlife Crime and Conflict Response Team (WCCRT) and the signing of a MoU in May 2011 (see Appendix 9/9a). The

unit comprises of staff seconded from local forestry policing forces and is coordinated by Pak Nurazman, a BKSDA officer.

Provincial REDD+ Commission for Jambi: BCI joined the Provincial REDD+ Commission for Jambi in January 2012. As a member of the Commission, BCI assisted in drafting policies and practices aimed at reducing provincial Carbon emission (CO_2^e), through REDD+.

Provincial Government Jambi and District Government of Muaro Jambi and Tanjung Jabung Timur: A collaboration agreement is being drafted between ZSL Indonesia, the Governor of Jambi, and the heads of the two districts of Mauro Jambi District, Tanjung Jabung Timur District that BCI AOI falls within. This agreement will confirm the corporation to undertake the management of the two provincially protected areas; Grand Forest Park (Tahura) and Protection Forest (Hutan Lindung), abutting BNP, and confirm their inclusion in the forthcoming project design document (PDD).

Community Empowerment Programme (PNPM): BCI has worked with the PNPM on poverty reduction and alleviation as a potential model for the dispersal of derived REDD+ revenue to meet community needs, as well as providing targeted incentives for reducing forest degradation. Joint activities included training and exchange programmes for local communities.

Other Government Support
Since its inception, BCI has received key support from other Indonesian government bodies. The Production Forest Development (BPK - PHKA) assisted liaison with the logging concessions within the BCI area and the Forest Research and Development Agency (FORDA) regarding historical data collection that they have carried out in the region. Provincially, the assistance of Provincial Forestry Services (Dinas Kehutanan) has been key in BCI's work.

Production Landscape Stakeholders
PT. Putra Duta Indah Wood (PDIW), no formal agreement has been reached but a feasibility study of PT PDIW as a stand-alone REDD+ project was conducted by Environmental Resources Management (ERM) Indonesia in April 2011 (Appendix 10 **– to be held as CONFIDENTIAL)**. As yet no progress has been made contacting the second non-active logging concession, PT Personan Belantara Persada (PT PBP), as ownership of this concession is currently under option.

Host Country NGO Partnerships

Gita Buana: A Jambi-based NGO specialising in community development. A MoU between ZSL and Gita Buana was signed in Year One of the project to assist in the promotion and socialisation of the communities about what is REDD+. The relationship enabled community assessments and consultations.

WALESTRA: A Jambi-based social NGO which conducted baseline assessments to define the communities surrounding BNP.

PINSE: A local NGO in Jambi specialising in community development, PINSE provided essential advice on training community development) for representatives from four local villages.

Harimau Kita Forum (HKF) (The Indonesian Sumatran Tiger Forum): The ZSL-HKF partnership has lead to a grant awarded by the National Fisheries and Wildlife Service (USA) to provide MIST training for BNP, Sembilang NP, and WCCRT staff.

The Rhino Foundation of Indonesia (YABI): YABI provided invaluable training and advice to BCI and WCCRT on how to carry out effective enforcement patrols and biodiversity surveys.

International Partnerships

GIZ Merang REDD Pilot Project (MRPP): A REDD demonstration project in the neighbouring province of South Sumatra; GIZ and ZSL Indonesia signed a MoU (Year 1 report) and technical staff from both projects worked closely together to develop carbon and biodiversity survey protocols.

Environmental Resource Management Foundation (ERM): A MoU (Year 1 report) was signed between ZSL and ERM in year one. ERM provided due diligence on the finding of the project and preparation data for the BCI project design document.

Lembaga Ilmu Pengetahuan Indonesia (LIPI) (Indonesian Institute of Sciences): Since 2008, ZSL has held a MoU with LIPI, which acts as ZSL's in-country scientific advisor. LIPI provided a counterpart and advisor in 2011 for a UK LSE/IOZ PhD student. LIPI Herbarium Bogoriense specialist assisted in the identification of the tree species in the BCI permanent sampling plots.

Wildlife Conservation Society Indonesia Programme (WCS-IP): WCS provided technical support on Tiger population monitoring and protected area capacity building and enforcement. WCS IP also provided office space to ZSL staff based in Bogor for nearly all the duration of the BCI project.

Forest Carbon: An Indonesian environmental consultancy with expertise in forestry, ecological and carbon mechanisms and standards. Forest Carbon carried out a Tier 1 assessment of the feasibility and eligibility of the BCI AOI as a REDD+ project (Year 1 report).

Flora and Fauna International Indonesia (FFI Indonesia): FFI's tiger conservation protection units (TCPU) from Kerinci Seblat NP provided the multi-stakeholder model from which the WCCRT was based upon. The TCPU team provided initial training to the WCCRT on wildlife crime issues, patrol planning and strategic development.

Centre for International Forestry Research (CIFOR): ZSL facilitated four CIFOR PhD students to conduct carbon sequestration research in BNP.

Academic Institution Partnerships

Bogor Agriculture University (IPB): IPB is an Indonesian agriculture university with expertise in tropical agriculture and forestry fields. BCI has supported and hosted three Indonesian MSc students; one of which received training on carbon assessment techniques, and two students who carried out research on tiger distribution (Appendix 11).

University of Jambi: The University of Jambi helped to deliver strategic planning training for local communities and also assisted ZSL staff in SPSS analysis of community survey results.

University of London and Imperial College (IC): A joint PhD candidate with IC and IOZ carried out genetic analysis of Sumatran tiger scats to estimate BCI tiger population size and structure.

University of London and London School of Economics (LSE): A joint PhD candidate with LSE and IOZ supported BCI through extensive data analysis and delivery of training on ecological statistics

4. Project Achievements

4.1 Impact: achievement of positive impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

The project has had a positive, long-term impact on biodiversity, in particular through its biodiversity research, human-wildlife conflict mitigation and benefits sharing work.

The information generated from the biodiversity research is essential for the development and implementation of a sustainable long-term conservation management strategy in BNP and is an integral part of any REDD+ project.

The biodiversity research has also resulted in BNP being officially recognised as part of the high-priority Berbak-Sembilang tiger conservation landscape (TCL), and is included in Indonesia's NTRP, to help meet the country's commitment to the Global Tiger Initiative (GTI). The presence of rare and endangered species such as the Sunda clouded leopard (*Neofelis diardi*) and False gharial (*Tomistoma schlegelii*) have confirmed BNP as a haven for Indonesia's declining wildlife species. The models created under BCI to predict forest loss under different threat/management scenarios will help improve future management plans and meet REDD+ requirements.

Human-wildlife conflict has been directly addressed by building up the WCCRT to work with communities around BNP, providing practical training on how to mitigate further conflict situations. This has also resulted in an increased understanding among the communities about wildlife conservation and the species protected under Indonesian Law.

BCI work with the local communities in relation to REDD+ benefits sharing has created a strong knowledge base and social platform for enabling future disbursement of funds and reduction in unsustainable resource use, fulfilling criteria under the Free Prior Informed Consent (FPIC) component of REDD+ project preparation.

BCI has learnt from the problems encountered by other REDD+ projects, particularly when addressing the needs of the community with respect to revenue disbursement and providing true alternative livelihoods managing community expectations regarding what actual benefits may be derived from a REDD+ project. The BCI inclusive and measured approach in working with the communities at a variety of levels (WCCRT, workshops, surveys) has been vital so as not to jeopardise the Free Prior Informed Consent (FPIC) process required for a viable REDD+ project, as well as ensuring that foundations for strong community safeguards are established.

4.2 Outcomes: achievement of the project purpose and outcomes

The main purpose of BCI was to create a financial incentive, through REDD+, to conserve BNP and the essential ecosystem services it provides to local communities. The DI has enabled significant progress towards achieving this purpose, with BCI becoming a lead REDD+ initiative in Indonesia. BCI is well on its way to entering the carbon market; ensuring future benefits will be equitably distributed amongst local stakeholders and BNP biodiversity conserved. Full realisation of the project purpose within the original timeline was not possible due to the issues that occurred during the DI project period (see section 4.2), but additional funding has been acquired to ensure completion of any outstanding activities by January 2013.

Specific outcomes achieved under the project were (1) an increase in stakeholder knowledge in relation to BNP biodiversity, carbon, and associated livelihoods, (2) increased capacity of government and other stakeholders to predict the effects on biodiversity and local communities of different management scenarios, and (3) increased stakeholder support and capacity to process future benefits from REDD+ and reduce key threats to BNP biodiversity (see section 4.2).

4.3 Outputs (and activities)

Of the four planned outputs, two (outputs 2 and 4) have been completed, and two (outputs 1 and 3) are still ongoing. Of the 32 planned activities under these outputs, 22 have been completed and ten are still ongoing (Annex 1). The summary of achievements and problems encountered under each output are as follows:

OUTPUT 1: Establish institutional framework required to operate carbon revenue-based project.

