# *Darwin Initiative Annual Report*

**Important note:**

*To be completed with reference to the Reporting Guidance Notes for Project Leaders: it is expected that this report will be about 10 pages in length, excluding annexes*

**Submission Deadline: 30 April 2011**

## 1. Darwin Project Information

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| **Project Reference** | 17028 |
| **Project Title** | Conserving the Ruipa corridor: facilitating cohesive management between diverse stakeholders |
| **Host Country/ies** | Tanzania |
| **UK contract holder institution** | Society for Environmental Exploration / Frontier |
| **Host country partner institutions** | University of Dar-es-Salaam |
| **Other partner institutions** | |
| **Darwin Grant Value** | £128,735.00 |
| **Start/end dates of project** | 1st July 2009 – 1st July 2012 |
| **Reporting period (eg Apr 2010 – Mar 2011) and number (eg Annual Report 1, 2, 3)** | May 2010 – Apr 2011, annual report number 2 |
| **Project Leader name** | Andrew Bamford |
| **Project website** | www.frontier.ac.uk |
| **Report authors, main contributors and date** | Mr Andrew Bamford, Ms Danniella Ferrol-Schulte, Dr Zoe Balmforth; 30 April 2011 |

## 2. Project Background

The Kilombero Valley is situated between the Selous Game Reserve and the Udzungwa Mountains and is an integral part of the Greater Selous Ecosystem (WWF 1992). The valley is of national importance to conservation and water management (WWF 1992), is a migratory route for many large mammal species, and was designated as a Ramsar site in 2002. It is also home to one of the largest individual populations of the puku antelope (*Kobus vardoni*), one of only two populations in Tanzania (Starkey et al. 2002, Bonington et al. 2009).

However, the valley has little or no protected status, with parts receiving marginal protection as a Game Controlled Area (GCA) and as Forest Reserves. Immigration has proliferated over the past decade due to the fertility of the region, the availability of grazing land for pastoralists and increased infrastructure through the area, including the TAZARA railway. This has led to extensive habitat fragmentation and degradation which has closed the majority of traditional migratory routes for large mammals within the last twenty years, leaving only two remaining viable corridors between Selous and Udzungwa: the Nyanganje Corridor and the Ruipa Corridor (Jones et al, 2007). In addition, during the wet season, when the valley is flooded, there are few remaining refuges for wildlife on higher ground, leading to increased incidences of human-wildlife conflict.

Preliminary work carried out by Frontier-Tanzania (FT) in 2006-2008 indicated that the Ruipa Corridor had suffered extensive human encroachment and habitat degradation but despite this is still used by migratory species, as well as being an important site for biodiversity within the Valley (FT 2008). However, unless decisive action is taken, ongoing habitat degradation could result in a complete loss of connectivity between the ecosystems within only a few years (Jones et al, 2007). This will be devastating to the populations of large mammals as well as to the unique biodiversity found within the valley. Furthermore, if migration routes are disrupted this will exacerbate human-wildlife conflict in areas around the former routes (Jones et al, 2007; FT 2008).

The Corridor has a complex matrix of stakeholder ownership with villages in two districts, Kilombero District and Ulanga District; private land ownership by the Kilombero Valley Teak Company (KVTC) and Kilombero Valley Farms; a GCA managed by the Wildlife Division; and hunting blocks on the boundary of the Selous Game Reserve and in the GCA managed by private hunting companies. The Frontier-Tanzania Ruipa Corridor project was undertaken to establish collaboration amongst stakeholders in order to reduce negative anthropogenic impacts and prevent the loss of the area's biodiversity and major large mammal populations.

The Frontier-Tanzania Ruipa Corridor base camp is situated in the village of Igota in Ulanga District, having been relocated from the previous site in January 2011. The camp is on the main road between Ifakara and Mahenge, and is approximately 25 km from the boundary of the Selous Game Reserve. This is an excellent location from which to base the project's increasing focus on stakeholder engagement and land planning, while still allowing ecological monitoring work from the previous year to continue.

This second year of the project has concentrated on: (i) completing ecological and socio-economic surveys and disseminating the results of these; (ii) building stakeholder capacity to manage and monitor natural resources (through education events and formal training); (iil) holding workshops to involve villagers in the land planning process and to build collaboration between all parties; and (iv) starting the land planning process for selected villages.

## 3. Project Partnerships

The Society for Environmental Exploration (SEE) / Frontier has a long-standing relationship with host country partners at the University of Dar es Salaam (UDSM). The University is surveying and mapping the flora and fauna of Tanzania, and is conducting research into the maintenance and improvement of the environment and the sustainable exploitation of Tanzania's natural resources. SEE and UDSM have been conducting collaborative research into environmental issues since July 1989 under the title of Frontier-Tanzania, one component of which is the Tanzania Savanna Programme, based in the Kilombero Valley. SEE / Frontier have continued to report on the Ruipa Corridor Project's findings to the university, who have remained very supportive of the programme and have continued to offer technical advice and guidance. Regular meetings have been held between Frontier-Tanzania's in-country team and contacts at UDSM. Following the retirement of Prof Kim Howell at the end of 2010, UDSM nominated a new contact, Dr Flora Magige. Dr Flora Ismail has been an important UDSM contact for many years and remains so.

