

Darwin Initiative Annual Report

Darwin Project Information

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Project Title	Biodiversity Monitoring in Forest Ecosystems in Bale Mountains National Park, Ethiopia
Country	Ethiopia
UK Contract Holder Institution	University of Aberdeen
UK Partner Institution	
Host country Partner Institution	Bale Mountains National Park (Oromia Bureau of Agriculture and Rural Department, OBARD)
Darwin Grant Value	£155,730
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Project Leader Name	M Pinard
Project website	www.abdn.ac.uk/bale
Author(s), date	Pinard, 25 May 2007

1. Project Background

This project is located in the Haremma Forest of Bale Mountains National Park (BMNP) in southeastern Ethiopia. BMNP is one of Africa's most important centres of biodiversity and endemism with its expanse of afro-montane habitat and broad altitudinal range. The forest ecosystems are the most diverse in the park yet the least well-known. The evergreen forests on the southern and eastern slopes of the massif form the most extensive tract of intact forest in Ethiopia and include cloud forest at the upper altitudes and tropical moist forest at the lower, grading into open, savannah woodland further to the south.

The park has protected status but over 7000 people live within its boundaries. The forest is used by residents for cultivation, livestock grazing, apiculture, collection of bamboo and fuelwood and the management of wild coffee (*Coffea arabica*). The forest is also used seasonally by people living outside the park for grazing and increasingly, cultivation. The Haremma forest system extends beyond the park boundaries to the west, south and east. Much of this extension of the forest is within a National Forest Priority Area, with corresponding legal protection, however, within the last three years there has been a rapid expansion of forest clearance in parts of the forest, particularly for intensified coffee production and Khat production (*Catha edulis*), a psychotropic plant that is a lucrative cash crop.

To date, monitoring of the park biota has been largely driven by externally funded research projects and so has been opportunistic, fragmented and biased to few taxa. Almost no monitoring has been done in the forest, despite the serious nature of the threats and the presence of many Ethiopian endemics (7 bird species and 7 mammal species), the endangered Bale monkey (*Cercopithecus (a.) djamdjamensis*), forest lions and hunting dogs. The park staff includes four experts (BSc holders) and about 20 scouts; all but one scout are based at the park headquarters in Dinsho, a 5 hour drive from the northernmost part of the forest. At the start of the project, the management plan for the park was outdated (from 1986) and included

no guidance to staff as to how they might implement conservation activities. Although there is expertise in Ethiopia that could support programme development, the expertise is scattered across institutions that are physically isolated and poor communication and transportation facilities constrain cooperation.

2. Project Partnerships

Our main partner institution is the Oromia Bureau of Agriculture and Rural Development. This regional government body is charged with the management of the park. During the second year of the project, the main developments in our relationship are these: a memorandum of understanding was finally agreed and signed; a new park warden was appointed to BMNP; the OBARD assigned us a new counterpart within BMNP; and, one of the experts in BMNP was assigned a role of leadership in the park's monitoring programme.

The MOU (Annex 3) was drafted, discussed and revised extensively during the first year of the project, with input from a second government body, Wildlife Conservation Department (WCD). Staff changes at senior levels within OBARD, meant that it took several rounds of introductions, negotiations and discussions before the final document was signed. Also, because the counterpart that was named on the proposal (Park Warden for BMNP) died just as the project began, there were concerns about details within the proposal that required rather prolonged consideration by OBARD.

Mr. Berhanu Jilcha (Annex 4 – CV) was appointed as the Park Warden in June 2006. He was briefed informally about the project by the Research Assistant, Dr Menassie Gashaw in June, and more formally in October 06 when Pinard was in Bale. In March 2007, OBARD appointed Mr Jilcha as our counterpart and also nominated him for the MSc Scholarship for the programme at DICE in Kent (prior to this decision, Mr Addisu Asefa, the Acting Warden (Oct 2005 – May 2007) had been our counterpart. Mr Assefa, the park biologist, continues to work closely with us; he is leading the field research and development of guidelines for monitoring birds in the forest. Mr Mohammednur Jemal, the park ecologist, was appointed to lead the monitoring programme for the park in Jan 2007. He is currently receiving support and training from Deborah Randall and Anouska Kinahan of FZS-BMCP (see below).

During the second year of the project, we developed a stronger working relationship with the Frankfurt Zoological Society Bale Mountains Conservation Project (hereafter, FZS-BMCP). FZS is an international NGO and the FZS-BMCP is a long-term park support project focussed on ecosystem monitoring, infrastructure strengthening, tourism development, and natural resource management. We formalized our collaboration in an MOU (Annex – 5) that was agreed in principle in Jan 07 and mutually signed in May 2007. FZS-BMCP is supporting the park in the development and implementation of the monitoring plan that was approved as part of the new BMNP General Management Plan (Annex 6 – GMP). We are working together to develop protocols for monitoring the forest systems in the park, to train and supervise four para-ecologists that have been hired to conduct monitoring work, to prioritize and implement research needed to assess threats in the forest, and to support the development of Sustainable Resource Management agreements with communities living in the Hareenna by providing information about the traditional management system that was place in the forest in the past and by providing dissemination material about the forest, its resources and threats to its sustainability.

WCD has continued to advise the project team during the second year, principally in relation to the MOU with OBARD but also in terms of prioritizing research. Together we jointly supported a research project on the Bale monkey by one of their staff – we covered field costs while they provided staff, transport and logistical support.

Academic staff at Addis Ababa University (AAU) have served as advisors to research proposals and have supervised an MSc thesis project for us on land use change in the Hareenna over the

past three decades. They are also providing expertise in the vegetation sampling in the forest and provided lab facilities and advice for the UA expedition (June – August 2007).

