

Darwin Initiative for the Survival of Species

Annual Report

1. Darwin Project Information

Project Ref. Number	12/002
Project Title	<i>Capacity Building for Managing and Monitoring the Bushmeat Trade in Gabon</i>
Country(ies)	<i>Gabon</i>
UK Contractor	<i>University of Stirling</i>
Partner Organisation(s)	<i>Ministry of Forest Economy, National Forestry School,</i>
Darwin Grant Value	<i>£40,715 awarded over reported period; £162,225 requested over whole period</i>
Start/End dates	<i>1 Sept 2003 – 31 August 2006</i>
Reporting period (1 Apr 200x to 31 Mar 200y) and report number (1,2,3..)	<i>1 September 2003 – 1 April 2004</i>
Project website	
Author(s), date	<i>Kate Abernethy, Malcolm Starkey, Daniel Idiata, 30 April 2004</i>

2. Project Background

- The project is being undertaken in Gabon, Central Africa. It aims to help the government of Gabon to manage the trade in wild animal meat (bushmeat) in order to preserve wildlife populations and wild meat resources for rural people. Sustainable management will require prohibition of hunting of some species and quota harvesting of others, whether this be done through management of geographically defined hunting zones, closed and open seasons and/or protected species lists.
- The project builds on research commissioned by the Gabonese Wildlife and Forestry department (DFC) and carried out in Gabon from 2000 to 2003 by a team of researchers from this Ministry and the Station d'Eudes des Gorilles et Chimpanzés (SEGC), a field research station staffed by the American NGO 'The Wildlife Conservation Society' and the gabonese research institute 'Centre International de Recherches Médicales de Franceville' (CIRMF). All three of these institutions are partners of the University of Stirling on the current project.
- Between 2000 and 2003, the project had a purely research focus, designed to elucidate the current size of the bushmeat harvest and trade, the socio-economic status of hunters and consumers, the availability and price of alternative proteins and sources of income, the geographic location of trade venues and transport routes and the status of wildlife populations being harvested (the latter in collaboration with contemporary projects on wildlife population distribution and protected area evaluations in Gabon (WCS & DFC, 2002).

- The results of this project showed clearly that the current harvest and trade are unsustainable for most wildlife species. However, certain species, notably rodents and small antelopes may be candidates for sustainable harvest under strict controls. The socio-economic status of villagers in Gabon puts about 10% of the nation in a position of economic dependence on wildmeat, usually for its economic value rather than as a source of protein, though some families are still protein dependent on bush meat. The vast majority of the population uses bushmeat as a luxury commodity, for which high prices may be paid, but which is eaten rarely (Wilkie et al, 2004 in press). Wildlife populations in Gabon are generally declining (Walsh et al, 2003; Walsh & White, 1999; Walsh et al., 2001, DFC 2002) and measures to protect them are imperative if they are to persist, either for their intrinsic value or as a meat resource for the future.
- Political will in Gabon is to curb the current harvest and trade to sustainable levels, rather than to eliminate use of bushmeat. The traditional significance of hunting to now-urban families combined with the current economic status of at least some villagers prohibits a ban on hunting at this point in time, however, the unsustainability of present practice and the imminent loss of the resource is a serious issue that the government has shown willing to address.
- The current, extremely pressing, problem is that the government lacks knowledge of how to ensure sustainability of the harvest. They require advice on legal and economic levers that can be used to change practices, they require biological information on wildlife populations, they need public awareness of the issue to increase such that management actions are accepted and understood (especially when these are necessarily repressive of current practice), they require a monitoring programme to evaluate the efficiency of their management strategy and practice, and they require increased capacity amongst their staff to design and implement effective adaptive management for the future.