Relationships between SEE and UDSM are managed through a combination of emails and telephone communications, together with face-to-face meetings as often as possible. SEE's UK-based Managing Director of Research and Operations, Dr Zoe Balmforth, met with Dr Flora Ismail in Dar es Salaam in April 2011. This meeting included discussion of SEE's ongoing scientific activities and established of a plan for even closer working between the two organisations over the forthcoming year.

Relationships between the project's field-based staff and SEE's London HQ are managed largely via email, including weekly situation reports, and regular telephone calls. In addition, London HQ staff have made two field visits to the project site during the reporting period, in August 2010 and in April 2011.

The management structure of the project has remained the same over the reporting period, although some of the personnel involved have changed. The team of UK and Tanzanian staff has continued to be permanently based at the field camp in the Kilombero Valley throughout the duration of this reporting period. The Project Leader, Andrew Bamford, has been based at the field camp throughout, in order to ensure effective leadership of the project. Andy has held overall responsibility for the project, its activities and staff in the field. He has been supported on camp by Danni Ferrol-Schulte (Senior Research Officer) whose responsibilities have included the management of socio-economic survey work, interactions with local villages, environmental education and research assistant training and management. Tanzanian community-liaison officers, Sebastian Ngasoma and Nizar Kilale, both continued to work on the project by conducting socio-economic and ecological data collection, helping with translation for socio-economic surveys, and assisting with village meetings and workshops.

In SEE's UK Head Office, Sam Fox was the Project Manager with overall responsibility for managing SEE's involvement with the project (in terms of facilitating logistics, resources, staff, equipment, historical data and information, external contacts and any other operational aspects) until January 2011, at which point Dr Zoe Balmforth took over this role. Dr Elise Belle was the Project Coordinator (overseeing the scientific aspects of the project, including the methodologies, data analyses, report writing and publication of scientific articles) until January 2011, at which point she was replaced by Samuel Lloyd. Eibleis Fanning, who is SEE / Frontier's Director, continues to provide technical advice as required. Support on all logistical and scientific aspects of the project continues to be provided by additional staff in SEE's Head Office, including the Overseas Operations Manager, Charlotte Lyddon.

### Other in-country collaborations

Frontier-Tanzania has continued the long-standing working relationship with the Kilombero Valley Teak Company (KVTC). As the major private landowner in this area it has been vital that KVTC cooperate with the project's aims and they have continued to demonstrate their willingness to ensure their land is managed sustainably. They have also provided data such as GIS maps and weather data and their advice and support in terms of logistics and regional advice has been much appreciated.

Frontier-Tanzania has worked with the Ulanga District Office throughout the project's duration and this working relationship is now close and extremely effective. Numerous meetings have taken place between various District Council staff and the Project Leader and other Frontier staff. The District Council have also played a key role in a number of village workshops and feedback sessions. They remain enthusiastic about the project, and have committed to be heavily involved in finalisation and implementation of land management plans which are now in the process of development.

The Wildlife Conservation Society of Tanzania (WCST) was committed to be involved in village workshops held in early 2011. However, due to circumstances beyond their control (a car crash while driving from Dar-es-Salaam to Ulanga District) they were forced to withdraw at the last moment. They remain a positive contact and a potential future collaborator.

Project staff held a number of meetings with the Belgian Technical Cooperation (BTC) to discuss the progress of the latter's project, which aimed to develop and implement an integrated management plan for the Kilombero Valley Ramsar Site. BTC had previously developed management plans for several of the villages in the Ruipa Corridor area. However, following a review of their project, BTC's funding has been withdrawn and the project closed down before an integrated management plan had been completed and before a number of the village plans had reached final draft stage. The status of the plans under development by BTC is currently uncertain. This inevitably impacts on the work of Frontier-Tanzania in the region, and on the Ruipa Corridor project, most notably by making our activities all the more crucial to conservation in the region.

During 2010 Frontier re-established contact with Wild Footprints Ltd., a private company that operates in the hunting blocks within the Ruipa Corridor area. Wild Footprints have ceased all commercial hunting activities on the land they manage (due to land degradation and encroachment), but do maintain a skeleton staff at their two camps, and continue to carry out anti-poaching patrols.

Perhaps the most important collaboration is that between the project and the local village communities. This has been an integral and extremely successful part of the project's development and has been further strengthened by the camp move to Igota Village. Local communities are a pivotal part of the success of activities relating to land planning, awareness raising and capacity building and as such the excellent relationships between all key villages and this project make long term success all the more likely.

The project currently does not have a strong link with the CBD focal point; however, the project is contributing significantly towards the implementation of the Convention. By compiling a full technical report of findings based on data collected in and around the Ruipa Corridor over the last few years the partnership is able to support local villages, the district office and private landowners by providing the information and resources needed to address Article 10 (sustainable use of components of biological diversity). This was achieved by the end of 2010 (report available on request or online), and management planning has since been a participatory process to ensure long-term implementation and sustained collaboration between stakeholders. Capacity building of local communities is extensive and ongoing, and in 2010 included village environmental education workshops and BTEC training for district officers and villagers. Such capacity building and awareness raising activities will greatly improve the chances of successful long-term implementation of management plans. Through such training and education activities, the project will aid in the implementation of the CBD with respect to article 12 (scientific and technical education), article 7 (identification and monitoring of biological diversity) and article 13 (public education and awareness).