Wondo Genet College of Forestry (WGCF) has been most interested in the project's training programme and sent staff to participate in the Jan monitoring course. Subsequently, staff from WGCF have expressed an interest in collaborating on research in the forest and we are currently working together on proposals for work.

During the year we worked with a variety of institutions as part of two of the steering committees working on the GMP (Park Management and Ecological Management). This work provided opportunities to define a vision for BMNP but also to discuss the wider challenges to biodiversity conservation and national efforts to address the CBD commitments. The Institute of Biodiversity Conservation (IBC) is the focal point for national work towards CBD commitments and they also served as key facilitators in the GMP development.

3. Project progress

3.1 Progress in carrying out project activities

Workshops and Training – during the second year training activities focused the definition of the monitoring programme, and the development of protocols. We offered a short course in BMNP (15-22 Jan 07) for the park experts and staff from other partner institutions (OBARD, Wondo Genet College of Forestry, FZS and WCD) with an aim to examine monitoring needs in the park and implementation issues for the forest. The course (Annex 7) was taught by two members of UA team (D Burslem and X Lambin) and Dr Gashaw, and included lectures, discussions, workshops and field visits. There were 12 participants, the majority from OBARD. The content of this training course was different from that originally planned in the project document (Experimental design and research proposal writing), although elements of experimental design and data management and analysis were covered in the context of monitoring. The change was made to address the immediate needs of the park experts and other professionals working in the area. The new GMP was formulated during Dec 2005 - Dec 2006 and there was an urgency to explore the theoretical and practical issues around ecological management and monitoring. The course was very well received and helped to promote ownership of the monitoring programme in the forest by BMNP staff.

The FZS offered several training courses during the year which are relevant to our project and this report. Two short courses in distance sampling techniques and data management were offered to OBARD staff and professionals from other parks and institutions with an interest in natural resource conservation and management (e.g., WGCF); our Research Assistant, Dr Gashaw, participated in the first. They also funded park experts to attend a training course in GIS. Other externally funded projects working in the Bale region offered training courses to the park staff (e.g., scouts) and staff of local governmental institutions. We did not offer a short course on modern approaches to protected area management for the scouts during the second year as it was felt that it would be redundant with other training that was provided by other institutions. Instead, we provided mentoring and in field training for park staff directly involved in monitoring, mapping and research in the forest. UA staff (Pinard, Burslem and Lambin) spent about 10 weeks in Ethiopia during the year working formally and informally with our colleagues. Dr Gashaw also provided mentoring and training in the field to the park biologists and the para-ecologists that have been hired to implement much of the field-based monitoring, though this is being coordinated and led from BMNP and FZS (see previous section).

In the original project plan there was training for teachers scheduled for the second year. Our activities related to community development have changed in response to concerns raised by OBARD and by the shift in policy related to human activities within the park. Our current plan is to support to BMNP and FZS for the implementation of the Sustainable Natural Resource Management Programme (SNRMP, see Annex 6, pp. 41 – 51) by completing our research on the traditional management system that was in place in the forest prior to villagization, and by

providing dissemination materials for the communities about the forest and threats to its health and survival.

Research – the main activities under research were aimed at defining the monitoring programme for the forest. These included the consultations, discussions and presentations that occurred within the development of the Ecological Management Programme in the GMP, as well as follow-up discussions between the project and BMNP and FZS-BMCP, as well as targeted research to inform the process. A draft document detailing the monitoring programme for the Haremma is enclosed as Annex 8). This draft was developed in consideration of the findings of the various research activities explained below, as well as the priorities outlined in the GMP. One change from the original plan to focus on vascular plants, mammals and birds, is a greater focus on threats, less of a focus the mammals community and a greater focus on endemic mammals.

To inform the GMP and the design of the monitoring programme in the forest, data were collected to determine the number and locations of permanent and temporary settlements in the park. These data appear in a graphic form in the GMP (pp. 29, 53, 62 in Annex 6).

In addition, it became clear during field work that a map of existing trails in the forest was essential to guide stratification and sampling designs. This work was initiated during the second year and will be completed during this third year.

A research project on land use and land cover changes in the Haremma (Annex 9) was completed during this year. The work was a collaborative effort between our project and AAU, and was conducted by Mr Netsanet Deneke Morie. Satellite images from 1973, 1986 and 2000 were examined to classify the area into land use types and then to determine changes over time. The results of this work will be summarized in the draft report on the status of the forest (see outputs) and have helped to inform further research by Mr Eyobe on vegetation types and landscape diversity in the park that is being funded by FZS-BMCP.

From the analysis of remotely sensed data we learned that additional ground-based sampling was required in order to characterize forest quality and structure across the landscape. The steep terrain coupled with the relatively open nature of some of the forest types make it difficult to interpret satellite data with confidence. We developed a protocol for extensive sampling of forest structure and quality (Annex 10) and planned to implement this in April 2007 but the work was delayed due to staffing problems, vehicle problems and security issues (see Section 6). The first two of these problems were sorted out in May and work is planned to proceed in June 2007.

Work was done on defining and refining protocols for monitoring forest structure, composition and dynamics using permanent sample plots (Annex 11). Although training was provided in plot establishment and maintenance in May 2006 and Jan 2007, the field work in establishing the plots was postponed to allow the landscape analyses to be completed (i.e., spatial distribution of forest types, spatial variation in forest quality, settlement data and trail mapping data). Plot establishment is scheduled for June-September 2007. The intention is to use some of the permanent plots to study grazing impacts. This will involve the establishment of enclosure plots (i.e., fenced) alongside a subset of the PSPs in order to examine the impacts of grazing on forest structure, composition and function. Because of the need to maintain and patrol the enclosures, it was agreed that these plots would be established after the information about settlements, trails and forest quality across the landscape was available and analysed.