Achievements:

- Further work of the BCI team through various governance and policy mediums, at both provincial and national levels, led to Government of Indonesia (GOI) recognition of BCI as an official REDD+ pilot project in year two. This facilitated the signing of several benchmark MoUs fundamental to the on-going success of the BCI project and instrumental in securing upgrading the status of the BCI project to an official DA for PHKA. (Milestone 1.5, 1.8).
- Strong partnerships and good communications have been established with stakeholders ensuring long-term local commitment to the project (see Section 3).
- ZSL acquiring membership of the Jambi provincial REDD+ commission ensured BCI involvement in strengthening regional policy and strategy in relation to REDD+.
- REDD+ training, workshops and roadshows were provided for all stakeholders increasing understanding of the REDD+ initiative (Milestone 1.3).
- The Economic feasibility study (Milestone 1.9) by Forest Carbon (Year 1 report) and community needs assessment completed (Appendix 12). With these findings relayed at a provincial and ministerial level In March 2012 PHKA and provincial rulings required that the Park boundaries and zonation be revised at a multi-stakeholder consultation meeting. (Appendix 5).
- Geographic boundaries of land under REDD+ project defined (Forest Carbon report Milestone 1.1) and reviewed by PHKA (Milestone 1.2); now awaiting provincial and ministerial final approval.
- The management system (Milestone 1.4) and associated institutional framework for the implementation and monitoring future REDD+ activities is ongoing and is awaiting further guidance from on PHKA/UPK4 guidance on sub-national forest GHG (greenhouse gas) inventory.

Problems encountered:

- A key limitation to BCI establishing a framework to manage implementation of REDD+ has been obtaining Forestry Carbon Standard Certification (Milestone 1.10).This has been hampered by the lack of a national and international legal framework to guide REDD+ projects. During year one, new laws were passed in Indonesia relating to carbon markets, but no over-arching agreement has been reached on how REDD+ projects will be managed and there still remains contradictory legislation in place regarding governance of such projects. As a result, BCI is still in a “readiness” phase, continuing activities to inform the development of the PDD required for voluntary carbon standards.
- Criteria/guidelines for enabling a REDD+ project to enter the voluntary carbon market have changed over the course of the project e.g. the creation of the CCBA-approved “Social and Biodiversity Impact Assessment (SBIA) Manual for REDD+ Projects” in 2011. BCI has therefore had to lengthen its timeline for the completion of some activities in order to meet these new criteria/guidelines.
- The production of PDD for voluntary carbon standard (VCS) alongside Climate, Community and Biodiversity Alliance (CCBA) (Milestone 1.10) was hampered by the delay in signing some of the required MoUs. Once the MoUs were in placed by this year, the cost of obtaining such certification had escalated beyond the original BCI budget in the DI grant. To mitigate this increase in cost and associated delay, BCI has acquired additional funds from DEFRA and has extended the timeframe for PDD preparation.
- Community reluctance to be involved in forest management activities due to unclear and historically disputed boundaries between BNP and village land. This issue was mitigated by the achievements listed above, but it delayed completion of some of the activities under this output.
- Signing of MoUs (Milestone 1.7) with the logging concession has been restricted due to the current non-operational state of both PT Putraduta Indah Wood (PT PIW) and

Putera Bangsa Pilihan (PT PBP), and only recent legal supporting documentation between ZSL and Berbak NP.

OUTPUT 2: Quantification of emission baseline values and likely rates of change in a "business as usual" scenario.

Achievements:

- Current above ground carbon stock levels estimated at 34MT, below ground Biomass is still being verified.
- Historical land use cover changes calculated (Milestone 2.1) at Tier 1 level in the Forest Carbon Report which also assessed potential future effects on carbon stocks through different management (Milestones 2.3 to 2.8). Tier 3 assessments verifying the Forest Carbon assessments were carried out in year three.
- ZSL staff trained on how to develop carbon MRV (Measurable, Reportable and Verifiable) REDD+ methods.
- Verification of the drivers of deforestation, compiled from the Forest Carbon report and community survey results (Milestone 2.2)
- Relations between local communities and BNP staff improved through BCI REDD+ workshops, and improved management of human-wildlife conflict through WCCRT.

Problems encountered:

- To meet updated REDD+ project preparation guidelines, a full preliminary desktop analysis of the BNP carbon potential by an independent third party was necessary, instead of the simple GIS analysis originally planned. Associated budgetary reallocations and amended activity timeframes were approved by DI in year one (2009).
- The VCS methodology did not (until recently) account for deforestation from fires, which resulted in an underestimate in BCI calculations of potential future carbon loss under different management scenarios as set out in the Forest Carbon Report. This is being address within the scope under research begun by Dr Suratno and continued by a PhD student from IOZ.

OUTPUT 3: Quantification of co-benefit baseline values and their relationship to carbon baseline and values.

Achievements:

- A field research base was established inside BNP providing a long-term base for ongoing REDD+ project activities and associated capacity building efforts.
- A biodiversity assessment protocol was finalised and long term biodiversity monitoring methods piloted (See Appendix 1). Biodiversity inventories compiled for birds (Appendix 2), trees (Appendix 3) and mammals (Appendix 4). Indicator taxa or species identified to assess each habitat's sensitivity to biodiversity and climate change threats and establish project baselines (Milestone 3.2).
- Camera trap survey of tiger density completed (Milestone 3.5). Tiger density using was estimated across each habitat type (Milestone 3.4) at 0.2 tigers/100km^2 in primary forest, 2.4 tigers/100km^2 in secondary forest and 0.6 tigers/100km^2 in swamp bush. Multiplying these densities by the area of each habitat in the BCI AOI gives an estimated tiger population size of 22 individual tigers (Appendix 13).
- Using presence/absence data, the distribution of different bird species has been modelled with respect to habitat variables to calculate the species richness across different forest classes (Milestone 3.3). Results suggest substantial differences in the distribution of bird species guilds which are generalists (e.g. Crested Myna) and those which are more dependent upon mature forest (e.g. Hornbills). These data provide a

method by which to begin to assess the relationship between biodiversity change and above ground carbon at the BCI AOI (Milestone 3.6).

- Social and demographic surveys completed in local communities (see Year 2 report and (Appendix 12) to quantify the communities around Berbak (Milestone 3.7)) and to assess current local understanding of the potential co-benefits for the community of increased engagement with forest management and conservation activities under REDD+ (Milestone 3.8).
- Maps generated to show the links between biodiversity values and for both above and below ground carbon stock levels (Appendix 14)

Problems encountered:

- Initial surveys started later than anticipated due to delays in construction of the field research base.
- Adverse weather conditions (exceptionally high rainfall in 2010 triggered by La Niña) were particularly problematic for field work activities. These conditions continued into year three, when forest fires also hampered field research during August to October; when BCI staff had to assist in combating these fires.
- Camera traps suffered an initial failure rate of 70% due to humidity and high water levels, and it took four months to get replacement cameras to the research site.
- Conflict between local communities and BNP staff due to logging activities caused safety issues for BCI field teams, delaying completion of community surveys.
- One village has been in dispute with an oil palm concession regarding land ownership rights since 2010. This has restricted access to certain parts of the north eastern area of BNP.
- Planned surveys of the endangered False gharial (*Tomistoma schlegelii*) could not be carried out because the MBZ matched funding was not confirmed within the DI grant period. When funding is secured, these surveys will be conducted and the results added to the on-going BCI biodiversity monitoring data.
- Community assessment were undertaken for six villages in year three, expanding the dataset from the four villages in the first phase of analysis, which were representative of the three different village clusters (coastal village, mainland village and riverside village) found in Berbak. 10% less villages were surveys due to a much reduced access due to high rains, resulting in an increased cost and time for travel. The four villages originally surveyed had all benefitted in some way in their development from either NGO assistance or government schemes, therefore, two villages at the lowest quartile for development were also selected, to ensure applicability for future revenue disbursement in the BCI.
- Calculating the co-benefits of the project (Milestone 3.9) required more sophisticated methods than initially planned and are being developed as part of the LSE/IOZ PhD thesis to be integrated in the future monitoring and evaluation of the BCI projects progress.

<u>OUTPUT 4</u>: An assessment of the viability of available strategies to mitigate environmental change.

Achievements:

- Needs assessment surveys completed in local communities (Milestone 4.1 and 4.2) The results showed that villagers are generally knowledgeable about the natural environment surrounding their villages and are aware of the negative impacts to their livelihoods posed by threats to biodiversity and habitat degradation. Villagers understand the forest's function as a water catchment and "flood control" area and the

dangers associated with peat drying through canal and ditch construction (Appendix 12).

- Fire was identified as one of the greatest threats to the BNP ecosystem. Historical occurrence of fires and remote sensing data were used to develop a statistical model to understand the relationships between environmental/anthropogenic variables and fire risk. Using this approach, initial assessments of the risk of fire across the area of interest have been produced along with predictions of the potential impact of REDD+ interventions on this threat (Appendix 15). This was used to allocate scarce resources to locations which are at particularly high risk of wildfires.
- As a response to increased community awareness of village vulnerability to fire, a local organisation (Masyarakat Peduli Api - MPA) was formed with the support of BNP and ZSL, to monitor and mitigate fire risks. Villages surrounding the park are prone to fire, including Desa Telago Lima, Desa Sungai Rambut and Desa Sungai Cemara, all of which were targeted for community survey activities. A bout of wild fires were successfully identified and fought by the MPA and BCI staff in year three.

Problems encountered:

- Due to the negative relationship between Berbak NP and some boundary villages, two community members (one male and one female) were trained and supervised by ZSL staff to undertake the community surveys. This also ensured that the female respondents felt more at ease during the survey and it is hoped removes any potential for coercion or bias and reduces possible conflict between stakeholders, which could in turn affect the Free Prior Informed Consent (FPIC) required by REDD+.
- Blocking public access to canals was found to have the potential to generate a high level of ill-feeling as the canals are currently used as transport channels for local communities, the closing of which may have a negative impact on livelihoods. Therefore resulting in community safeguards issues, thus addressing this issue will be approached in a highly consultative manner, necessitating the identification of alternative transport routes or livelihoods.