## 4. Project Progress

### 4.1 Progress in carrying out project activities

***Output 1*** *Significantly improved knowledge of the Ruipa Corridor, in terms of biodiversity, large mammal migration and land-use, disseminated to stakeholders and scientific community.*

**Activity 1.1** Ground surveys to map large mammal movement through the corridor.

Frontier-Tanzania has been monitoring large mammal activity in the Ruipa Corridor since January 2008 by means of a grid of twenty-four permanent strip transects. Along each of these transects, all tracks and signs of large mammals are recorded in a strip 2 metres wide and 500 metres long. Transects were

surveyed every 3 months until the end of 2010, making 12 surveys of each in total. The resulting dataset has enabled in-depth analysis of mammal biodiversity in the corridor area, including the spatial distribution of different species in relation to land use, temporal trends in abundance, and large mammal movements. Additionally, line transect surveys for signs of large migratory species (elephant and buffalo) were carried out over a larger area throughout 2010 to assess the broader spatial distribution of these two species. Line transect surveys can also be used to validate the patterns recorded in strip transect surveys.

The data collected during these surveys were analysed and collated into a report on the status of the Ruipa corridor (Bamford, Ferrol-Schulte and Smith, *The status of the Ruipa Corridor between the Selous Game reserve and Udzungwa Mountains*) which was published by Frontier in November 2010 and is now freely available for download from the Frontier website (Means of Verification, Output 1). This report was distributed to all of the project's stakeholders, both local and national (Means of Verification, Output 1), and to other interested parties. Several manuscripts based on the results are also in preparation and will be submitted to peer-reviewed scientific journals. Survey results were also presented in village workshops (Activity 1.3, see below).

Between May and August 2010 specific surveys of elephant and buffalo were also conducted to the southeast of the Kilombero River, in order to answer some remaining questions about the movement of big game in the region. It was known that large migratory mammals are still abundant in various parts of the corridor, but it remained unclear whether they were still crossing certain areas, particularly the main Ifakara-Mahenge road. Results of these surveys are included in the above report.

The various ecological surveys conducted under this activity indicate the continued abundance of a number of large mammal species in several areas of the Kilombero Valley, including the Ruipa Corridor. Our data also show that large scale movements of large mammals still occur, particularly to the west of the Selous Game Reserve into the Wildlife Management Area that borders it.

However, the combined results of our ecological surveys and village interviews suggest that large mammals are probably no longer able to cross some of the most degraded parts of the corridor, particularly the strip of land bordering the main Ifakara-Mahenge road. Although some interviewees did suggest that elephants still cross the road, most reported that they have stopped doing so. Many residents suggested that this is a recent development and our ground surveys indicate that it is the result of severe habitat degradation along the road. It thus appears that the Ruipa corridor may now be closed as a migration route. Several other points in the corridor route were also identified as severely degraded and subject to high levels of human disturbance, most notably much of the Kilombero Game Controlled Area. Despite this, however, there remain areas of relatively undisturbed habitat that are home to notable populations of large mammals. Over 25 species of large mammal were detected in the area bordering the Selous Game Reserve. The abundance of elephants close to the Selous showed strong seasonal variation, peaking in July. Similarly, elephant abundance just outside of the Udzungwa Mountains seems to peak in April – May (see technical report for detailed analyses). These results suggest that an attempt at seasonal migration is still made, and the continued presence of large areas of good habitat along the corridor means that there may still be a chance to restore it, or at least to protect the remaining mammal populations within it. Even if the corridor is no longer quite open, it continues to support important, large wildlife populations and significant biodiversity. The development of better strategies to manage land and resources in the Kilombero Valley is thus no less important.

Our ecological survey results indicate that the route used by large mammals for attempted seasonal movements is now further south than the area covered by the 24 transects used for long term monitoring. Surveys of these transects were thus conducted for the last time at the end of 2010, and a new transect grid was established at the start of 2011 which is within the most likely and most viable corridor route. This new grid will be used for post-project monitoring. Candidate villages for land planning (Output 2) were also selected on the basis of this information, to ensure that the lands covered by the new plans are within the most recent and viable corridor route.

### ***Output 2*** *Comprehensive Management Plans designed by Frontier-Tanzania for the Ruipa Wildlife Corridor with the participation and agreement of each of the key stakeholders, based on updated knowledge of Corridor biodiversity and threats, operational by April 2010.*

### **Activity 3.1** Gathering of biological and socio-economic data to inform the development of management plans

Gathering of biological data is discussed under Activity 1.1 (above), and was complete by the end of 2010. Our results were used to identify which villages should be included in land planning activities.

Socio-economic data were collected throughout 2010, continuing from the surveys reported in Annual Report 1 (April 2010). A total of 313 household interviews were conducted in 13 villages, using a

specifically designed questionnaire (attached at Annex 3). All 13 villages are located in the corridor area. Village council representatives from all 13 villages were also interviewed in semi-structured interviews. A flaw in previous socio-economic studies has been their inadequate coverage of pastoralist tribes, who, due to their tendency to live at low densities towards the outskirts of villages, are not adequately represented in household surveys. To overcome this, three focus groups were conducted with residents belonging to the pastoralist Sukuma tribe, who were targeted because of their marked and rapid immigration into the Kilombero Valley.