In our original proposal, we intended to develop and implement a monitoring programme for mammals, focused on describing the community and measuring change over time. In 2006 we tried several methods for sampling large mammals in the forest. Following discussions held between UA, BMNP and other stakeholders and a consideration of published data on the mammal community and endemic mammals in the forest, it was decided that surveillance monitoring of mammals was not a priority at this point in time. Alternately, we supported a preliminary study of the poorly known primate, the Bale monkey (*Cercopithecus (a.) djamdjamensis*), with an aim to establish the feasibility of locating and recording group size and behaviour, and for establishing some density estimates for different habitat types. This work

was conducted by Mr Kumara Wakjira of the WCD (Annex 12). The preliminary work was success in documenting feasibility but also highlighted the difficulties in accessing and moving across the dissected terrain at the lip of the escarpment.

During this year ground work was conducted to support the establishment of a bird monitoring programme. Mr Addisu Assefa and Mr Anteneh Shimelis conducted 3 months of field work in the forest in order to 1) prepare a species list; 2) define the structure and composition of 9 main bird communities; and 3) determine habitat variables that are associated with measures of relative abundance. The researchers have produced a preliminary report, however, difficulties with viruses and computing facilities have delayed the revision of the report. A brief summary is included as Annex 13. This research will continue through year 3, with the aims to devise a simple monitoring strategy and to train the paraecologists to implement the strategy.

During July and August, four students from UA were in BMNP on an expedition (Annex 14). They completed two studies, one investigated the origins of the scattered grasslands that are found in the Hareenna (hereafter, forest glades). This work was lead by Mr Giovanni Chiodi, an environmental science student at UA. Using analyses of soils, floristics, land use and oral histories, the researcher concludes that that some glades are likely to be natural in origin, being treeless due to impeded drainage, topography and podzolization. Other glades are likely to be of anthropogenic origin, and the results suggest that the composition and structure of the vegetation no the glades is strongly affected by permanent grazing. The work presents a hypothesis about the social importance of the glades. The suggestion is that there is a social network associated with the archipelago of glades, with permanent and temporary settlements located strategically in relation to the glades, and kinship relations among communities serving as an important driver for communication and social cohesion. The traditional management system that was in place prior to villagisation included a governance structure that regulated grazing on the glades but this is no longer functional in the communities that have been visited to date (thesis Annex 15).

The second study focused on honey gathering and was conducted by Brigid LeFevre, a geography student at UA. The aim of the study was to describe the traditional honey gathering practices, to describe the attributes of the hives (e.g., which species, hung in which tree species, at what height). The results suggest that bee-keepers follow traditional practice but to with different levels of expertise. Trees were selected for hanging hives based on the defence offered against honey badgers more than for the species or presence of abundant floral resources. Tree species are selected for hive construction based on durability, ease of production, availability and attractiveness to bees. The density of hives varied by bee keeper and altitude. The report on the research is presented in Annex 16.

A research project was initiated with the Park Ecologist, Mr Mohammednur Jemal, to investigate the traditional management system, known as forest gates or "Geda", that was in place prior to the restructuring of local government into woredas and districts. The objectives of the research were to: 1) to document knowledge about the management system that was in place in the Hareenna in recent history; 2) to identify the strengths of the system and to assess what aspects of the system might be relevant to the situation in the Hareenna today; and, 3) to determine the constraints and opportunities for implementing a modified version of the traditional system. This work was initiated with focus group meetings with members of the communities in and around Rira in Dec 06 - Jan 07, but with the focus on the GMP, the work has been delayed. We intend to complete the work during the third year of the project, in collaboration with the team working on SNRMP. Preliminary results suggest that the Geda system was based on a power-sharing arrangement in which each of the 12 ethnic groups represented in the forest contributed one person to serve on a committee charged with the setting and enforcement of laws locally. These laws included access to grazing lands and forest resources. When local governing institutions were abolished and government centralized in woredas, the local institution no longer held any power. The large distance (and lack of transport and infrastructure) between the villages within the Hareenna and the central Woreda offices means that it is very costly for a person to bring a charge against anyone breaking the rules in the forest. Although the elders continue to hold much respect for the Geda system, the younger members of the communities interviewed felt that the system should not be

revitalized. Further work is needed to explore and elaborate on these issues and is expected to be conducted in 2007.

3.2 Progress towards Project Outputs

Output 1: Monitoring programme for Hareenna forest ecosystem in BMP established and functioning through three partner institutions

Overall our progress is much slower than anticipated in completing this output. The delays related to negotiating the MOU with OBARD present some benefits, however, as they allowed the project team to participate fully in the development of the new GMP and contribute to the definition of the ecological management programme. The monitoring programme, therefore, is likely to be more sustainable because a wider group of stakeholders contributed to it and it is incorporated formally in the park's management policy and short-term action plans.

This year the work was focused on activity 1.3, the development of protocols for plants, birds, the bale monkey and the forest ecosystem. This work is summarized in Annex 1.

Output 2: Report on the status of the Hareenna forest published and distributed

This is currently being drafted, with an aim to have a full draft to circulate before Dec 07. The results from annexes 9, 12, 15, 16, along with the analysis of published material (bibliography, annex 18) is relevant to this report, as will be the data from the field work that is conducted in 2007.

Output 3: Community awareness programme established and functioning through three partner institutions.

Based on the results from the PRA, uncertainty over the park's intentions for community involvement in the park during 2005 and 2006, and another project's efforts in the local schools to promote awareness of conservation issues, we revised our activities that support this output, therefore the output itself needs to be revised and the indicators changed.