4.4 Project standard measures and publications

- Please see Annex 4 for Standard Measures.
- Please see Annex 5 for Publications.

4.5 Technical and scientific achievements and co-operation

The summary of technical and scientific achievements is catalogued in section 4.2 and Annex 1. BCI technical and scientific achievements were made possible through the collaboration between ZSL, Indonesian government institutions, international and in-country experts, local NGOs, and the support of Indonesian university students. Details of methodology and results are catalogued in the respective reports (Annex 5). All methods were peer reviewed by international experts such as Dr. Chris Carbone (IOZ), Dr. Susan Cheyne (Wild Cru), and Dr. Edward Mitchard, University of Edinburgh. The technical and scientific achievements resulted in the publication of 7 technical reports and the submission of 3 manuscripts for publication in peer review journals (see Annex 5).

Research was carried out through a combination of key stakeholder interviews, spatial analysis, household surveys, literature reviews, modelling, Tier 1 Deforestation rates, “Business as usual” modelling as well as Tier 3 biological and Carbon data collection in the field. BCI field staff and Berbak NP staff were closely involved in training and execution of each of these activities. Details of this work are summarised in Annex 1 alongside individual reports in Annex 4 and 5. As such BCI’s ongoing, rigorous measured approach to baseline establishment and monitoring will feed into the development of the country’s REDD+.

A key achievement of the Sumatra tiger monitoring work, in addition to that of the WCCRT, has been the acknowledgement of Berbak NP as a high priority tiger conservation landscape (TCL)

- part of the Berbak-Sembilang TCL, included in the NTRP for Indonesia, ensuring that conservation efforts will continue beyond the BCI DI. The next phase is to focus on assessing the population in the still data deficient Sembilang NP.

BCI camera trapping programme captured the first ever video footage of the Sunda clouded leopard in the wild in Sumatra. An elusive species this highlights further work to be undertaken to research the niche separation between this vulnerable medium sized cat with the larger endangered Sumatran tiger.

To facilitate knowledge sharing, a monitoring protocol has been developed based upon ZSL's work with the Indonesian Institute of Science (LIPI). Originally designed for High Conservation Value (HCV) assessments the documents was reviewed and approved by LIPI scientists and the HCV Network (http://hcvnetwork.org) (Appendix 1). The protocol has been translated into Indonesian and will be shared with all our partners and put online for download on the BCI website. Species guides produced for TPSF by the GIZ Merang project received input from BCI taxonomic data to ensure that they were comprehensive for the region.

BCI's work has been presented in various technical workshops and conferences as well as at internal government meetings supporting the PHKA and REDD+ taskforce in refining each stage in the development of the REDD+ Strategy for Indonesia. Abstracts from presentations and papers submitted can be found in (Appendix 16).

All research findings and protocols have been shared through distribution of reports and presentations to all BCI partners and key stakeholders, e.g. Minister of Forestry, local government bodies, research institutes and NGOs. (See Annex 4 and 5).

4.6 Capacity building

Over the past three years of the BCI Darwin project, one of the key objectives has been to build much greater capacity within Berbak NP and other partners to ensure that an enabling environment is created to provide the tools and skills by which the project can continue beyond the life of the DI funding. However, due to the uncertainties that continue to surround the development of REDD+, both in voluntary schemes and at the national level, focus was placed on establishing baselines for the project and developing techniques by which a long term monitoring programme could be implemented. Training courses attended by key staff are listed in Annex 4.

To date, a total of 22 BNP and 12 other key forestry staff have accompanied the core BCI teams for training on GIS techniques, habitat, biodiversity, Carbon and community assessments, as well as training on community engagement and protection measures. Evidence of the uptake and use of these skills has been seen through BNP staff regularly accompanying ZSL field staff in baseline monitoring activities.

BNP staff also accompanied the project's WCCRT team on patrols and community engagements aimed at reducing conflict and wildlife crime and improving relations between BNP staff and the surrounding communities. MIST training was delivered to four BNP staff who have regularly participated in the broader patrol training. Financial support was given to BNP Head, Pak Moga, to join Dolly Priatna in presenting the findings of BCI to the 2nd Asian Carbon Forum meeting in February 2012 and regular meetings in Bogor and Jakarta involving the development of the REDD+ project. To support the continued development of BNP staff, ZSL maintains an office within BNP, providing BNP and other partner staff with facilities such as computers and internet access. The space is also used for carrying out activity reviews and dissemination of field results to BNP staff.

Six community members have received training in undertaking community needs assessments and application training for PNPM. For community baseline and livelihood surveys representative members of the community (9 male / 9 female) were trained in survey and interview skills to carry out the surveys within their own villages. The WCCRT has over 40 volunteer community rangers, all of which have received training in wildlife survey methods,

patrol skills as well as introductory course in Indonesia laws and regulations regarding wildlife and habitat protection.

In addition to the capacity building activities related to BNP and other host country partners (see section 4.2 and Annex 1), ZSL in-country staff have received in-house training provided by ZSL country managers on project cycling, strategic development, grant writing and by external trainers on English language skills and community needs assessments. Citra Panjaitan (ZSL Tiger Field Survey Co-Coordinator) obtained a grant to attend the Durrell endangered species management graduate certificate course held at Jersey Wildlife Park (Appendix 17).

The signing of MoUs and joint work plans, has laid the foundations for building the multi-stakeholder management body for the proposed REDD+ project. Since late 2011, BCI has played a key role in providing technical advice and support for the development of Jambi province's Carbon emission reduction master plan. In becoming a member of the provincial REDD+ commission, BCI has assisted the commission in facilitating the preparation of REDD+ implementation, MRV and REDD fund dispersal within the province. Other capacity building activities are summarised in section 4.2 and Annex 1.

4.7 Sustainability and Legacy

Since the inception of the DI funding, ZSL has evolved from a single project based international charity working in Indonesia, to a full conservation programme with a three year formal collaboration with a GOI Ministry (PHKA), ensuring the sustainability of the BCI project. Project links with other institutions has, increased ZSL's in-country capacity, and in turn resulted in key ZSL in-country staff providing technical advice and support to other organisations within Indonesia and ZSL Global Programmes operating REDD+ projects such as the Congo Basin.

The signing of the MoU between ZSL and PHKA confirmed ZSL as a legal entity and enabled the securing of additional MoUs, with key stakeholders such as BNP staff. Acknowledgement of BCI as an official PHKA DA has also helped guarantee that the legacy and impact of the project is sustainable and that the relationships and mechanisms begun during the course of the project will endure. The achievements of the project will be sustained and built upon by working with targeted national parks and their NGO partners under the Directorate PJLKKHL, in creating a framework for REDD+, whilst exploring other potential sources of revenue that could be generated by the ecosystem services that tropical peat lands could provide. In order to support the continued progress of the BCI project, a REDD climate change advisor has been hired by ZSL to provide specialist technical advice to the in-country BCI team and associated stakeholders.

Several species-specific grants have been obtained to focus on the protection and monitoring of the Sumatran tiger, therefore most of the ZSL staff will be working on this project for the coming year, with key staff in the field providing oversight with BNP staff on the BCI baseline monitoring. BNP and ZSL have also been part of a successful GEF stage 1 funding bid in collaboration with the PHKA, World Bank, Harimau Kita, FFI and WCS to increase the effectiveness of the protected area management of five protected areas in Sumatra. However, continued funding for the BCI project is still required to continue comprehensive community-based activities and REDD+ additionality activities such as peat land re-wetting.

In addition, the establishment of the biodiversity/carbon/community baselines will enable an improved, proactive, ecosystem-based approach to sustainable forest management for BNP. Future financial incentives resulting from the sale of REDD+ credits will address the drivers of deforestation and degradation through long-term sustainable solutions.

The renovated field station remains the property of BNP, along with a generator, camp equipment and uniforms. The fully resourced computer room will also remain the property of the BNP office. With separate grants obtained, these will ensure the continuity of the multi-stakeholder WCCRT, which will further facilitate communications between the BNP, BKSDA and Dinas Kehutanan as well as the community.

5. Lessons learned, dissemination and communication

Lessons learned
BCI has now established a solid legal and political framework, particularly at a local level, on which to build a viable and inclusive REDD+ project. However, the work of the BCI project over the last year has highlighted how much more work needs to be done at a community level to avoid the problems commonly being experience in other REDD+ projects in relation to ineffective community involvement, decision making, and compensation mechanisms. Now that government partners have been established and baselines set, the next logical and essential step is to ensure that environmental and social safeguards are adhered to.

Despite BCI work to date there is still a disassociation between the communities and the BNP that needs to be addressed. BCI is exploring potential ways to do this including community reforestation schemes, and community involvement in the MRV process such as Plan Vivo while determining the true cost of providing alternative livelihoods, rather than one that is just compensatory and therefore has a potential "knock on" or "leakage" potential on other landscapes or communities surrounding the project.

The BCI project has highlighted the need to define the role of civil society groups and identified the gaps in capacity of these groups in dealing with the complexities of the current REDD+ framework. Therefore it must be implicit in sustainably financing projects such as BCI to build the capacity of these groups, in order for them to provide support to the communities.