All biological and socio-economic data were analysed and collated into a report (Bamford et al. 2010), which was distributed to all of the project's stakeholders (Means of Verification, Output 1). Data were also presented directly to villagers during workshops held in November 2010 and February 2011 (Activity 1.3, below).

Results of the socio-economic surveys show very high rates of immigration into the area, with only 57% of respondents having lived in the Kilombero Valley their entire lives, and a quarter of respondents having migrated to the area within the past 5 years. Most immigrants reported moving to acquire land. All respondents were subsistence farmers, who generate any income they do have by selling crops or working on other farms. Natural resources were considered important by the majority of respondents (78%) but wildlife specifically was only considered important by 20%. Many of the villages have areas designated as Wildlife Management Areas, gazetted in land management plans created at the District level, and these should in theory allow for sustainable hunting and therefore access to bushmeat for the villagers. However, our surveys indicate that in practice hunting is carried out by the District Council (as villagers tend to lack the means) and that the resulting meat is not reaching the villages.

Socio-economic surveys revealed the issues that are of key importance to local communities in the area and as such have informed the approach used to initiate land management planning. Many interviewees (89%) stated that they were unaware of existing management plans, which inevitably makes implementation and enforcement less effective. Without involvement in land management planning from village councils and villagers, and grass roots commitment, the people who use the land will not be appropriately educated or committed to their land management plans, limiting effectiveness and typically resulting in open-pool resource access and depletion. We have thus made our own approach to land planning as consultative and inclusive as possible.

### **Activity 3.2** Consultations held in villages to enable the development of management plans for village owned forest

Meetings were held with the village councils of 13 villages in the corridor area throughout 2010 and early 2011 (reports attached, Annex 3; Means of Verification Output 3). Nine of these villages were included in a project run by the Belgian Technical Corporation (BTC), which aimed to develop an integrated management plan for the Ramsar site, and as such were to have management plans developed as part of that initiative. Consultations with these nine villages were held to determine what aspects of the process of developing land management plans it was felt could be improved upon.

In a meeting with BTC representatives, it had been discussed that Frontier should be involved in the development of these plans as the BTC integrated plan was likely to include provision for the preservation of wildlife corridors. However, BTC then created the village plans without any external consultation (including inadequate consultation with the villages themselves) and the BTC project has since been closed down prematurely by its donors. This happened recently (early 2011) and before an integrated plan had been written. Many village plans that were part of that project remain in an incomplete state and of uncertain status.

A key outcome of the consultations held with all 13 villages was the need for clear village boundaries to be established *before* the land management plans were developed. A lack of clarity over boundaries has been a major problem with previous plans and is a key factor in subsequent ineffective implementation. For example, the surveys and workshop discussions that we conducted indicate that the lack of clarity and agreement over boundaries has lead to village councils giving permission for farmers to occupy land that is in fact part of another village. This makes it extremely difficult for individual village councils to monitor and control land-use within their own areas. Some village councils also commented on a lack of enforcement of boundaries and by-laws (particularly in relation to extraction of forest resources) by District Councils. Previous land management plans have been developed using a top down approach, with villages then expected to implement them. However, our consultations suggested that very few villagers know about existing plans, and implementation is therefore unlikely to be successful. A more consultative and inclusive plan development process should mitigate this problem.

Our ecological survey data (Activity 1.1) suggest that the most recent, viable corridor route is in fact located slightly to the south of the area BTC were working in, and so the decision was made to focus on four villages in this area. These four villagers were not involved in the BTC land plans and hence were

not affected by the failure of that project. The decision was made in early 2011 to relocate our field camp to one of these villagers, Igota, to facilitate community involvement with the project's activities, particularly the land planning process.

Further discussions of existing and forthcoming land plans were carried out during village workshops in February 2011 (Activity 1.3, below). Representatives from the District Councils were present at these workshops, which gave village councils the chance to question District officials on the logistics of the land planning process and their rights and involvement. Ulanga District Council have past experience of writing land management plans for external donors (such as KVTC and BTC), and will be involved in the process of developing Frontier's management plans. Several meetings were held between Frontier staff and District Council representatives to discuss the process of developing plans, in order to clarify who would be responsible for which aspects of the process and how mistakes made in previous attempts by other donors can be avoided.

A further meeting was held in April 2011 (report attached, Annex 3; Means of Verification Output 3) between the four key villages and the District Rural Land Use Planning Officer (RLUPO), at the request of Frontier-Tanzania. The aim of this meeting was to provide village leaders with the opportunity to air and discuss issues surrounding boundary disputes, which were identified as a barrier in previous land planning attempts. The RLUPO brought maps to the meeting, and this was the first time village leaders had been able to see a visual representation of their areas. The atmosphere at this meeting was electric, as community leaders began to see and understand the shape and relative positioning of their village lands. The result was a much better understanding of boundaries and a resounding agreement to abide by the divisions that the District will set as part of the new plans. After this meeting, Idunda, Ikungua, Igota and Kichangani arranged village assembly meetings to inform their village councils of what had been discussed and to gather support for the resolution of village boundary disputes, as well as to identify two village representatives to take part in land planning data collection. Our presence was requested as external experts (rather than to chair or lead the meetings) and we arranged for the RLUPO to also attend, with maps of village areas and boundaries. After the village assemblies were dismissed, village councils held public meetings to inform residents of what had been decided at the village council level, to provide an open forum for questions or suggestions, and to choose two official village representatives for land planning activities.