These two activities are no longer part of our implementation plan. BMNP will focus on establishing Sustainable Resource Use Agreements with several communities during 2007-2012. Along with our partner institutions, we feel that it is important that the work with the communities is consistent and integrated. Therefore we propose to support the BMNP in their efforts to establish SNRUA with communities in the Hareenna by providing information to BMNP and back to the communities on the traditional management systems that used to be in place. Further we will produce information for the communities in the form of posters and pamphlets to disseminate information about the forest, its resources and the threats to its survival. We will produce these materials during the third and fourth years of the project.

Output 4: Report on the compatibility of indigenous land use management strategies with conservation

The reviewers of the project last year questioned the relevance of this work to our project purpose. In the GMP, there is a need to assess and prioritize threats to the Hareenna, and to some extent, there is overlap between the two concepts. We propose to replace this output with an output that is more closely aligned with output 2, Report on the threats to the integrity of the Hareenna forest ecosystem. The indicator could remain the same.

These two activities are revised to focus on threats to the forest ecosystem. In the GMP, the list of threats (with threat level) include: agricultural expansion (very high), wood extraction (high), settlement (high), livestock overstocking (moderate), fire (moderate), unsustainable harvesting of non-timber NR (low), poaching, persecution (low), trampling of vegetation by livestock (low), infrastructure development (low), alien and invasive species (low), small populations and insularity (low). During the third year we propose to initiate research that will document the impacts of grazing on the forests (by using fenced plots paired with unfenced plots), and the impacts on glades (by monitoring floristic composition, vegetation structure and bird use). FZS-BMNP will establish protocols for monitoring livestock numbers in the forest.

This work on threats complements the monitoring programme in that it supports decisions about what the priorities for management interventions, as well as contributes to the documentation of impacts. Darwin has yet to approve this change.

Output 5. Lessons learned and best practices disseminated

The information gathered to date will support these products, however, with the exception of a draft poster related to the Bale monkey and trees that are important for honey gathering, no work has been done to progress these. This work is planned for 2007 and 2008.

3.3 Standard Output Measures

Table 1 Project Standard Output Measures

Code No.	Description	Year 1 Total	Year 2 Total	Year 3 Total	Year 4 Total	TOTAL
2	# people to attain MSc			1		
4A	# undergraduates to receive field training		4			
4B	# training weeks provided		6			
6A	# people to receive other forms of training		12			
6B	# weeks training		1			
7	# training materials provided		2			
8	# weeks spent by UK staff in country		10			
14B	# conferences attended for dissemination		2			

Table 2 Publications

Type *	Detail	Publishers	Available from	Cost £
None as of yet				

3.4 Progress towards the project purpose and outcomes

The publication and approval of the new General Management Plan is a tremendous achievement for all stakeholders of the park. It contributes to our project purpose by empowering park staff, government agents and people living within the park to pursue conservation activities in line with the GMP. The GMP greatly strengthens the policy-framework for prioritizing monitoring. The regional government's commitment to the park is strengthened by their approval of the GMP.

Knowledge of the density and distribution of settlements in the forest will inform the process of implementing the monitoring programme and also the Sustainable National Resource Management Agreements.

3.5 Progress towards impact on biodiversity, sustainable use or equitable sharing of biodiversity benefits

The points raised under the previous subheading are relevant here. To date there is no measurable impact.

4. Monitoring, evaluation and lessons

The project RA, Dr Gashaw, is in frequent contact with the PI and with the local collaborators via phone, email and face-to-face contact. Further, when staff from UA are in Ethiopia, project team meetings are held to review progress, work quality and plan activities.

Lessons learned to date are related to how we can work more efficiently with FZS in planning and implementing field activities with BMNP staff. We will need to focus on monitoring and evaluation issues this year.

5. Actions taken in response to previous reviews

These were described in our report in Oct 06. We repeat them here with updates as appropriate.

Comments and Queries for Project Leader

a. Although the information in the Report suggests that both the training of Park scouts and the PRA exercise was carried out successfully, there is insufficient detail for this reviewer to comment on the quality of the work. Please provide more information on the preparation and methodology of these activities (including copies of the training manuals).

PRA

According to the project proposal, at least two PRAs were planned. The original objective for the PRA was expanded to include a second based on suggestions that were put forward during the project planning workshop in November 2005. Therefore, the two main objectives for the PRA were: 1) to identify gaps of knowledge in biodiversity resources and conservation of Hareenna forest by local communities so as to design strategically community awareness and education programs; and 2) to identify problems/issues and needs related to forest resources conservation and the corresponding measures to be taken.

The first PRA was conducted March 2006 in the Dollo Mena Woreda (district). Three (Waberu, Burkitu and Cheri) of the ten kebeles (villages) that fall within the woreda were randomly selected for the PRA. We consulted with the local staff and administration at the Natural Resources Department in Dollo Mena to get secondary data on the kebeles, the populations within them and to identify possible key informants. In addition to inviting key informants to participate in a group meeting and follow-up focus group discussions, 30 individuals, i.e. 10 from each Kebele were selected to represent various age, sex and wealth categories and were invited to participate in a group meeting. The group meeting was held in Dollo Mena and was started with a briefing about the project objectives and outputs. This was followed by structured discussion where a series of open-ended questions were presented to the group. The discussion was conducted in the local language (Orominia) and the discussion was recorded by a note-taker. Two focal group discussions were held subsequent to the group meeting, where the discussion was more directed at identifying gaps in knowledge and awareness as well as needs in terms of biodiversity conservation in Hareenna forest. These discussions were held with key stakeholders in the kebeles, with key informants from the local communities (farming and pastoral communities) living in and in the surroundings of Hareenna forest and key professionals from the park.

b. The project has made a start on the development of a biodiversity monitoring programme by providing training to forestry scouts in basic monitoring skills. However, it is unclear from the information provided so far: 1) how the project intends to develop the institutional structures necessary for the establishment of this programme; 2) exactly what is to be monitored, how this will be achieved, and how this will strengthen the capacity of the participants to conserve native forest species. These are fundamental considerations, and we would ask that you provide a full response on these matters.