A further continuing challenge for the BCI project is the on-going slow progression of the Indonesian REDD+ framework. Although Indonesia is one of the leading UNREDD countries, there are still social and political barriers to overcome to enable effective and timely REDD+ implementation. In relation to this, another lesson learnt from this DI project is to be more realistic and conservative in timeline for completing outputs that are dependent upon the progression of government processes that are outside the project's control.

Dissemination and communication
BCI has established and maintained close communication with the key stakeholders and institutions involved in the project. Regular meetings and progress reports were sent to BNP, with a BNP representative attending all major monitoring and evaluation meetings. Project progress and achievements were presented to the PHKA, the Minister of Forestry, the Presidential REDD+ Task Force, and the Jambi provincial government. As activities continue into the future, the BCI will continue to disseminate information to its partners associated with the REDD+ initiative.

Community focus group discussions have been part of the community socialisation process that the WCCRT have been involved with. As part of this, results from the BCI project have been disseminated to the community stakeholders in regards to biodiversity baselines, wildlife and habitat protection laws and BNP boundaries. This has included a calendar in year two and year three, detailing information regarding the BCI project and wildlife protection.

Scientific findings of the project have been presented at workshops organised by CIFOR, Asian Carbon, CBD Nagoya, and the Asian chapter meeting of the Association of Tropical Biology and Conservation (Appendix 16). Wider communication of the project will be enabled through a specific BCI section on the ZSL website (online in December, 2012). The project has also been featured in several television documentaries by Infocus Asia and National Geographic. Other details of media coverage of BCI can be found in Annex 5.

5.1 Darwin identity

The Darwin Initiative was recognised as the main funder of the REDD+ project preparation work under BCI and the DI logo and name were used throughout the project; prominently displayed in all project documentation including leaflets, brochures, banners, signboards, popular articles, technical reports, and submitted papers. As a result, DI is widely known among conservation and scientific organisations within Indonesia as a UK Government initiative

funding and supporting biodiversity conservation and climate change mitigation activities in Indonesia. The role and commitment that the UK Government is playing in facilitating the development of climate change initiatives in Indonesia were further highlighted by the establishment of the UK Climate Change Unit (a DFID, Defra and FCO initiative), with which BCI has been liaising with since the unit's inception in 2011.

6. Monitoring and evaluation

Project progress was monitored and evaluated against the project logical framework of planned activities presented in Annex 1 and against the outputs and milestones (translated into key performance indicators) as listed in the original funding application. Monitoring of project progress was facilitated through the project committee, which met quarterly to review and approve the reports, work plans and budgets presented by the project leader. The committee was comprised of the ZSL programme manager, ZSL Indonesia country coordinator, BCI project manager, and BNP representatives. The DI monitoring and evaluation format (with associated output, outcome, and impact indicators) was found to be a clear and effective format for presenting and evaluating the project progress with stakeholders and partners. In addition, a drop box system was also created to make available all data generated from the project (photos, reports and presentations) to all staff involved in BCI.

Through BCI, baseline data sets and monitoring approaches (see section 4.2 and Annex 1), have been established to assess the current state of and track changes in, biodiversity ((Monitoring activities 1 and 3 to 9), carbon, and community needs (Monitoring activities 11 to 14) Changes in these baselines are the ultimate measure of future success of the REDD+ initiative, so they will be monitored regularly in the future to assess the effectiveness of conservation actions and to calculate the benefits available from the carbon market(s). As the key measure of long-term project success, the biodiversity, carbon and community baseline and methods were reviewed by external (ERM) and international experts.

6.1 Actions taken in response to annual report reviews

The BCI received a number of helpful review comments and suggestions, which the project responded to in order to strengthen the quality of its outputs. The review comments and project responses were as follows:

Review comment 1: Most forest carbon standards require that a project is approved by the United Nations Framework Conventions on Climate Change (UNFCCC) National Focal Point. It would be useful if the project could demonstrate that approval is being sought. Reviewer asked for more information about coordination with other major REDD+ activities taking place in Indonesia as these reflect on the overall impact and legacy of the project.

Response to comment 1: UNFCC focal point (UNDP) review was subsequently obtained during the process of the BCI REDD+ project being approved as a GOI DA, further coordination with the newly established United Nations Office for REDD+ Coordination in Indonesia (UNORCID), which is a multi-UN staffed body is ongoing.

Review comment 2: The role of this project in Indonesia's REDD+ readiness preparations, along with collaboration/lesson learning with other REDD initiatives ought to be elaborated upon as a key component of the project's legacy and scope for large scale biodiversity impact.

Response to comment 2: Incorporated into project approach (see section 4.2, 4.6, and 5).

Review comment 3: There is a need to ensure that community use of forest resources, community level drivers of deforestation and forest degradation and ideas about how these be addressed, are included in the community needs assessment.

Response to comment 3: Additional detail was obtained through community surveys to improve understanding of forest resource use, and local perceptions of deforestation drivers.

Review comment 4: Project monitoring should be strengthened by reviewing against activities, outputs and assumptions against the log frame, and comparing standard measures achieved against standard measures planned for the project.

Response to comment 4: This was addressed through establishing a regular review process that measured progress against the planned standard measures. (Year 2 report as well as Section 6 and Annexes 1 & 4)

Review comment 5: The project should develop a means of assessing the effectiveness of their training and awareness raising activities.

Response to comment 5: Assessments of training sessions were carried out using participant questionnaires and review by the project committee. A PDR process was put in place in ZSL, so that BCI staff could have measurable Key Performance Indicators (KPI) set to monitor their progress and continued professional development. Time to review this on a six-monthly basis was allocated to all BCI staff. Awareness activities were evaluated for their impact in the community assessments and by simple count of homes and offices which displayed the awareness calendars.

7. Finance and administration

7.1 Project expenditure

Please see attached spread sheet for complete breakdown for Years 1, 2, & 3

7.2 Additional funds or in-kind contributions secured

In addition to the confirmed matching funds identified in the original project document, a total of £498,892 funds were obtained to support BNP protection and research activities. Additional in-kind contribution from BNP, BKSDA Jambi and the Dinas Kehutanan were provided in staff time, vehicles, and meeting space, as well as staff time donated to BCI through the ERM Foundation.

Additional funding and in-country support secured in 2009 (total £54,500):

- Taronga Zoo Field Grant - grant of £6,500 for helping to incorporate local communities into the REDD+ project (1year).
- National Fish and Wildlife Foundation (Save the Tiger Fund) (unconfirmed in original DI application) - grant of £16,000 for establishing tiger population baselines (1 year).
- Rhino and Tiger Conservation Fund USFWS (unconfirmed in original DI application) - grant of £32,000 for tiger monitoring and protection activities (1 year).

Additional funding and in-country support secured in 2011 (total £371,656)

- 21st Century Tiger grant of £12,544 to help tackling wildlife crime in BNP (1 year).
- Taronga Zoo grant of £13,112 for improving wildlife protection and community support unit training (2 years).
- SEGRE Foundation grant of £216,000 awarded for improving wildlife protection (5 years).
- Defra grant of £120,000 for supporting the progress of REDD+ as a sustainable funding mechanism for tiger conservation (1 year).
- Defra grant of £10,000 for reducing forest fires and improving protection of BNP (1 year).

Additional funding and in-country support secured in 2012 (total £72,736)

- Save The Tiger Fund – Panthera Foundation grant of £72,736 for tiger population assessments and protection in Berbak-Sembilang TCL (1 year).

7.3 Value of DI funding

DI funding has been vital to establish a robust foundation for the BCI project, the work of which has been nationally recognised as a model for other REDD+ projects to follow. DI funding was instrumental in transforming an understudied, unknown ecosystem and the wildlife with facing increasing pressures from deforestation, fires and unsustainable usage, to into a now proven viable sustainable financed landscape that has been recognised as one of Sumatra's priority tiger conservation landscapes, which can provide a potential source of revenue that will provide potential sustainable community development in the region and support biodiversity conservation in the future. DI funding has also enabled BCI to obtain significant amounts of matching funds to support activities as outlined in section 7.2.