### **Activity 1.2** Development of management plans for key stakeholders

Following consultations with, and between, village councils and District Council representatives (Activity 3.2, above), the process of developing land management plans was started in earnest in the first quarter of 2011. While the status of the BTC plans remains uncertain, a decision was made to focus on four villages that are not covered by the BTC project, and which our data (Activity 1.1) shows are located in the most likely route for the wildlife corridor. A meeting attended by representatives from all four village councils and the District Council was held in April 2011 to outline the process that will be followed in developing the plans and to begin the process of agreeing on village boundaries (report attached at Annex 3). All four villages agreed to contribute two people to help with data collection and mapping, which forms a key component of the planning process. Importantly, villagers agreed to contribute these man-hours at their own cost, which is extremely unusual in Tanzania (usually villagers request per diems for the time spent away from their farms). This indicates a real commitment and sense of ownership among the local communities with regards to the new plans, which is something this project has invested heavily in developing. Land planning is much more likely to be successful under such integrated ownership and high levels of collaboration.

All four villages have subsequently held meetings of their entire councils to inform them of the process, followed by public meetings to inform villagers of the upcoming work. An additional meeting was held by the councils of three of the villages to discuss issues relating to the boundaries of Ikungua village, which was designated as a village in 2010 after splitting from Idunda and which also borders Kichangani. Ulanga District Council (UDC) have assembled a work team to assist with the development of the plans, and a contract between Frontier and UDC has been drafted, agreed to and signed by both parties. Unfortunately, a set-back occurred in April when the area was hit by flash floods. This event has delayed data collection and mapping (the first stage of land management planning) because access to large parts of the area became almost impossible even with a 4WD vehicle. Frontier, UDC and all village councils have therefore agreed to postpone the process until June/July 2011. Given that all villagers are well informed and ready to participate and UDC have signed a work contract, it is unlikely that the weather-related delay will have any significant long-term impact on the project's outcomes.

Management plans for private land owners in the corridor area have proven more complicated. Two private companies in the corridor area, KVTC and Wild Footprints, already manage their land in a way that is consistent with the preservation of the corridor, and we do not feel that any changes need to be made to their management practices. The major problem relating to these two companies is the extremely negative attitude of many village residents towards them, an attitude that appears to arise

largely from lack of understanding regarding the companies' operations. The remaining private companies in the area are now apparently defunct and do not manage their land at all. A second hunting company, Bundu Safaris, has not been seen in the area since 2008 following the death of their owner, and their base camp was burnt down in early 2011. Kilombero Farms likewise no longer operate in the area, and their land is now occupied by subsistence farmers.

***Output 3*** *Environmental awareness raising and capacity building aiming to mitigate human-wildlife conflict through initiation of sustainable deterrent activities; and develop alternative income-generating activities to reduce dependence on forest resources*

**Activity 1.3** Capacity building workshops aiming to mitigate human-wildlife conflict

Capacity building workshops were held in November 2010 and February 2011, using a different approach each time. The first round of workshops were informal: Frontier staff set up a stall in the centre of each village, and presented information in a variety of formats, including a poster in Swahili that was specifically produced for this purpose (English version attached at Annex 3; Means of Verification, Outputs 2 & 3). The poster summarised research carried out by the project (i.e., Activities 1.1 and 3.1), including issues that had been raised by villagers during socio-economic surveys. At these events, project staff talked to interested passers-by about the project, its activities and its findings to date, and answered any questions they had. When a large enough crowd had formed, talks on sustainable use of natural resources and problem animal control were given, and further discussions on these subjects were encouraged. Village councils were approached prior to the event to obtain permission, and in several villages council members were then involved in the workshop. Villagers who had received training from Frontier (Activity 2.1, below) attended workshops where possible and gave talks on their experiences working with the project, including what they had learnt and how they felt this would help them. After the event, a copy of the poster was presented to each village council for display in their offices. Eight villages, all in Ulanga District, were covered by these informal events. Turnout varied from 20 to 60 people. Staff from the Wildlife Conservation Society of Tanzania (WCST) were present at two of the workshops as observers. Issues raised in the discussions included an urgent need to deal with the large numbers of pastoralists moving into the area, a desire to learn sustainable methods of problem animal control, and a more general desire to be taught about ecosystems, conservation and sustainable resource use. A report of these 2010 workshops is included at Annex 3 (Means of Verification, Output 3). The workshops were deemed a huge success and they unearthed an impressive level of enthusiasm for education in conservation and sustainable use amongst the public in each village. Village councils showed a keen interest in the findings of the Darwin Initiative Project.