There are several projects underway in BMNP at present that include some objectives related to monitoring, institutional development and capacity building. We have working very hard during this past year to ensure that we are working alongside these other efforts and not moving off independently. The Frankfurt Zoological Society has been supporting the park in the development a new General Management Plan. Part of this effort includes a working group developing the section of the GMP on park operations and another working group developing the section of the GMP on ecological management. The Project Coordinator for our Darwin project is a member of these two working groups. The documents that are being developed are still in draft form and so it is not appropriate for us to include them with this report, however, we can divulge that there is a plan to develop the infrastructure at the Dinsho headquarters to allow the storage of monitoring data and a plan to hire a consultant to support the park senior staff in developing capacity to analyse monitoring data. Our project will also support this capacity building with the training programme that is planned for January 2007 (see Appendix 5). In terms of the park's long-term commitment and capacity to maintain monitoring, this is dependent on the Oromia Bureau's willingness to invest greater resources into the park, and also dependent on long-term support from external funding agencies. It is clear that under the current conditions in Ethiopia, it is unlikely that BMNP will be able to implement its monitoring programme without external financial support.

UPDATE: Now the park has assigned one of the experts to serve as the leader of the monitoring programme in the park. He is currently working with support from FZS-BMCP and ourselves. Four paraecologists have been hired as permanent staff to BMNP (via FZS-BMNP, 2 with salaries supported by our project until the project ends) with responsibilities to implement the field work for the monitoring programme. The other park experts, particularly the biologist, will take responsibility to supervise the paraecologists, and to oversee data entry and management. We are providing informal training to support this as data is generated from the field work in the Harena.

In relation to the second query, we have developed draft protocols for monitoring forest ecosystem properties (i.e., biomass, forest structure and composition, regeneration) across the altitudinal gradient in the forest, through the establishment of a permanent plot network (see Appendix 1). We also plan to develop a protocol for monitoring landscape level change using satellite imagery and aerial photographs. As explained in the progress report in the half year report, these protocols are currently being developed in collaboration with staff at Addis Ababa University and the Ethiopian Mapping Authority (Ato Degello). We plan to monitor bird community composition and structure and are working with Anteneh Shimelis and Addisu Assefa (Park Biologist) to develop and trial the monitoring protocols (See Appendix 2). We also plan to monitor mammals, the survey protocols are being drafted currently and are scheduled to be trialled in November and December 2006. As part of the monitoring of human impacts, we are developing protocols for monitoring grazing thru seasonal survey of livestock densities, and with exclosure plots in the forest to measure impacts on tree regeneration and forest understory composition and structure (Appendix 1). We have conducted a survey of settlements in the forest (permanent and temporary) and will use these data in the short-term to help evaluate the utility of estimating landscape attributes of the forest with satellite images and aerial photos, but these data will also be incorporated into the park's monitoring programme, with settlement numbers to be surveyed every several years.

We believe that through the development, implementation and assessment of the monitoring of birds, mammals, grazing and the forest we will be developing the capacity of the park staff and local people to conserve their native forest species. The generation of baseline data will be a permanent asset for the park. The training that the park staff receive during each of the steps in the monitoring programme will be relevant for expanding the monitoring to other systems within the park. The increase in activity within the Harena will promote awareness and understanding of the resources in the forest amongst the park staff, and the collaboration between park staff and residents in the forest that is promoted during the implementation of the monitoring activities is expected to enhance understanding, both for the residents in terms of the park's aims and objectives, but also for the park staff in terms of local values, needs and aspirations.

UPDATE: The current status of this work was reported on in section 3.

c. The level of knowledge in ecology and conservation issues/methods among forest scouts is generally low, and the training and awareness raising activities of this project should be valuable. Given the limited resources of the Forestry Department, the current responsibilities of scouts, and the distance from office to site (at least 5 hours drive), it is hard to see how biodiversity monitoring by scouts will work in practice. How does the project team intend to address this issue?

Concurrent to our project, the park with the support of the Frankfurt Zoological Society is currently writing a General Management Plan which includes a plan for additional staffing, including scouts and experts, as well as additional infrastructure, including a sub-headquarters at Katcha in the Hareenna. While it may be that the GMP is approved within a year, it will probably be more than a year before the funding is secured to implement the expansion of staff that is proposed within the GMP. These staffing issues are beyond the scope of our Darwin project, however, we are building capacity among the experts and the existing scouts so that they will be in a position to implement monitoring. Further, we are training local people resident in the Hareenna to support the implementation of the monitoring programme. In the short-term, we will implement the monitoring with experts, scouts and local people. There is currently one scout based in the Hareenna but we are working with half a dozen residents routinely for work in the Hareenna. In the draft Park Operations component of the GMP the point is made that in the short- and medium term, the park will need to rely on external support to conduct the research and monitoring that is outlined in the GMP.

UPDATE: see point a above.

d. The report on the compatibility of indigenous land use management strategies with conservation should provide some interesting information but it is unclear as to the purpose of this exercise (considering that the focus of your project is on biodiversity monitoring and awareness-raising) or how the information will be used. Please clarify.

Under the GMP, it is the intention of the park management to zone the park into core areas where human uses are restricted and other zones where some uses are permitted. In the forest, it is likely that grazing, honey gathering, low-intensity coffee production, and small scale cultivation are uses that will be allowed in parts of the forest. In addition to these activities, bamboo harvesting, timber harvesting, and intensive coffee cultivation are practiced in the forest. Because some resource management activities are going to be included in the management policy of the park, we believe that the monitoring programme in the forest needs to be designed in such a way as to feed back information to the park about the impacts of their prescriptions. This is how we see our research on the compatibility of land use strategies with conservation being relevant to our overall aim.