ANNEX 1: Report of progress and achievements against final project logframe for the life of the project

Project summary	Measurable Indicators	Progress and Achievements April 2009 - March 2012	Actions required/planned for next period
Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained 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.		The BCI project has progressed the institutional framework, local capacity, and knowledge base required for accessing REDD+ financial benefits to secure BNP biodiversity and the livelihoods dependent on that ecosystem. A much greater understanding of the biodiversity, economic and social values of the BCI AOI has been gained, to address the twin goals of conservation and habitat protection through sustainable revenue derived from undertaking a REDD+ project. Tools and mechanisms have been created to provide key stakeholders in the form of capacity building, and protocols to ensure the sustainability of the initiatives and activities.	[redacted]
Sub-Goal: To conserve the biodiversity, carbon potential and associated ecosystem functions of the peat swamp forests of eastern Sumatra.	1. Deforestation rates significantly reduced.	1. Ongoing, with substantial progress made. In three years it is difficult to show significant reduction in deforestation rates. However, since the inception of the project to address BAU deforestation rates, enforcement and protection of the NP boundaries have been increased significantly.	1. BCI is aiming to obtain and analyse remote sensing data to help track changes in forest cover over time to measure the success of conservation actions aimed at reducing carbon emissions.
	2. Key species populations stable or increasing.	2. Ongoing: Biodiversity baselines and monitoring systems in place for key species and taxa such as gibbons, birds, medium to large mammals and vegetation, to determine if key species populations are stable or increasing.	2. Continue to increase the effectiveness and efficiency of enforcement and protection of the NP boundaries through implementation and extend this protection to the adjacent

			provincially protected areas.
	3. Local communities show increased support for conservation.	3. Complete: Findings in the Stage 2 Community report (Appendix 12) has shown that the community has an increased awareness and support of the conservation goals of the project. The WCCRT responds to community concerns regarding potential human-tiger conflict and has staff skilled in the translocation of conflict tigers therefore the work of the WCCRT has shown that local community support for conservation has increased.	3. Determine the best pathway by which community stakeholders are integrated into the decision making for the BCI REDD+ project as well as the management of the project, i.e. through community led restoration projects or involvement in community monitoring protocols. Trial and refine social safe guards to be implemented in the BCI project, attaining CCBA gold standard.
Purpose: To create a financial incentive to landscape stakeholders in eastern Sumatra to conserve peat swamp habitat and thus the biodiversity, carbon potential and other services it contains.	4. Proven ability of an economically viable volume of carbon emission reductions.	4. Complete: The 2010 Forest Carbon report along with ground truthing and verification has confirmed that the BCI project fulfils the criteria for a REDD+ implementation project which can establish sustainable funding for biodiversity conservation through carbon credit revenue raised through emission reductions. BCI research showed that peat re-wetting and fire risk reduction can reduce emissions to obtain carbon credits for the BNP system.	4a .Conduct a cost benefit analysis of REDD+ activities to determine the suitability carbon emission reduction activities such as peat re-wetting or other land uses such as oil palm plantations. 4b .Attain Verified Carbon Standard (VCS) certification and Climate, Community & Biodiversity Alliance (CCBA) Gold Standard for Biodiversity Assessments to finalise the institutional framework for BCI by preparing the PDD document to be submitted by June 2013.
	5. Measurable positive impacts on co-benefits (biodiversity and local communities) if interventions implemented.	5a. Complete. Findings from the Forest Carbon report (Year 1) as well as See Community WALESTRA Stage 1 (Year 1) and Stage 2 report (Appendix 12), highlight clear measurable positive impacts of interventions that could be implemented in line with the recommendations laid out in the Forest Carbon report (Year 1), such	5a.Continue to review and refine the long-term monitoring of carbon emission and deforestation reduction rates, biodiversity and species richness, habitat quality and phenology, as the capacity of the BNP staff grow and in line with the CBD strategic plan for Biodiversity as well as the Aichi targets 1, 5, 11, 14, 15 to facilitate the GOI NBSAPs.

		as peatland re-wetting and fire reduction providing direct economic and biodiversity benefits to Berbak and its communities. However, both social and environmental safeguards will need to be considered. 5b.Ongoing. Identification of suitable indicator species to allow for the measurements of biodiversity co-benefits are now being verified as part of long term biodiversity monitoring programme.	5b. Expand community engagement visiting all of the 34 villages in BCI and management of baselines. 5c. Establish a set of guidelines on the implementation of the biodiversity safeguards recommend in UNEP/CBD/SBSTTA/16/8. 5d.Work with communities and BNP staff, to reduce risk of fires in BNP by exploring peatland rewetting activities, alongside community awareness campaign regarding health and risks of wild fires.
Output 1: **Establish institutional framework required to operate a carbon revenue-based project.**	6. % key stakeholders represented on management body. 7. Number of agreements signed.	6. Ongoing: Preliminary discussions have been carried out with stakeholders, but a management body has yet to be set up as MoU signings were needed. 7. Complete: 8 MoUs signed. The signing of MoUs with key host country partners represents a solid commitment by stakeholders to the establishment of an institutional framework to manage REDD+.	
Activity 1.1: Define boundaries for zones: a) project area; b) reference region; c) leakage belt.		Complete: The Forest Carbon 2010 report mapped the leakage potential of the project area, reference region, and surrounding landscape. However, following the review of Indonesia's spatial plans by RENSTRA and the Presidential Decree regarding a moratorium on forest conversion, these maps required further revision at provincial and district level. In November 2011, a public consultation was held at the BAPPEDA (Provincial Planning) office in Jambi, involving all stakeholders, to review the proposed re-zoning of BNP. Following the meeting the creation of a new rehabilitation zone classification will allow for community-driven restoration projects. This will facilitate ZSL's work (Purpose 2.) to further promote community-driven REDD+ incentives as well as increase community awareness of the value of Biodiversity.	
Activity 1.2: Confirm physical boundary locations with spatial planning agencies.		Complete: Forest Carbon 2010 report including a map of the AOI which illustrates each spatial planning agency and its jurisdiction (see section 4.2, Output 1). .	
Activity 1.3: Provide introductory training on REDD to stakeholders.		Complete. REDD+ socialisation and training delivered to provincial	

		government, forestry and community stakeholders (see section 4.6).
Activity 1.4: Establish independent management entity.		Ongoing: See section 4.2, output 1
Activity 1.5: Sign agreement with National Park.		Complete: See section 2, partnerships.
Activity 1.6: Sign agreement with regional government.		Complete: See section 2, partnerships.
Activity 1.7: Sign agreement with logging concession.		Ongoing: See section 2, partnerships. Further discussions with the concession stakeholders to promote sustainable operational practices under VCS approved methods will be sought.
Activity 1.8: Sign agreement with Ministry of Forestry.		Complete. See section 2, partnerships.
Activity 1.9: Conduct economic feasibility study.		Ongoing: Forest Carbon 2010 report provided a complete Tier 1 feasibility study. A full tier 3 level feasibility study was completed in Year 3, the results of which will be published as a stand-alone report or a peer-reviewed paper.
Activity 1.10: Obtain recognised Forestry Carbon Standard certification.		Ongoing. Budgetary and time constraints, as well as slow development of forest carbon standard methodology related to peat lands, resulted in a delay applying for certification. A PDD will be developed and complete by June 2013 to attain both VCS and CCBA standards.
Output 2: **Quantification of emission baseline values and likely rates of change in a "business as usual" scenario.**	8. Forest cover across project area assessed for at least 10 historical points. 9. Carbon calculations calibrated by at least 100 field sample plots.	8. Complete: Biomass modelling for Berbak has been completed using 57 stratified random sampling with plots located at random in each habitat type. The forest cover indicator has proved an effective tool for illustrating the correlation between habitat type and biomass. 9. Complete: Specific allometric equations for carbon stock calculations specific for the region were defined in conjunction with the GIZ Merang project, using validated WinRock methodology. The carbon sampling calibrated the desktop analysis results from the Forest Carbon Report. Generating an above ground carbon map and quantity for each habitat type and peat depth.
Activity 2.1: Calculate historical land-use and land cover change across zones.		Complete: Results compiled in Forest Carbon 2010 (Year 1), Walestra, and BAPPEDAS reports (Year 2).
Activity 2.2: Identify agents, drivers and underlying causes of deforestation.		Ongoing: Forest Carbon 2010 report provided baseline data on the drivers of deforestation, a further more details threat survey is ongoing using the data gained from the community surveys in (Year 3) and will be incorporated into the threat analysis to model deforestation rate. A fire risk map developed and completed for the AOI (see Appendix 15).

Activity 2.3: Project future deforestation rates and locations across zones.		Ongoing. Forest Carbon report (Year 1) provides baseline data on historical deforestation rates, as well as 30 year Business as Usual (BAU) scenario. However, the model does not account for potential fires risks or the allocation of an Oil Palm concession, on the boarders of the project area so further refining of this is now underway.
Activity 2.4: Identify forest classes in areas of predicted deforestation and land classes replacing them.		Complete: See Forest Carbon report (Year 1)
Activity 2.5: Calculation of baseline carbon stock changes above and below ground.		Complete: Above and below ground biomass calculations complete for each habitat classification (57 forest plots of which 34 were in BNP). The Forest Carbon report (Year 1) calculated the levels of stock changes over time in a BAU scenario.
Activity 2.6: Calculation of carbon stock changes if intervention is taken.		Complete: Forest Carbon report (Year 1) provided Tier 1 baseline data, which was used to calculate stock changes if BAU practices were mitigated or stopped. This calculation was further verified with a more detailed Tier 3 level carbon stock assessment documenting different habitat types (principally forest vs. cleared/swamp bush areas). The change from other land use types e.g. agriculture, will be part of IOZ/LSE PhD thesis.
Activity 2.7: Calculation of carbon stock changes through leakage.		Complete: Forest Carbon report (Year 1).
Activity 2.8: Calculation of overall predicted carbon emission reductions.		Complete: Forest Carbon report (Year 1).
Output 3: **Quantification of co-benefit (biodiversity, community) baseline values and relationship to carbon baselines.**	10. Biodiversity analysis based on at least 100 field samples . 11. At least 30% of villages sampled.	10. Complete: Biodiversity analysis is based on data collected from camera trap placements, permanent sample plots for phenology monitoring and habitat and carbon assessment (Appendix 14), gibbon triangulation (Appendix 18) and bird surveys (Appendix 19). The relationships between tree diversity to above ground carbon stores, bird diversity and individual species presence to land cover type and, therefore, carbon stores and mammal camera trap rates from the camera surveys to the different land cover types, have also been determined in the relevant reports listed in the appendices. 11. Ongoing: 6 (19%) of the 32 villages surrounding BNP were surveyed, chosen as being representative of all village types in the area. It was judged that the 6 villages sampled provided data from all strata of household income, livelihoods development and forest dependency (Appendix 12).
Activity 3.1: Establish field research base.		Complete: See Year 1 report.