The second round of workshops, held in February 2011, were more formal affairs to which representatives of village councils and District Councils were invited. Three workshops were held, each covering three or four villages; two in Ulanga District, hosted in Lupiro and Igota villages, and one in Kilombero District, hosted in Mofu village. From each village, the chairman, environmental committee executive officer and the chair of the environmental committee were invited to attend, along with representatives from the relevant District Council, including the wildlife officer, land officer and community development officer. All workshops were held in an open location in the centre of the host village and other villagers were encouraged to attend. WCST had been contracted to facilitate the workshops; however, due to a car crash their staff were unable to attend and the workshops were organised and run (highly successfully) entirely by Frontier-Tanzania staff.

Workshops began with a talk, given by Frontier staff, on Frontier's history, the aims of the Ruipa Corridor project and a summary of the research conducted to date. Next, District Council representatives each gave a short talk on their role and the activities they had previously undertaken relating to land use and wildlife issues within the district. Finally, discussions were held, facilitated by Frontier staff, on several topics such as methods of problem animal control, forestry management, wildlife management and land management plans. In the cases of the Mofu and Lupiro workshops, the discussion on land management plans focused on the plans developed by BTC for these villages; for the Igota workshop, which covered the four villages Frontier will develop plans for (Activity 1.2 above), the discussion covered what the people of these villages would like from the new plans. Discussions of human-wildlife conflict included advice on sustainable, non-lethal methods of animal control, and on the types of methods that are illegal. All invited council representatives attended. The maximum numbers of people present varied from 50 in Lupiro to nearly 200 in Mofu, but the total number of people attending throughout the day will have been much higher (as people tended to come and go throughout the day). A report has been prepared on these workshops (attached at Annex 3, Means of Verification, Output 3). This report is in the process of being translated into Swahili by project staff and will then be disseminated to stakeholders.

**Activity 2.3** Levels of anthropogenic activities monitored post-project by Frontier-Tanzania

Post-project monitoring will focus on the area of the corridor in which Frontier is making changes to land management plans. Monitoring of this area for large mammals began in early 2011 following the completion of wider surveying. The latter had provided a dataset sufficient to provide evidence of which village lands are covered by the most recent and most viable corridor route (Activity 1.1 above). Monitoring of the area selected for land planning will continue throughout the development of the plans, providing a dataset that will allow comparison before and after land-plan implementation. Monitoring will be extended to include the other natural resources that communities place value on, including medicinal plants and timber.

***Output 4*** *Training of representatives of key stakeholders (Village Environmental Committee, government officials, private land-owners) in monitoring techniques*

**Activity 2.1** Training of stakeholder representatives in biodiversity monitoring

During November 2010, 11 people undertook a two week BTEC training course with Frontier. Eight candidates came from villages in Ulanga District, two were game scouts from Ulanga District Council, and the remaining candidate has worked for Frontier for a number of years as a community liaison officer. All candidates successfully completed Frontier's BTEC qualification in Tropical Habitat Management, which is accredited by the EdExcel examinations board. Certificates were distributed in April 2011. The EdExcel invoice is attached at Annex 3 (Means of Verification, Output 4).

Nine villages were approached to send a representative; only one declined, stating that no-one was prepared to be away from their farm for two weeks. KVTC and UDSM were also invited to send representatives but declined, stating that no suitable candidate was available.

The candidates stayed on the Frontier base camp for the two weeks of training. Training focused on the large mammal monitoring that has formed the basis of Frontier's research in the Ruipa corridor area (Activity 1.1), but also covered methods for surveying other animals. All candidates were highly enthusiastic about the course and many requested further training, especially in the use of GPS units. The latter was provided on an ad hoc basis on camp.

It is worth noting that the majority of the candidates were aware of the problems affecting their environment, from large-scale immigration of livestock keepers to uncontrolled burning. Many were keen to find solutions to these problems and to use their new skills to better protect their local environment. Many also stated that they wished to pass on what they had learnt, especially to their village councils. Should they be successful, this would set up an environmental-monitoring taskforce along a large section of the Ruipa Corridor.

**Activity 2.2** Annual surveys with stakeholders

After receiving the training outlined under Activity 2.1 (above), the successful candidates have retained close ties with Frontier and have been involved in fieldwork wherever possible. Several have taken part in large mammal transects over the interim months. All candidates are keen to use their skills to help protect their environment. As yet no formal annual surveys have been conducted, the best time for the first of these probably being immediately after the rainy season, in June or July 2011.

## 4.2 Progress towards project outputs

***Output 1*** *Significantly improved knowledge of the Ruipa Corridor, in terms of biodiversity, large mammal migration and land-use, disseminated to stakeholders and scientific community*

This output, which was the main focus of the early stages of this project, is now mostly complete. Data collection was carried out throughout 2010, and the resulting dataset was analysed in detail. Results were presented in a report that is available online and that was distributed to local stakeholders. Additionally, a poster was produced summarising the data and information collected (including both ecological and socio-economic information), and this was distributed to villages (Annex 3). Frontier staff also gave talks on the research results during village workshops in November 2010. At present no manuscripts have been submitted to peer-reviewed journals due to time constraints (completing field activities has thus far been the focus), but several manuscripts are planned. An abstract was submitted (in collaboration with Trevor Jones of the Udzungwa Ecological Monitoring Centre), to the Association for Tropical Biology and Conservation (ATBC) conference that will be held in Arusha in June 2011. This has been accepted and Frontier-Tanzania will therefore be presenting a paper on the findings of the Darwin Initiative Project at that conference.