3. Project Objectives

- The present project is no longer a research endeavour, although clearly ongoing data collection on the state of markets, harvests and consumer practice are necessary. The major project goal is to bring the government to a point where its staff have the necessary data and know-how to manage Gabon's wildlife populations for their long term persistence, whether their policy includes a controlled harvest of some game species or not.
- Specific objectives are detailed in the originally accepted logical framework in Annexe 2. In summary they are to:
- identify and train a team of professional research staff who will monitor the use of wild life for meat on a national scale. This team will generate a database capable of identifying trends in the trade and thus highlighting where management change is needed, where management practice appears to be leading us towards stable, sustainable harvesting, and to inform the government of any resulting changes in local socio-economic standing which may have been effected by local management of the bushmeat trade (or which may conversely affect change in the trade which will require adaptive management).
- The project will train database managers, such that use of the data resource is as widespread as possible, making management decisions nationwide as well-informed as possible

- Training in database creation and use and the principles of adaptive management is being offered in all the tertiary education establishments currently training environmental managers in Gabon
- Public awareness campaigns are being designed and carried out to prepare the public for changes in management practices that concern hunting and bushmeat consumption, in order to, it is hoped, increase public acceptance of the necessary curbs to ensure sustainability of the remaining resource. The general understanding of publicity materials, and the attitude changes that are effected will be measured as far as possible.
- Neither the objectives nor workplans have been significantly modified since acceptance of the proposal by the Darwin Initiative.

4. Progress

- The project began in September 2003 with the recruitment of the 8 man monitoring team in Gabon, the technical advisor (Malcolm Starkey, Univ. or Stirling) and the set-up of a project management team in Libreville, Gabon (Dr. Kate Abernethy (team Leader), M. Daniel Idiata Mambounga (Ministry representative responsible for Hunting practices ‘Chef de Service de la Chasse’) and Mlle. Ernestine Ntsame Effa (local team coordinator), with an office in Libreville and a base for a computer in the Ministry (office of Daniel Idiata). During the latter months of 2003 the monitoring team completed their training and established workplans for the collection of data during 2004. M. Oliver Hymas (University of Stirling) was recruited in January to technically advise and manage this team. Contacts were established with the National Parks Service (Conseils National des Parcs Nationaux, CNPN), the two National Universities ‘Université Omar Bongo , UOB) and ‘Université des Sciences et Techniques de Masuku, USTM) and the Wildlife College ‘Ecole National de Eaux et Forêts, ENEF) in order to integrate database use and adaptive management teaching to the curriculum during this academic year. The first training courses were offered at all these institutions in March and April 2004 and in total 82 undergraduate students attended.
- The project has achieved its objectives for the period, with the one exception of the ‘training of trainers’ workshops, proposed for late 2003, early 2004. These workshops have been in part replaced by integrating permanent University staff to the teaching team on the student training courses and providing them with training materials for self-help later, however, we have found that in general, capacity within the existing institutional staff is not sufficient for them to benefit from technical training in database creation and use. The subject requires reasonably advanced levels of computer skills, which existing older staff simply do not have, due to lack of opportunity earlier in their careers. Very few of them are motivated to learn these skills late in their career, though they have been more than willing to support the specialist trainers provided by the project to come into their classrooms to teach. We are working with the institutions to identify ways of ensuring long term survival of database teaching within the biology curricula and we currently feel that investment in training students, followed by supporting specialist positions for new junior staff will be the best way forward. If successful, at the end of the 3 year project, we will have succeeded in training some junior staff during their student days, and supporting the institutions to provide them with posts (aid in grant getting, encouraging staff restructuring to encourage junior technical posts, and support to staff in reporting and budgeting to self-finance these positions), thus achieving the ‘training of trainers’ goal.