Activity 3.2: Development of biodiversity assessment protocol.		Complete: See Appendix 1.
Activity 3.3: Calculation of species richness across different forest classes.		Complete: Species richness for several taxa and for certain key species such as tigers has been calculated (Appendices 13,14,18,19). Long term biodiversity monitoring to document the trends in species richness over time.
Activity 3.4: Assessment of habitat use by tigers and other large mammals.		Complete: Baseline information has now been completed on both tiger and large mammal distribution across the different habitat types. (See Appendices 13 and 20) A closed population survey of the tiger population as part of the 2012 Panthera grant will allow for verification of these figures.
Activity 3.5: Tiger density assessment.		Complete: (see Appendix 13).
Activity 3.6: Summarise relationships between biodiversity values, deforestation and carbon emissions.		Ongoing: Analysis is ongoing; expected to finish by the end of 2013 as part of a PhD thesis.
Activity 3.7: Assess basic demographic and social variables for communities within the project area.		Completed: See Community WALESTRA Stage 1 (Year 1) and Stage 2 report (Appendix 12).
Activity 3.8: Conduct needs assessment for communities in and around the forest.		Completed: Community WALESTRA Stage 1 (Year 1) and Stage 2 report (Appendix 12).
Activity 3.9: Summarise the relationships between community values, deforestation and carbon emissions.		Ongoing: Analysis is ongoing; expected to finish by the end of 2013 as part of a PhD thesis (preliminary report Appendix 19)
Output 4: **An assessment of the viability of available strategies to mitigate environmental change.**	12. At least 5 potential interventions assessed.	12. Complete: Forest Carbon report (Year 1) identified potential interventions and the revenue which they could generate from REDD+.
Activity 4.1: Conduct a needs assessment for improving protection.		Complete: This work was carried out during the Stage 2 community assessment. It is also implicit in the monitoring, evaluation and development of the communities relationships with BCI, WCCRT and BNP.
Activity 4.2: Conduct a needs assessment for improving community livelihoods.		Completed: Community WALESTRA Stage 1 (Year 1) and Stage 2 report (Appendix 12).
Activity 4.3: Conduct a needs assessment for reducing impacts from logging.		Complete: See ERM Report (Appendix 10) and Forest Carbon report (Year 1).
Activity 4.4: Conduct a needs assessment for increasing sequestration through reforestation.		Complete. Details in the PHKA BNP zonation report and Demonstration activity application.
Activity 4.5: Conduct a needs assessment for avoided deforestation through licensing in empty logging concession.		Ongoing. A needs assessment could not be implemented in the logging concession as the licence was issued by the PHKA to a new concessionaire in PT PBP and PT PDIW concession is now in a resting phase.

2. Project's final logframe, including criteria and indicators

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD), the Convention on Trade in Endangered Species (CITES), and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources.			
Sub-Goal: [1] To conserve the biodiversity, carbon potential and associated ecosystem functions of the peat swamp forests of eastern Sumatra.	1. Deforestation rates significantly reduced. 2. Key species populations stable or increasing. 3. Local communities show increased support for conservation.	Satellite imagery based monitoring system. Annual biodiversity assessment. Community surveys at project start and end.	
Purpose: To create a financial incentive to landscape stakeholders in eastern Sumatra to conserve peat swamp habitat and thus the biodiversity, carbon potential and other services it contains.	4. Proven availability of an economically viable volume of carbon emission reductions. 5. Measurable positive impacts on co-benefits (biodiversity and local communities) if interventions implemented.	Economic feasibility study completed by third party. Recognised Forestry Carbon Standard certification obtained. Assessments of relationships between carbon and co-benefits.	Indonesian legislation does not prohibit activities. Carbon sequestration retains a market value. Carbon and biodiversity values overlap. Permission to operate in Indonesia continued.
Outputs: 1. Establishment of the institutional framework required to operate a carbon revenue-based project.	6. % key stakeholders represented on management body. 7. No. agreements signed.	Signed agreements. Legal documents.	Support is obtained by the key landscape stakeholders. Clarity on "ownership" of national forest is obtained.
2. Quantification of emission baseline values and likely rates of change in a "business as usual" scenario.	8. Forest cover across project area assessed for at least ten historical points. 9. Carbon calculations calibrated	Project reports.	Weather conditions permit fieldwork. Sufficient historical data can be obtained.

[1] Changes made to log frame: Original output assessing deforestation drivers incorporated into output 2 and output assessing carbon and co-benefit baselines separated. This was to match the methodology structure for assessing emissions from avoided deforestation recommended by the World Bank BioCarbon Fund (2008). Indicator and verification information improved

	by at least 100 field sample plots		
3. Quantification of co-benefit (biodiversity, community) baseline values and relationship to carbon baselines.	10. Biodiversity analysis based on at least 100 field samples. 11. At least 30% of villages sampled.	Project reports.	Weather conditions permit fieldwork. Communities are willing to cooperate.
4. An assessment of the viability of available strategies to mitigate environmental change.	12. At least 5 potential interventions assessed.	Project reports.	Deforestation continues. Mitigation options are on a scale that is manageable by local action. Landscape managers are open to trialling new techniques

Main activities (details in work plan)

1.1 Define boundaries for zones: a) project area b) reference region c) leakage belt
1.2 Establishment of independent management entity
1.3 Sign working agreements with key stakeholders
1.4 Obtain recognised Forestry Carbon Standard certification
2.1 Calculate historical land-use and land cover change across zones
2.2 Identify agents, drivers and underlying causes of deforestation
2.3 Project future deforestation rates and locations across zones
2.4 Calculate baseline carbon stocks above and below ground
2.6 Calculate carbon stock changes if intervention is taken
2.7 Calculate carbon stock changes through leakage
2.8 Calculate overall predicted project carbon emission reductions

Recommended methodology for measuring avoided GHG emissions from World Bank BioCarbon Fund

3.1 Calculation of species richness across different forest classes
3.2 Calculation of habitat use by key species (tigers, birds)
3.3 Calculation of tiger densities across the project area
3.4 Inventory of all communities within the project area
3.5 Survey of current sources of income and relationship with the forest
3.6 Quantify relationships between biodiversity values, deforestation and carbon emissions
4.2 Quantifiably assess impact of forest protection improvement across project area
4.3 Quantifiably assess impact of community support intervention within the project area
4.4 Quantifiably assess impact of reduced impact logging in active production forest
4.5 Quantifiably assess potential of avoiding all deforestation in unallocated production forest
4.6 Quantifiably assess impact of reforestation options

Indicator 1 – Annual remote sensing assessment of deforestation and carbon emissions across project area compared to reference zone and leakage belt zone
Indicator 2 – Annual ground-based biodiversity indicator and threat assessments across project area compared to reference zone and leakage belt

zone
Indicator 3 – Community surveys at project start and end to assess attitudes towards, and relationships with, the forests and species within them.

Annex 3: Project contribution to Articles under the CBD

Project Contribution to Articles under the Convention on Biological Diversity

Article No./Title	Project %	Article Description
6. General Measures for Conservation & Sustainable Use	10%	Develop national strategies that integrate conservation and sustainable use.
7. Identification and Monitoring	10%	Identify and monitor components of biological diversity, particularly those requiring urgent conservation; identify processes and activities that have adverse effects; maintain and organise relevant data.
8. In-situ Conservation	30%	Establish systems of protected areas with guidelines for selection and management; regulate biological resources, promote protection of habitats; manage areas adjacent to protected areas; restore degraded ecosystems and recovery of threatened species; control risks associated with organisms modified by biotechnology; control spread of alien species; ensure compatibility between sustainable use of resources and their conservation; protect traditional lifestyles and knowledge on biological resources.
9. Ex-situ Conservation	0%	Adopt ex-situ measures to conserve and research components of biological diversity, preferably in country of origin; facilitate recovery of threatened species; regulate and manage collection of biological resources.
10. Sustainable Use of Components of Biological Diversity	0%	Integrate conservation and sustainable use in national decisions; protect sustainable customary uses; support local populations to implement remedial actions; encourage co-operation between governments and the private sector.
11. Incentive Measures	30%	Establish economically and socially sound incentives to conserve and promote sustainable use of biological diversity.
12. Research and Training	10%	Establish programmes for scientific and technical education in identification, conservation and sustainable use of biodiversity components; promote research contributing to the conservation and sustainable use of biological diversity, particularly in developing countries (in accordance with SBSTTA recommendations).
13. Public Education and Awareness	5%	Promote understanding of the importance of measures to conserve biological diversity and propagate these measures through the media; cooperate with other states and organisations in developing awareness programmes.
14. Impact Assessment and Minimizing Adverse Impacts	0%	Introduce EIAs of appropriate projects and allow public participation; take into account environmental consequences of policies; exchange information on impacts beyond State boundaries and work to reduce hazards; promote emergency responses to hazards; examine mechanisms for re-dress of international damage.
15. Access to Genetic Resources	0%	Whilst governments control access to their genetic resources they should also facilitate access of environmentally sound uses on mutually agreed terms; scientific research based on a country's genetic resources should ensure sharing in a fair and equitable way of results and benefits.