Another development in relation to this came from our PRAs. We learned that there used to be a traditional management system that controlled access to forest resources by the residents in the forest. The younger generation and more recent settlers are unfamiliar with the traditional system. Previous to our PRA the park staff was unfamiliar with the existence of this "forest gates" system. We are preparing to conduct further research with key informants in the forest to document in greater detail how this system worked and what the by-laws were that served to control access. It may be that some aspects of the traditional system could be revived to help the park support the communities in developing sustainable community resource management strategies. We see this as relevant to our broader aim of promoting conservation in the park and increasing community awareness of the park and the conservation issues surrounding human resource use.

UPDATE: see section 3.

e. Mr Garedew's death late last year means that changes will have to be made regarding MSc training in year 3. Please clarify.

In the first year, Mr Addisu Asefa replaced Mr Garedew as the Acting Warden. During this time, Addisu served as our main project partner for the park but no commitments were made in relation to the MSc scholarship. Between January – May of 2006, it was unclear as to whether or not a new person would be brought in to BMNP to replace Mr Garedew, or if Mr Addisu or one of the other park experts would be

promoted to the position. In June of 2006, the Oromia Bureau appointed Mr Berahanu Gilcha as the Park Warden, allowing Addisu to return to post of Park Biologist. The Project Leader and Project Coordinator, Dr Menassie Gashaw, met with the Park Senior Staff (Warden and 3 experts) in October 2006 to clarify the arrangement between the park and the project (who would serve as the main project partner) and also to clarify the procedures for identifying a suitable candidate for the MSc scholarship. Because two of the experts as well as the warden are interested in the scholarship, we defined criteria for the selection of the candidate and requested that each submit a letter of intent (see Appendix 4). We hope to identify the successful candidate over the next 2-6 months.

UPDATE: see section 2.

6. Other comments on progress not covered elsewhere

The four paraecologists that were hired by our project and FZS-BMCP in January, quit in April because of they were dissatisfied with their per diem rates. This set our work back by at least 8 weeks because we then needed to recruit new people, and repeat the training. Now 4 new people have been hired and have received initial training and are working in the field.

Our project vehicle required an engine overhaul and there were several aborted trips to the field as it became clear that the “patch-up” repairs were not going to solve the problem. This also set back our field work by about a 3 weeks.

Security, when the PI was in BMNP in March and April, the Oromia Liberation Front was active in the forest. There was an incident with the police in one of the villages in the southwestern part of the forest in which 3 people were killed. Subsequent to that there were a few more incidents of which I do not have the details. Concerns over security have meant that the two undergraduate students from UA that had planned to conduct their thesis research in the Hareenna with the project this year in July and August have had to cancel their plans. Our own field team avoided entering the forest in April and May while the security concerns were in place. It is impossible to predict what will happen over the next 6 months in relation to the OLF however we are fortunate to be well-connected with staff in BMNP and local informants so that to date, the project team seems to be getting reliable local information. Nevertheless, this is a major concern for us.

7. Sustainability

As indicated previously, the incorporation of the ecological monitoring programme into the GMP bodes very well for the sustainability of the monitoring in the forest. The commitment by the park to maintain the paraecologists over the long-term to implement the programme, and the assignment of one of experts as the leader are very positive developments.

Our working relationship with FZS-BMCP is also good for sustainability because their staff have a long-term presence in the park and they are good communicators with our project team both in Ethiopia and in the UK.

Our collaborations with WCD and AAU are also important for sustainability as they serve to promote Ethiopian professionals conducting research in the park and encouraging postgraduate student projects to be based in the park.

8. Dissemination

Three theses were produced based on work supported by the project this year. Also, two posters are in preparation for distribution within Ethiopia and within the park.

Dr Gashaw presented project progress reports to two national conferences and to at least one national working party related to protected area management.

9. Project Expenditure

Table 3 Project expenditure during the reporting period

10. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum). This section may be used for publicity purposes

[I agree for ECTF and the Darwin Secretariat to publish the content of this section](#)

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2006/07

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2007	Actions required/planned for next period
<p>Goal: <i>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</i></p>			<p><i>(do not fill not applicable)</i></p>
<p>Purpose The purpose of the project is to conduct research and to strengthen the capacity of researchers, park managers and other government agents, and local people to protect native forest species of plants and animals in BMP.</p>	<p>Biodiversity monitoring programme for Harenda forest in place and functioning by yr 3.</p> <p>New knowledge on biodiversity in Harenda forest ecosystem in BMP, particularly vascular plants and vertebrates and landscape structure and composition.</p> <p>Awareness of communities on the role of protected areas strengthened.</p> <p>New knowledge on the compatibility of various indigenous land management strategies with conservation objectives.</p>	<p>The publication and approval of the new General Management Plan is a tremendous achievement for all stakeholders of the park. It contributes to our project purpose by empowering park staff, government agents and people living within the park to pursue conservation activities in line with the GMP. The GMP greatly strengthens the policy-framework for prioritizing monitoring. The regional government's commitment to the park is strengthened by their approval of the GMP. Knowledge of the density and distribution of settlements in the forest will inform the process of implementing the monitoring programme and also the Sustainable National Resource Management Agreements.</p>	<p>Key Actions: Continued implementation and protocol development, testing and revision.</p> <p>Writing up reports into publishable documents</p> <p>Completion of study on traditional management system and production of dissemination materials.</p>
<p>Output 1. Monitoring programme for Harenda forest ecosystem in BMP established and functioning through three partner institutions</p>	<p>Minimum of 20 staff from partner institutions trained by year 3 in sampling protocols, data analysis, and database maintenance. Sampling protocols elaborated and tested by year 2.</p>	<p>Progress made in agreeing priorities for monitoring, integrating this into the GMP, and developing and testing protocols.</p> <p>The partner institutions that will take the monitoring programme forward are principally BMNP (as part of OBARD) and FZS-BMCP. WGCF, AAU and WCD are involved currently but their long-term commitment is only informal at this stage; they are contributing through research and training at this point.</p>	