- In the 6 month report of 31 October 2003 we proposed a modification to the workplan to undertake a two-visit distribution of information leaflets on the project and the management issues surrounding the current bushmeat harvest and trade. Unfortunately this distribution has been reprogrammed for May due to difficulties in finalising translation and printing of the leaflets, and also to incorporate training of a local environmental education NGO in Libreville (ANCE), whose members came to us with a request for advice on appropriate channels for public awareness materials. We decided that to integrate them into the process of leaflet production and the following assessment of the public consumption and understanding of the information would help them to think about future methods and evaluation of their own work. However, in order to train them, we have needed to revise our own programme. As this activity was supplementary to our stated aims, its slippage by 2 months is not deemed to be problematic. The workplan in February returned to the original format.
- Technically the project team has worked most on developing a robust sampling plan to allow us to monitor market trade a socio-economic change in communities whose access to the bushmeat resource may change over the next few years, in response to either direct management actions, or the effects of the continuing uncontrolled over-harvest. The existing 3 year database derived by the Ministry supported research project 2000-2003 has been used to empirically test various sampling strategies and optimise the balance between accuracy and precision in detecting trends for minimal effort, allowing us to monitor the widest possible geographic spread. The most efficient sampling plan allowing comparison of market volume has proved to be a spread of approximately 120 random days over the year. However, this is logistically extremely burdensome and expensive. A set of 16 random weeks spread through the period to be sampled performs almost as well and where markets show no seasonality, a set period of 6 months continuous sampling again provides an equivalent probability of replicating the results from a continuous year. The best strategy for each market differs, dependent on the variability in market volume, which tends to be highest in smaller, rural markets than in the more stable urban areas with large geographic catchments and higher numbers of supply hunters and traders. At present, the best sampling strategy appears to be a random selection of week long or month long blocks, dependent on the logistical difficulty of travelling to the market from a base (Libreville or Franceville). Markets sampled in month long blocks will be sampled for a longer total period than week-long blocks.
- The team has also undertaken a long-term staff training commitment, which aims to train all members of the current monitoring team into specialist roles in order that they run the project independently by year 3. The seven members are currently trained in data collection in markets, socio-economic data collection within households and by questionnaire in public fora, but do not have expertise in project management, budgeting, fundraising, production of publicity materials, database management or scientific design. Whilst the project does not seek to replace or replicate basic education, the team members have been selected at varying education and experience levels with the vision that they will grow into the roles necessary for the project to function fully and independently after the Darwin Initiative support ends. Individual meetings were held with all staff after 6 months to discuss the duties necessary and those they felt most apt to undertake. Individual training is now being organised in
- Database management (Freddy Makiloutila, Ernestine Ntsame Effa and Daniel Idiata)

- Workplans and organisation (Sophie Pambo)
- Fundraising and project management (Daniel Idiata and Ernestine Ntsame Effa)
- Producing publicity materials (Kevin Ndong)
- Field team management and team leading in the field for socio-economic village surveys (Michel Mbazonga)
- Environmental education and training of market surveyors (Stevens Touladjan)

These ‘specialities’ are at present additional to survey duties, but it is hoped that the next year will see recruitment of new junior staff to carry out market surveys and the transition of the existing staff to these new tasks. The university and wildlife college teaching and student contact is an ideal situation for recruitment of survey team members, who will work in one – two year rolling posts to gain experience, whilst the permanence of the project is ensured by the ‘senior’ staff. This staffing plan should ensure project continuity, whilst continually building widespread support and understanding through low-level capacity building in a large number of graduates, who will participate in the project over the years.

At present the most serious threat to the project’s success is the lack of capacity in the current Direction de la Faune to logically focus on, take and implement management decisions. They are vastly understaffed, and even the existing staff has poor training in the scientific and technical skills required to use the research that is undertaken. The highest academic qualification held by the staff of the current Direction de la Faune is lower than a Master’s degree and most decision makers finished their technical training over 10 years ago.

However, the Direction is currently undergoing a full staffing review and restructuring, funded by the European Union (DGVIII) and the Ministry has submitted a proposal to the government for total review of its environment policy and instigation of a 25 year plan - the ‘Projet Sectoriel Foret Environnement’, whose development was funded by the World Bank through a pilot project and which will in its full form include funds from the Global Environment Facility, the World Bank, various NGO’s, Agency funding from the US and EU and will inject around US\$30Million into environmental actions over the 25 year period.