Article No./Title	Project %	Article Description
16. Access to and Transfer of Technology	0%	Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information	0%	Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol	0%	Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Other Contribution	5%	Smaller contributions (eg of 5%) or less should be summed and included here.
Total %	100%	

Annex 4: Standard Measures

Code	Description	Totals (plus additional detail as required)
Training Measures		
1a	Number of people to submit PhD thesis	Year 1 & 2: 1 Person (Tola Oni) IoZ/Imperial College, University of London, UK. Title: Genetic distinction and linage of Sumatran Tigers estimates of population size and structure, movement between subpopulations and patterns of regional variation for the Sumatran tiger. Years 2 & 3: 1 Person (Murray Collins) IoZ/London School of Economics, University of London, UK. Title: Can REDD+ benefit Biodiversity? Year 3: 1 Person (Nety Mutiara) Hiroshima University, Japan. Title: Forestry planning in Sumatra in relation to REDD+
1b	Number of PhD qualifications obtained	Year 3: 1 Person (Tola Oni see above)
2	Number of Masters qualifications obtained	Year 1 : 1 Person (Mark Allen) – Deforestation in Berbak National Park (See Year 1 for thesis) Year 2 & 3: 1 person (Elvine Kemala Olviana), Bogor University of Agriculture (IPB), Indonesia. Title: Population Estimation of Sumatran Tiger Using Camera Trap Methods in BNP. (Appendix 11)
3	Number of other qualifications obtained	Year 3: 1 Person B.Sc. (Udin Ikhwanuddin), University of Jambi, Indonesia. Title: Estimation of Carbon Trade Potential Economic Value in Berbak National Park.
4a	Number of undergraduate students receiving training	Year 1, 2 & 3 total: 5 People. Undergraduate students hosted each year from University of Jambi, assistant volunteer on various aspects of BCI project e.g. camera trapping.
4b	Number of training weeks provided to undergraduate students	Year 1, 2 & 3 total: 21 weeks (average 4 weeks/student)
4c	Number of postgraduate students receiving training (not 1-3 above)	Year 2: 2 Volunteer students received patrol training
4d	Number of training weeks for postgraduate students	Year 2: 10 weeks
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal	Year 1: 3 People (ZSL staff) trained in biodiversity monitoring

Code	Description	Totals (plus additional detail as required)
	qualification(i.e. not categories 1-4 above)	techniques including regular continuous training to build capacity. Year 2: 2 People (ZSL staff) specifically training in AB and BG Biomass collection, stock assessment and equation analysis. Year 3: 2 People (ZSL staff) trained in various bird/gibbon sampling techniques and analysis.
6a	Number of people receiving other forms of short-term education/training (i.e. not categories 1-5 above)	Year 1: Year 2: 34 People. GIS training, Patrolling, Carbon stock assessment and REDD+ short courses, delivered to various government stakeholders. Year 3: Local - 8 People. Attended courses in MIST training, crime detection and prosecution. International - 1 Person (Citra Novalina, ZSL Berbak Biodiversity Survey Officer). Course: Durrell Endangered Species Management Graduate Certificate (DESMAN) at Durrell Wildlife Park, UK.
6b	Number of training weeks not leading to formal qualification	Year 2: 34 People = Total of person weeks 62 weeks. Year 3: Local - 8 People = Total of 10 weeks. International -1 Person = Total of 12 weeks.
7	Number of types of training materials produced for use by host country(s)	Year 2: GIS Training manual (Agus Suratno). Title - Panduan Pelatihan ArcGIS Tingkat Dasar, 2011 Year 3: Biodiversity Assessment Tool Kit (D'Arcy *et al*) 2012
Research Measures		
8	Number of weeks spent by UK project staff on project work in host country(s)	Year 1: 49 weeks (T. Maddox) Year 2: 51 weeks (T. Maddox & L . D'Arcy Year 3: 49 weeks (L. D'Arcy)
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	Year 3: 3 action plans: • 5 Year Plan for REDD+ Readiness in BNP (BNP Agency and Directorate Environmental Services of Forest Conservation and Protection Forest) • Jambi Province REDD+ Strategy

Code	Description	Totals (plus additional detail as required)
		and Action Plan 1912 – 1917 (Jambi Provincial REDD+ Commission and Presidential REDD+ Task Force) • Long term monitoring plan using taxa and methods derived from biodiversity baselines.
10	Number of formal documents produced to assist work related to species identification, classification and recording	Year 2: Collaborated on GIZ Birds I.D guide Year3 : Biodiversity Assessment Tool Kit
11a	Number of papers published or accepted for publication in peer reviewed journals	Year 2: 2 (see publications) Year 3: 1 (see publications)
11b	Number of papers published or accepted for publication elsewhere	Year 2: 1 (see publications) Year 3: 1 (see publications)
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	Year 1: Database specifically developed for tiger and prey surveys ZSL staff but open access to stakeholders through Dropbox. Year 2: Camera trap database managed by ZSL staff but open access to stakeholders through Dropbox. Year 3: MIST training and software provided to the multi-stakeholder WCCRT.
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	Year 3: Harimau Kita Forum have developed with partner organisations (inc. ZSL) a database to collate all Tiger population and MIST data from across Sumatra
Dissemination Measures		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	Year 1 : 0 Year 2 : 2 Year 3 : 1 See section 4 for further details
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	Year 1 : 4 Year 2 : 3 Year 3 : 4 See section 4 for further details
15a	Number of national press releases or publicity articles in host country(s)	Year 1: 1 Year 2 : 3 Year 3 : 1 See section 4 for further details

Code	Description	Totals (plus additional detail as required)
15b	Number of local press releases or publicity articles in host country(s)	Year 1 : 1 Year 2 : 3 Year 3 : 8 See section 4 for further details
16a	Number of issues of newsletters produced in the host country(s)	ZSL Website has a project brief which is updated annually and is available for download (English only).
16b	Estimated circulation of each newsletter in the host country(s)	Project brief available for download on ZSL website (unknown numbers downloaded) and over 500 /year (in English and Bahasa) are distributed to stakeholders/interested parties and at meetings.
16c	Estimated circulation of each newsletter in the UK	Project brief available for download on ZSL website (unknown numbers downloaded).
17a	Number of dissemination networks established	4 networks established during project. • Network with Climate Change Working Group in Minister of Forestry; • Network with Presidential REDD+ Task Force. • Key members of Harimau Kita Forum to disseminate findings. • Regular meetings with BNP and other government stakeholders
18a	Number of national TV programmes/features in host country(s)	The National Geographic and Infocus Asia Films can both be included here.
18b	Number of national TV programme/features in the UK	Year 1: National Geographic Film was also release in the UK Year 3: Dolly Priatna took part in BBC 2 documentary 'Tiger Island', to be aired July 2012
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	Fully furnished patrol and base camp to be handed over to BNP (approx £5000 in assets) Computer equipment and other office sundries in BNP office furnished by ZSL £2000. Staff uniforms and camping equipment approx £600
21	Number of permanent educational/training/research facilities or	Research Station Simpang Malaka

Code	Description	Totals (plus additional detail as required)
	organisation established	inside BNP.
22	Number of permanent field plots established	6 ha Permanent Forest Phenology Monitoring plots in Simpang Kubu inside BNP.
23	Value of additional resources raised for project	Camera traps, survey equipment to be used by BNP and ZSL staff for long term monitoring. Approx £3000

Annex 5: Publications

TYPE	DETAIL	PUBLISHER	AVAILABLE FROM	COST (£)
MSc Thesis	Year 1: Deforestation in Berbak National Park, Mark Allen, 2009	University of Brighton, UK	University of Brighton / Dr. Tom Maddox (ZSL)	Free
MSc Thesis	Year 3: Population Estimation of Sumatran Tiger Using Camera Trap Methods in Berbak National Park. Evine Kemala Olviana, 2012	Bogor University of Agriculture (IPB), Indonesian	Bogor University of Agriculture	Free
Undergrad Dissertation	Year 3 : Estimation of Carbon Trade Potential Economic Value in Berbak National Park. Udin Ikhwanuddin, 2012	University of Jambi, Indonesia.	University of Jambi.	Free
Manual	Year 3 : Panduan Pelatihan ArcGIS Tingkat Dasar, Dr. Agus Suratno, 2011	ZSL	Dr. Agus Suratno (ZSL)	Free
Journal Article	Year 2 : Biodiversity conservation in the REDD. Paoli, G.D., *et. al.*	Carbon Balance and Management 2010, 5:7	http://www.cbmjournal.com/content/5/1/7/	Free
Journal Article	Year 2 : Population Status of a Cryptic Top Predator: An Island-Wide Assessment of Tigers in Sumatran Rainforests. Wibisono, H.T, *et. al.*	PLoS ONE 6(11): e25931	http://www.plosone.org	Free
Journal Article	Year 3 : Pleiotropy and charisma determine winners and losers in the REDD+ game: all biodiversity is not equal. Collins, M.B*, Milner-Guilland, E. J., Macdonald, E.A., Macdonald, D.W., 2011 *IoZ PhD student hosted by ZSL Indonesia	Tropical Conservation Science Vol. 4(3)	www. tropicalconservationscience .org	Free
Presentation	Year 2: Harnessing REDD to	ATBC Meeting,	http://atbc2010.org/	Free