		The first indicator should probably be revised to a lower number. There are 8 key staff that have received the full complement of training and another 12-20 that have received components of the training on offer. This is for no fault of the project but rather the relevance and interest of the various training themes to different members of staff.
Activity 1.1: Project planning workshop (relevant also to Outputs 2, 3, 4)		This was completed in November of 2005. Further discussion and refinement of our workplan and the training programme within the project is made regularly when UA staff visit the country.
Activity 1.2 : Field-based training (1) mammals; (2) birds; (3) plants followed by data management training;		This was completed in the form of scout training in March 2006, and has continued informally by providing a bird expert to mentor the park biologist on field methods (Dec 06-Feb 07). Two field visits (April 06, Jan 07) have been made by Burslem (UA) to the Hareenna to train the team to implement permanent sample plots for vegetation.
Activity 1.3: Develop and implement protocols for sampling vascular plants, birds, mammals, ecosystem and landscape structure and function; develop database structure.		<p>The protocols for sampling vascular plants have been developed and data collection is scheduled for July –Sept 07. This work was delayed by a need to evaluate the landscape data (forest cover, vegetation types, settlement distribution and density) to allow the plots to be located appropriately.</p> <p>A protocol for sampling the landscape scale measures of forest quality and forest cover on the ground have been agreed and are currently being implemented. Analysis of remotely sensed data is ongoing and protocols for assessing forest cover change are scheduled for the end of this third project year.</p> <p>Baseline data to inform the protocols for sampling birds were collected in Dec 06-Feb 07 and a second field season is scheduled for July-Sept 07. Sampling of mammals was conducted in Dec 06 but a decision was made that it was currently not a priority to incorporate mammal community sampling into the monitoring programme. Alternately, a research project aimed at estimating the density and distribution of the Bale monkey was conducted in Dec 06 and March 07. A repeat census will be conducted during the rainy season in July or Aug 07.</p> <p>Additional sampling protocols for the glades (grasslands within the forest) will be devised during this project year.</p>
Remainder of activities related to output 1 1.4 Manual describing sampling protocols, database and guidelines for use and development. 1.5 Interim report on monitoring plan for the Hareenna forest. 1.6 Complete analysis of baseline data and revise monitoring plan and database as needed 1.7 Booklet on monitoring forest ecosystems.		No progress has been made formally on these planned activities as they are dependent on us achieving further progress with activity 1.3. As it stands, it still seems feasible that we will complete these activities before the project ends.
Output 2. Report on the Status of the Hareenna Forest in BMP published and distributed	Report peer-reviewed and publication date established, distribution arrangements in place. 300 copies produced and distributed by y 3.	This is currently being drafted, with an aim to have a full draft to circulate before Oct 07.

<p>Activity 2.1: Collate historical data on forest cover in the park, including satellite data from the national Woody Biomass Project, conduct spatial and landscape analyses on forest cover and forest cover change.</p>	<p>This has been partly completed (Annex 9). The results from the first analysis presented many questions that require additional analysis and ground-truthing before we can be confident of the results.</p>
<p>Activity 2.2: Complete baseline data collection, process material, digitise data and conduct preliminary analyses on vertebrate and plant diversity.</p>	<p>This work started during 2006 and will continue through 2007.</p>
<p>Activity 2.2: Report on spatial analysis of forest cover and landscape diversity. Activity 2.3: Final report presenting summary of findings from baseline sampling.</p>	<p>These activities will be conducted during 2007 and 2008.</p>
<p>Output 3. Community awareness programme established and functioning through three partner institutions</p>	<p>Participatory appraisal conducted and results discussed. Curriculum materials developed and tested by y 2. At least 10 teachers trained in the use of education materials. At least 15 scouts and rangers trained in the fundamentals of participatory resource management.</p>
<p>Activity 3.1: Conduct PRA in at least two settlement areas within the park to determine needs and priorities for community awareness programme.</p>	<p>This activity was completed in March 2006. Further consultations and discussions were held between BMNP and communities within the Hareenna in 2006 as part of the development of the GMP.</p>
<p>Activity 3.2: Develop educational materials for communities about protected areas and impacts of grazing, fire and forest clearance. 2 Posters produced. Activity 3.3: Training workshop for educators on the protected areas;</p>	<p>These two activities are no longer part of our implementation plan. BMNP will focus on establishing Sustainable Resource Use Agreements with several communities during 2007. Along with our partner institutions, we feel that it is important that the work with the communities is consistent and integrated therefore we propose to support the BMNP by providing information about the traditional management system and information about forest resources and threats to forest conservation for dissemination to the communities.</p>
<p>Activity 3.4 Document the traditional management system that was in place in the Hareenna (Geda system) and assess to what extent components of the system are relevant to current needs and institutional structures.</p>	<p>This research was started in Dec 2006 and will be completed in 2007. This activity was not part of the original log frame.</p>
<p>Output 4. Report on the Compatibility of Indigenous Land Use Management Strategies with Conservation</p>	<p>Report peer-reviewed and publication date established, distribution arrangements in place. 300 copies produced and distributed by y 3.</p>
<p>Activity 4.1: Conduct field research on the impacts indigenous land management activities on forest ecosystem processes. Activity 4.2: Booklet on livelihood strategies and</p>	<p>These two activities need to be revised to focus on threats to the forest ecosystem.</p>

their compatibility with forest conservation objectives.		
Output 5. Lessons learned and best practices disseminated	<ul style="list-style-type: none"> 1 Booklet on monitoring forest ecosystems produced 1 Booklet on the livelihood strategies and their compatibility with forest conservation 2 posters produced 2 papers submitted for publication in scientific journals 	The information gathered to date will support these products, however, with the exception of a draft poster related to the Bale monkey, no work has been done to progress these. This work is planned for 2007 and 2008.