The biggest challenge to our project will be to ensure that bush meat management activities form part of the new environmental plan, and that the appropriate staff and competences required are funded. We are currently well placed to achieve this, with staff and office space inside the Ministry, and we have a further two years of funds to ensure that the project is a functional entity in itself, capable of providing the necessary data and interpretation over the long term. However, it is possible that support to the Ministry to ensure the new staff structure is appropriate will become one of the most important actions to undertake in the future two years.

<i>Project implementation timetable</i>	
Date	Key milestones
April-October 04	Team in the field collecting market data under the monitoring sampling plan Socio-economic surveys in rural areas..Continuation of database management in service training and production of information on request to environmental managers. Liaise with restructuring team in DFC to ensure bushmeat management issues are staffed. First training courses for USTM and ENEF students held.. Staff 'in-service training' meeting held and staffing plan determined for following year.
April 04	Finalise and distribute information leaflets in two-visit plan. Analysis and assessment of the level of public consumption and understanding, and thus the efficiency of this method of public awareness campaign. Plan of radio program series in the light of results of current public awareness of the issues.
May-June 2004	
July-August 2004	Training of DFC staff and project coordinator in PC publishing of printed publicity materials, using lessons learned from the first information series and 2 visit questionnaire.
August-Sept 2004	1 st year of BSc Student projects underway supervised by technical advisor, research assistant and DFC staff
October 2004	Second meeting of monitoring committee to look at and interpret last 6 months data and compare with 2003 data trends. Recommendations to DFC (and to Darwin) in form of a 1st working paper. Update of database for consultation in DFC.. Third report to Darwin. New academic year, evaluation of management curricula, project success and revisions of materials. First scientific publications planned.

5. Actions taken in response to previous reviews (if applicable)

- This is the first annual report.

6. Partnerships

- The collaboration between the UK and Gabon parts of the project has been unproblematic in terms of science and research, however administratively there have been some difficulties in collating reports and claims for funds. The project is implemented entirely in Gabon, however technical staff are UK based, as per Darwin Initiative normal practice. The collation of accounts between the two bodies is not inherently difficult, however unreliable communications, no postal service, and even unreliable courier services rendered the end of year submission difficult to administer in the 10 day timeframe allowed. This problem is unlikely to be solvable as it is imposed by UK government deadlines and will probably necessitate a trip to the UK to hand-carry accounts next year if we are to meet the requirements.
- The project has worked very successfully during the last 8 months with the original partners; Wildlife Conservation Society Gabon, the Centre International de Recherche Médicales de Franceville and the Direction de la Faune et Chasse and has also built new links with the government National Parks Office (CNP), the Universities and Colleges (who were not original partners on this grant, though their support had been canvassed before submitting the application) and new partnerships with the local NGO's Aventures Sans Frontières (ASF) and ANCE. The NGO's approached the project for help with their activities: ASF in relation to organising surveys for assessment of the marine turtle harvest around Libreville, and ANCE in relation to developing appropriate environmental awareness materials, as documented above.

- In addition, though not truly deemed partnerships, the project database has been consulted by researchers from the Institut de Recherches en Ecologie Tropicale (IRET) a government body attached to the Ministry of Higher Education and Research; the Peace Corps, Gabon; The European Union project DABAC – Developpement des Alternatives au Braconnage en Afrique Centrale; the Wildlife Conservation Society; the University of Cambridge; the University of Milan and the University of Florida.
- All these actors required information to guide management decisions, or policy decisions or put results of their research into context for recommendations on the conservation of wildlife in Gabon.

7. Impact and Sustainability

- The project is well-known within the environmental community in Gabon. The proof of this is regular consultation of the database by varied clients and the regular invitation of project staff to meetings on hunting policy reform and related issues. However, the project is less well known to the public at large. The publicity campaigns planned for the next 6 months, including the evaluation of their success and modification of future campaigns together with the training of a dedicated publicity officer to a permanent post will help to address this.
- The project is already looking toward an exit strategy in the design of its staffing and staff training programme and its relation with government. However at only 8 months old, this strategy is necessarily not finalised.