Information on land use was gathered during ecological and socio-economic surveys that were conducted throughout a large area during 2010. Results are included in the above report and have therefore been disseminated to stakeholders. Further key land-use data will be gathered as part of the mapping phase of land management planning. This was delayed due to adverse weather conditions but will commence in the 2nd quarter of 2011. Frontier staff will assist the District with collection of these data.

Sadly, the main finding of the research conducted by this project is that the Ruipa corridor is unlikely to currently be 'open' as a viable, full migration route. Parts of the corridor, most notably the Kilombero Game Controlled Area and the Namwai Forest, are visibly very badly degraded. The main cause of this degradation is the rapidly increasing human population in the area, particularly the large numbers of pastoralists moving into the GCA, and the associated high rate of land conversion. There is, however, excellent evidence (gathered by this project) that large populations of big game still inhabit significant areas of habitat along much of the corridor route. Our results also provide evidence that large mammals do still attempt a seasonal migration along this route, but are unable to cross some of the more badly degraded areas (in particular those along the main Ifakara-Mahenge road). Our data have also demonstrated that the most likely, and most recent, route for the corridor is slightly further to the south than previously thought. As a result, land planning will focus on these more southerly lands, and thus on the areas most relevant to large mammal conservation. Our results show that previous land planning by other donors (e.g., BTC) was not in the correct area in terms of the corridor route. Furthermore, this evidence of the most recent route taken by migrating large mammals could potentially be used to inform corridor restoration attempts in the future.

This output has been achieved to time and with much success. As per this output's indicators, the project has contributed significant information on the biodiversity of the area, on the temporal movements of large migratory mammals and on the spatial locations of significant mammal populations at different times of the year. We have also significantly improved knowledge on the location and status of the corridor, as well as identifying which sections of the most likely route are the most degraded and which are still home to large populations of important wildlife. Anthropogenic threats have been identified through ecological and socio-economic surveys. All such knowledge and information has been disseminated back to local stakeholders.

The only assumption for this output, that stakeholders would allow us access to land to conduct the surveys, still holds true in most cases, although several personnel changes at KVTC have caused difficulties in obtaining permission to access their land. This has been a minor problem, however; since surveys conducted around the boundaries of KVTC land revealed large wildlife populations within their area, and our relationship with KVTC generally remains strong.

### ***Output 2*** *Comprehensive Management Plans designed by Frontier-Tanzania for the Ruipa Wildlife Corridor with the participation and agreement of each of the key stakeholders, based on updated knowledge of Corridor biodiversity and threats*

Development of land management plans did not begin in earnest until the end of 2010, when Frontier-Tanzania began to hold consultations with villagers and village councils about land management at the same time as disseminating research results. Based on vastly improved knowledge of the corridor's biodiversity and threats (gathered through work under Output 1), the decision was made to focus on preserving the remaining good quality habitat along the most likely, and most recent, corridor route. Thus plans are in progress for four villages in Ulanga District, the lands of which form a key part of the corridor route identified during our data collection phase. These villages are situated between the Selous Game Reserve and KVTC land, and our surveys show that their land covers the route used by large mammals that are still attempting to migrate at the end of the rainy season. These four villages were not covered by the BTC project (which developed plans for all villages in the Ramsar site), thus we are avoiding replicating the work of a project with complimentary aims to ours. However, in early 2011 (after we had selected the villages to be included in our land planning activities) BTC had their funding withdrawn and their project closed down before many of the village plans they were funding had been completed. The legal status of these plans remains unknown at the time of writing, and consequently several other villages in the more northern corridor area may in fact require new plans. We still consider our four focus villages to be the top priority, for the reasons already discussed, but it is worth mentioning that an additional, future project might be required to mitigate the impacts caused by BTC's failure.

It had been hoped that draft management plans for the four villages would be ready by June 2011; however the process was halted when the area suffered flash floods causing extensive damage and making access to remote areas impossible. As a consequence, the land use mapping stage of the process has been delayed until June/July. As such this output is behind schedule, but unavoidably so. A contract has been signed with the Ulanga District Council and all logistical arrangements have been made with every necessary party. It is therefore unlikely that the delay will have any long term impact on the success of land planning activities.

Preparations for land planning have been ongoing since the last quarter of 2010 and have included a number of workshops during which village councils and community members were informed of, and consulted on, upcoming activities. As described under Activity 3.2 (above), Frontier-Tanzania organised and facilitated a further meeting in April 2011, this time for representatives of all four villages to discuss and finally settle boundary disputes (which have previously been an important barrier to implementation of land plans) (report attached at Annex 3). These villages have since organised further community events themselves (with our assistance as facilitators), to disseminate information even more widely.

It is also worth noting that all four villages have pledged two people to take part in the mapping phase of the land planning. They have agreed to do this at their own cost, indicating a rare level of ownership and responsibility among local communities, and making it all the more likely that land planning will be successful.