Annex 2 Project's full current logframe (changes in bold)

Project summary	Measurable Indicators	Means of verification	Important Assumptions
<p>Goal:</p> <p>To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve</p> <ul style="list-style-type: none"> • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of benefits arising out of the utilisation of genetic resources 			
<p>Purpose</p> <p>The purpose of the project is to conduct research and to strengthen the capacity of researchers, park managers and other government agents, and local people to protect native forest species of plants and animals in BMP.</p>	<p>Biodiversity monitoring programme for Hareenna forest in place and functioning by yr 4.</p> <p>New knowledge on biodiversity in Hareenna forest ecosystem in BMP, particularly vascular plants, birds and landscape structure and composition.</p> <p>New knowledge on the threats to forest conservation.</p> <p>Awareness of communities on the role of protected areas and threats to forest conservation strengthened.</p>	<p>Field survey reports and publications by partner organisations.</p>	<p>Government policies and programmes remain supportive of conservation work in BMNP; OBARD, BMNP, FZS-BMCP remain viable and committed.</p>
<p>Outputs</p> <p>Monitoring programme for Hareenna forest ecosystem in BMP established and functioning through three partner institutions</p>	<p>Minimum of 15 staff from partner institutions trained by year 3 in sampling protocols, data analysis, and database maintenance.</p> <p>Sampling protocols elaborated and tested by year 4.</p>	<p>Field reports</p> <p>Database with biodiversity data with associated manual.</p> <p>Participant attendance records.</p>	<p>Trained staff remain in institutions and in positions where they can use the skills provided and train others in the skills.</p>

Report on the Status of the Harena Forest in BMP published and distributed	Report peer-reviewed and publication date established, distribution arrangements in place. 300 copies produced and distributed by y 3.	Published reviews and feedback on report. 2 copies sent to Darwin Initiative	
Report on Traditional Management System	PRAs conducted and results discussed. Focus group research on traditional management practices completed. Report submitted and results discussed in relation to SNRU agreements.	Local meeting reports. Published materials. Participant attendance records.	Users and relevant stakeholders are willing and able to participate in the process.
Report on threats to forest conservation.	Report peer-reviewed and publication date established, distribution arrangements in place. 300 copies produced and distributed by y 4.	Published reviews and feedback on report. 2 copies sent to Darwin Initiative	
Lessons learned and best practices disseminated	1 Booklet on monitoring forest ecosystems produced 1 Booklet on threats to forest conservation produced 2 posters produced 2 papers submitted for publication in scientific journals		Materials reach and positively influence intended stakeholders.
Activities	Activity Milestones (Summary of Project Implementation Timetable)		

Workshops / Training Events	<p>Yr 1: Project planning workshop with project team to agree workplan, define training programme;</p> <p>Yr 1: Field-based training (1) mammals; (2) birds; (3) plants followed by data management training;</p> <p>Yr 2: Training workshop on (1) monitoring design and implementation;</p> <p>Yr 2: Informal training in the field on implementation and data management;</p> <p>Yr 3: Final workshop, for dissemination and work on publications</p>
Research	<p>Yr 1: Collate historical data on forest cover in the park, including satellite data, conduct spatial and landscape analyses on forest cover and forest cover change.</p> <p>Yr 1, 2, 3: Develop and implement protocols for sampling forest structure and composition, birds, forest glade biodiversity, and landscape structure and function; develop database structure.</p> <p>Yr 1: Conduct PRA in at least two settlement areas within the park to determine needs and priorities for community awareness programme.</p> <p>Yr 2 and 3: Complete baseline data collection, process material, digitise data and conduct preliminary analyses on vertebrate and plant diversity.</p> <p>Yr 3: Conduct field research on threats to forest conservation.</p> <p>Yr 3 and 4: Complete analysis of baseline data and revise monitoring plan and database as needed</p>

<p>Reports and publication development</p>	<p>Yr 1, 2, 3, 4: Develop materials for communities about forest resources, and threats to forest conservation. At least 2 Posters produced.</p> <p>Yr 2, 3: Report on spatial analysis of forest cover and landscape diversity.</p> <p>Yr 2, 3: Interim report on monitoring plan for the Harena forest.</p> <p>Yr 3: Booklet on monitoring forest ecosystems.</p> <p>Yr 4: Final report presenting summary of findings from baseline sampling.</p> <p>Yr 3, 4: Manual describing sampling protocols, database and guidelines for use and development.</p> <p>Yr 3, 4: Papers submitted to scientific journals for peer-review.</p>
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Annex 3 onwards – supplementary material

3. MOU with Oromia
4. CV Berhanu Jilcha
5. MOU with Frankfurt
6. GMP
7. Training Course Material
8. Monitoring programme
9. Thesis Netsanet
10. Protocol for transects
11. Protocol for plots
12. Bale monkey report
13. Preliminary results of bird study
14. UA expedition report
15. Giovanni chiodi Thesis
16. Honey report
17. Geda system report

Checklist for submission

	Check
Is the report less than 5MB? If so, please email to Darwin-Projects@ectf-ed.org.uk putting the project number in the Subject line.	
Is your report more than 5MB? If so, please advise Darwin-Projects@ectf-ed.org.uk that the report will be send by post on CD, putting the project number in the Subject line.	
Do you have hard copies of material you want to submit with the report? If so, please make this clear in the covering email and ensure all material is marked with the project number.	
Have you completed the Project Expenditure table?	
Do not include claim forms or communications for Defra with this report.	