8. Post-Project Follow up Activities (max 300 words)

- Not applicable

9. Outputs, Outcomes and Dissemination

- 17B not fully achieved, due to technical and translation problems in producing publicity materials – rescheduled for May 04
- During the past 8 months we have developed public information leaflets on the current bushmeat harvest and trade and related issues. The series of A4 folded, full-colour leaflets describe :
 - 1) Why the current harvest is thought to be unsustainable and given examples of how this problem has also affected other countries and fisheries worldwide
 - 2) How the current differences in the socio-economic status of villagers and urban people affects their choices to hunt and trade bushmeat and how the price and availability of alternatives may also affect this
 - 3) How and where bushmeat is currently hunted and traded and which species are involved in different areas of the country
 - 4) The health issues involved in choosing to eat wild or domestic meat
- This series is currently in final revision for printing. As reported above we hoped to distribute the leaflets in early 2004, but delayed distribution to May 04 due to translation delay, and a subsequent rescheduling of staff time. This series will be available to the Ministry for reprinting, but it is unlikely that the series will continue beyond the project life, as its design is a one-off information shot.
- Teaching materials developed during the database use and adaptive management courses will be used for future years. Modification and updates may be

problematic, but if we are successful in the ‘training of trainers’ objective, this task will pass formally to these trainers as part of the terms of reference of their posts.

Table 1. Project Outputs (According to Standard Output Measures)

Code No.	Quantity	Description
4A/4B	40, 30, 12 = 82	Seventy 2 nd year undergraduate students (40 at USTM and 30 at ENEF) received a 12-hour intensive database and adaptive management principles training. Twelve students from USTM (top in an evaluation exercise) received a full week 40 hours) training in MSAccess database creation and use, and theory of developing a monitoring programme for the management of various wildlife issues
5	7, 4 = 13	Seven project staff received varied in service training in computer use, database design and field survey throughout the year; Four field staff were supported and learned navigational, mapping and reporting skills through the year.
6A/6B	2	Two Ministry staff allocated to the project received part time mentoring this year. Daniel Idiata = 12 weeks <i>pro rata</i> , training in MSAccess, project presentation, database use. Ernestine Ntsame Effa = 26 weeks <i>pro rata</i> , training in English (to present project in regional fora, computer training, statistics and reporting training, project management and accounting.
12A	1	Existing Research Database in place was enhanced for use by DFC & wider env. Community
/12B	1	Monitoring database established in DFC
17B		Not yet happened
extra		Permanent office established in LBV, annexe database in DFC

Table 2: Publications

Type * (e.g. journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (e.g. contact address, website)	Cost £
MSAccess guidance manuals in French	Informal user manual for creation and use of MSAccess databases suitable for biological monitoring	Unpublished	info@wcsgabon.org	Postage costs

data that may have been made up, or collected by a wrong methodology. These auto-checks will allow less academically qualified database/field team managers to identify some common problems in the data collection and entry and ensure a better quality result from database figures.

- The set-up of the monitoring database and enhancement of the existing research base has shown us that data quality checks are very necessary where staff cannot be fully supervised, and during learning periods where genuine mistakes can creep in. We have also learned that common mistakes leave 'signatures' in the data, which can be found, and the data revised and eliminated if necessary. Regular checking of the database, as well as realistic and adequate field staff supervision should minimise this sort of error.
- The staff structure within the Ministry is at present fragile, as staff are not well enough trained for the duties they should perform. The staff revision in the Ministry could help resolve this, but the project needs to remain high profile, helpful and cooperative to this reform process such that the bushmeat issue is deemed important and received proper staffing for the future.
- In general, both project and Ministry staffing structures need constant attention. As salaries within the Ministry as guaranteed by Government funding, long term in-service training and mentoring programmes are more important to ensure than staff funding at this time.