International Conference	Conserve the Sumatran Tiger: An Update of REDD Implementation at the Project Level.	in Bali 21-23 July,2010		
Presentation International Conference	Year 3: REDD+ route to conserving biodiversity and mitigating threats to peatlands. Laura D'Arcy and Dolly Priatna	Presentation, ATBC Asian Chapter meeting XTGB China April 2012	www.tropicalbio.org	Free
Presentation International Conference	Year 3: REDD+ Protecting Biodiversity and Peatlands. Dolly Priatna, Laura D'Arcy, Erwin A Perbatakusuma	Asian Carbon Forum, Bandung Indonesia, Feb 2012	http://www.afcunetwork.net/afcu-2012-home	Free
Presentation International Workshop	Year 2 : Assessing peatland distribution and vegetations characteristics of Berbak ecosystem. A. Suratno and L. D'Arcy.	Workshop on Tropical Wetlands Ecosystems of Indonesia: Science Needs to Address Climate Change Adaptation and Mitigation Bali. April 2011	www.forestsclimatechange.org/fileadmin/tropical-workshop/Plenary-3/18P_SuratnoA_Assessing%20peatland%20distribution.pdf	Free
Presentation International Workshop	Year 3 : Linking Great Ape Conservation and Poverty Alleviation: Sharing Experience from Africa and Asia.	Linking Great Ape Conservation and Poverty Alleviation: Sharing Experience from Africa and Asia Jan 2012	http://www.cifor.org/events/linking-great-ape-conservation-and-poverty-alleviation-live-video-stream.html	Free
Poster Presentation International Conference	Year 2: Sumatran Tigers: A flagship species approach to biodiversity conservation utilising REDD.	CBD COP 10 Nagoya Japan. October, 2010.	ZSL	Free
Poster Presentation International Conference	Year 3: Predictive modelling of the fire threat to the peat swamp habitat of the Sumatran tiger and its prey species at ZSL's Berbak Carbon Initiative site, Indonesia.(Appendix 13)	Presentation, ATBC Asian Chapter meeting XTGB China. April 2012	www.tropicalbio.org/images/stories/files/Meetings/2012/ATBCChapter2012_XTBG_Program_online.pdf	Free
Poster Presentation International Workshop	Year 2: REDD+ and the wildlife premium route to mitigating the threats to wetlands. L. D'Arcy and A. Suratno	Workshop on Tropical Wetlands Ecosystems of Indonesia: Science Needs to Address Climate Change Adaptation and Mitigation Bali.	www.forestsclimatechange.org/fileadmin/tropical-workshop	Free

		Indonesia. April 2011		
Presentation	Working to develop a sustainable, self-financing environmental development project in the Berbak ecosystem, Jambi. T. Maddox and A.Suratno	British Embassy Event Jakarta	ZSL	Free
Technical training Presentation	Year 2: Community needs assessment training (Pemanfaatan karbon untuk melestarikan keanekaragaman hayati dan pengembangan Masyarakat).	RENSTRA Training, Jambi.	ZSL	Free
Technical training Presentation	Year 2: Berbak Carbon Initiative Project (Inisiatif Karbon Berbak).	Government REDD Socialization, training event Jambi Oct 2010	ZSL	Free
Technical Presentation National	Year 3: Demonstration Activities (DA's) REDD+ in Berbak National Park (BCI), Erwin A Perbatakusuma and Fransisco Moga.	ITTO Meeting, FORDA, Minister of Forestry. Jakarta 2011	FORDA	Free
Presentation National	Year 3: Progress and Challenge REDD+ Demonstration Activities in Berbak National Park, E.A Perbatakusuma and D. Priatna.	Director General Nature Protection And Nature Conservation. PHKA. December 2011.	Director General Nature Protection And Nature Conservation. PHKA	Free
Presentation National	Year 3: Progress and Challenge on REDD+ Implementation and REDD+ Regional Strategy Development in Jambi Province. Erwin A Perbatakusuma and Ridwansyah	Workshop on Presidential REDD+ Task Force. Jakarta. 26 – 27 January 2012.	Presidential REDD+ Task Force.	Free
Presentation National	Year 3: Progress, Challenge and Lesson-learned REDD+ Demonstration Activities in Berbak Peat Swamp Forest. Erwin A Perbataksuma, Dolly Priatna and Barita O Manullang.	Workshop on Stakeholder Coordination, Sharing and Learning: Methodology, Technique and Institution. PHKA and World Bank, Jakarta. 20 March 2012	Forestry Research and Development, PHKA	Free
Presentation National	Year 3: Progress and Challenge on REDD+ Strategy Development in Jambi Province. Erwin A Perbatakusuma and Ridwansyah. Workshop on	Jambi REDD+ Commission. Jambi. 1 – 2 March 2012.	Presidential REDD+ Task Force	Free

	REDD+ Strategy and Acton Plan.			
Technical Presentation National	Year 3: Developing Cooperation Agreement on REDD+ Demonstrations Activity in Berbak Peat Swamp Forest, Erwin A Perbatakusuma, Barita O Manullang and Mulya Shakti. Multi-stakeholder	Workshop on Letter of Intent ZSL and Governor of Jambi, Jambi. 1 April 2012.	Jambi Governor Office	Free
Calendar	Introduction to REDD and Wildlife protection	ZSL Indonesia	ZSL Indonesia	Free
Leaflet	Berbak Carbon Initiative in both English and Bahasa.	ZSL Indonesia	ZSL Indonesia	Free
International Press	Year 2: Elusive Clouded Leopard Captured on Film - a First Recently identified species spotted in Indonesia forest.	National Geographic news	National Geographic News.	Free
Local Press	Year 2: Berbak Berpotensi Lepaskan 20 juta ton karbon	KOMPAS	http://www.kompas.com/	Free
Local Press	Year 2: Gambut Berbak rusak. Lembarga Inggris (ZSL) lindungi Teman Nasional Berb ak	KOMPAS	http://www.kompas.com/	Free
Local Press	Year 2: ZSL pantau populasi harimau	Jambi Ekspress	http://www.jambiekspres.co.id/	Free
Local Press	Year 3: Terus pantau kandungan karbon	Jambi Ekspress	http://www.jambiekspres.co.id/	
Local Press	Year 3: Kado pangeran Inggris untuk harimau Sumatera	Tribun Jambi	Hard copy only	Free
Local Press	Year 3: Survey karbon di Taman Nasional Berbak	KOMPAS (press release)	http://www.kompas.com/	Free
Local Press	Year 3: William Middleton hibah untuk harimau Sumatera	Jambi Ekspress	http://www.jambiekspres.co.id/	Free
Local Press	Year 3 Harimau Sumatera tewas tersengat listrk	Jambi Ekspress	http://www.jambiekspres.co.id/	Free
Local Press	Year 3: Dua harimau keliaran di Petaling. Tim UPKKL temukan bekas jejak	Tribun Jambi	Hard copy only	Free
Local Press	Year 3 : Sumatra's Last Tiger	NatGeo Wild	Feature in Indonesia National Geographic	Free
Local Public Information	Year 3 -: Profil dan kegiatan ZSL di Provinsi Jambi	BPIK Dishutbun Jambi (Pusat Informasi Kehutanan Provinsi Jambi)	http://www.infokehutanan.jambiprov.go.id	Free
National Press	Save the Apes and You Save the Forests: Scientists	Jakarta Globe (National English Language paper)	http://www.thejakartaglobe.com/home/save-the-apes-and-you-save-the-forests-scientists/493685	Free

Annex 6: Darwin Contacts

Ref No	17-029
Project Title	Berbak to the Future
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Other UK Contact (if relevant)	
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Role within Darwin Project	Regional Manager
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Partner 1	
Name	Dr. Hayani Suprahman
Organisation	Taman Nasional Berbak (Ministry of Forestry)
Role within Darwin Project	Head of Berbak National Park (lead collaborator)
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Partner 2 (if relevant)	
Name	Ir. Tri Siswo Rahardjo MSi
Organisation	
Role within Darwin Project	Head of BKSDA (lead collaborator for biodiversity work outside the BNP and within province of Jambi)
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Fax	
Email	

Annex 7: List of appendices attached

Appendix	Title
1	Biodiversity assessment protocol for tropical peat swamp forest (BAT)
2	BNP Bird population report, modelling bird with tree species distribution in BCI
3	Biodiversity inventory compiled for BNP tree species
4	BNP mammal diversity report
5	Rezoning of BNP summary report
6	MoU between PHKA and ZSL
7	MoU between BNP and ZSL
8	Work agreement between ZSL, BNP and PJLKKHL
9	MoU between BKSDA and ZSL regarding the WCCRT
10	ERM Feasibility study for PT PDIW
11	MSc Thesis Evine Kemala Olviana), Bogor University of Agriculture (IPB), Indonesia. Title: Population Estimation of Sumatran Tiger Using Camera Trap Methods
12	BCI Community assessment Stage 2 report
13	BCI Tiger and prey distribution report
14	BCI Carbon and Biodiversity value report
15	BCI fire risk analysis report
16	Publications (Abstracts)
17	Jersey Wildlife conservation management certificate
18	BNP Gibbon triangulation and population report
19	Opportunity costs for Berbak National Park