12. OPTIONAL: Outstanding achievements of your project during the reporting period (300-400 words maximum)

■ **I agree for ECTF and the Darwin Secretariat to publish the content of this section**

There have been no exceptional achievements in the first 6 months of the project (no disasters, either though!)

Annex 1 Report of progress and achievements against Logical Framework for Financial Year: 2003/2004

Project summary	Measurable Indicators	Progress and Achievements April 2003-Mar 2004	Actions required/planned for next period
<p>Goal: 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 the benefits arising out of the utilisation of genetic resources 			
<p>Purpose <i>To enhance the capacity of the Gabonese government to manage the bushmeat trade to maximise long-term wildlife survival as well as the sustainability of local traditional livelihoods</i></p>	<p><i>Network of monitors in bushmeat markets established and data used iteratively in adaptive policy development via regular evaluation workshops.</i></p> <p><i>Module in 'Research for Natural Resources Management' for ENEF, and USTM developed.</i></p> <p><i>Policy-oriented research on bushmeat issues carried out by the government, results publicly available in a user-friendly database.</i></p>	<p><i>Monitors are operational and collecting appropriate data for long term monitoring of bushmeat harvest, consumption and trade. A Monitoring Committee has been approved within Government which will assess and use these data for management strategies.</i></p> <p><i>The teaching module has been approved in these two colleges and initial teaching visits have been made to prepare for integration to the curricula in 2004-5.</i></p> <p><i>The Government has expressed willing to support policy-based research and the project has been given office space in the Ministry for the database. Three Ministry staff have received training in database use.</i></p>	<p>Work on convening the Monitoring Committee and empowering them to use the data to guide management decisions. Depending on Committee members, this may mean financial and logistical support to attend meetings, provision of published outputs for local awareness, coaching in understanding of data significance, lobbying for and facilitating inter-ministerial cooperation on enforcement policies.</p> <p>Continue training as widely as possible within Ministry staff such that database use is maximised.</p>

Outputs			
<i>Nation-wide data on the volume, economics and geographic distribution of the bushmeat trade available to policy makers</i>	<i>Database of trade and socio-economic monitoring data established and managed within the DFC. Regular workshops held to interpret results.</i>	Database is established within the DFC and project office in LBV. First Management Monitoring committee meeting planned for September 2004	Continue to support meetings of the management committee and facilitate use of results in policy
<i>Training module for ENEF established</i>	<i>One module taught in academic years 2003/04, 2004/05 and 2005/06.</i>	Forty students from ENEF took part in training on policy development using the database, but did not give individual presentations.	Integration of new teaching to the University curricula will take up to two years. However, extra curricular teaching can happen at any time. Student attendance at extra curricular events was high and we plan to continue extra curricular teaching in 2004 and integrated curricular teaching from 2005 onwards.
<i>Policy oriented training relevant to managing the bushmeat trade completed by ENEF students</i>	<i>At least 12 students undertake bushmeat-relevant research projects and give both written and oral presentations of policy implications of research results to policy makers</i>	Twelve students from the Science University (USTM) undertook a training course in Database management and analysed and presented implications of data from the existing database.	As above
<i>Research results communicated to policy makers and public Posters, leaflets and videos produced nationally and internationally that report research results and contemporary policy</i>	<i>Posters displayed in prominent locations. Leaflets distributed in major cities. Videos shown on national television</i>	Information leaflets developed for distribution in May 2004	Translation of public awareness documents is a particular skill that requires more specialist attention that the translation of formal letters of documents. We need to identify and train a translator in our particular needs and approach to ensure public consumption of the

			<p>information.</p> <p>Political sensitivity to the bushmeat issue prohibits current TV documentary on the issue. We are working through the WCS Gabon communications department to develop a programme format acceptable to the government (no independent channelling exists) for 2004.</p>
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Note: Please do NOT expand rows to include activities since their completion and outcomes should be reported under the column on progress and achievements at output and purpose levels.