The assumptions still hold true: all stakeholders remain supportive, and permanent monitoring sites in the four villages have been identified.

Management plans for private and government owned land have not been developed because as the project progressed it became clear that this would be unnecessary and that a focus on community land planning was much more urgent. Two private companies in the area are apparently defunct and the two that remain active, i.e., KVTC and Wild Footprints Ltd., already manage their land in a manner consistent with conservation of the corridor. The main problem faced by these companies is a negative image among villagers, who regard the companies as having stolen land. Since our success in terms of collaborative improvement of community-based conservation depends crucially on maintaining harmonious relations between stakeholders, it would seem unwise for Frontier to be perceived by villagers as promoting the interests of private business. Consequently we have so far declined to comment to the villagers on either company, but this issue will eventually need to be addressed.

The Kilombero Game Controlled Area, managed jointly by the Wildlife Division and hunting companies (including Wild Footprints), is one of the major problems within the corridor. The threats the GCA faces are well known to both governmental and non-governmental actors and it is unlikely that the development of a new land management plan would help. At present no organisation in the area has the resources to control the influx of pastoralists into the GCA, and restoration of the GCA would require a major project in itself. Ulanga District Council has proposed upgrading the GCA to a Game Reserve, although this is unlikely to happen soon, if at all, as it requires a lengthy and bureaucratic process of approval.

***Output 3*** *Environmental awareness raising and capacity building aiming to mitigate human-wildlife conflict through initiation of sustainable deterrent activities; and develop alternative income-generating activities to reduce dependence on forest resources*

As described above (Activity 1.3), 11 community workshops have been held to date, along with a number of village meetings, and all were hailed as a great success. Information collated during the project's data gathering phase enabled us to target discussions at the issues we knew to be particularly relevant to the people of the area, and key to its conservation. Information was disseminated on the Darwin Initiative Project's findings, both ecological and socio-economic, and advice was given by staff from Frontier and from the District Councils on natural resource management and problem animal control. The latter included advice from District officials on which methods are illegal and which are ecologically unwise and unsustainable, which was new information to many farmers. Many villagers have requested further advice following these events and overall the workshops have revealed an almost insatiable appetite among villagers for environmental education. Several villagers have remarked that Frontier is ideally placed to deliver this education, as we are respected and regarded as both knowledgeable and impartial in environmental matters.

The strategy of holding impromptu, informal workshops (in November 2010) in as many villages as possible worked well as it exposed our work to many ordinary residents who might not normally have been aware of it (see Activity 1.3, above, for details; report attached at Annex 3). It also enabled us to raise awareness of environmental issues to a broad section of the community. Formal workshops held in February 2011 (report attached, Annex 3) were attended by village and district councils and were an excellent platform for improving communications between local institutions and the communities they represent. One problem encountered in these workshops was that although we encouraged as many community members as possible to attend, we found that the majority of non-council attendees were from the host village (each event covered a number of villages). We have since encouraged individual village councils to hold their own feedback sessions to disseminate information more widely within individual villages and have seen evidence that this is happening.

A common reaction when we first tried to explain issues of problem animal management and sustainable forestry was that these are issues for the government to deal with. People are naturally concerned

primarily with the success of their farms, rather than with protecting wildlife or habitats. However, once the issues relating to the conservation of the Ruipa Corridor had been explained, villagers began to appreciate the need to act quickly and in an environmentally-conscious manner, and came up with suggestions of their own on how this could be achieved. This perception that external actors should resolve issues without input from villagers may have arisen from experience with previous land management planning (initiated by other donors), which were drawn up at district government level with communities merely being instructed on what to do. Evidence from our workshops and village-level discussions suggests to us that this has fostered a sense of powerless among villagers and village councils. We feel that our close engagement with these villagers is beginning to make a difference, and that there is a growing feeling that villagers do have the power to change things as well as a responsibility to be involved. Evidence of this comes from, for example, the pledge by all four villages that will be involved in new land planning and that they will each contribute two people to help.

***Output 4*** *Training of representatives of key stakeholders (Village Environmental Committee, government officials private land-owners) in monitoring techniques*

To date, ten stakeholder representatives have completed a BTEC in Tropical Habitat Management and have been awarded certificates by the EdExcel examination board. Eight of these came from villages in the corridor area and two were district council representatives. The BTEC course includes training in biodiversity monitoring techniques. In addition to the BTEC, trainees also received ad hoc training in the use of GPS units to map animal movements and populations.

All candidates stated that they found the training extremely useful and wished to use their new skills to help protect their environment. All were extremely proud to receive their official EdExcel certificates in April 2011. Several of the villagers who received training have subsequently been involved in the project's ongoing ecological monitoring activities (including large mammal transects) and will be encouraged to continue to do so in the future. As well as improving local capacity to monitor ecological indicators, the training programme had the added benefit of further strengthening the relationship between this project and the local communities with which it is working.

No representatives from private land-owners have yet received training. KVTC were approached to send a candidate but declined as they could not identify anyone suitable. UDSM were also invited but also could not provide a candidate. It is hoped that if enough interest is shown another training course can be run to cover this gap, but otherwise this output has been completed with a great deal of success.

Two of this output's assumptions have held true – suitable candidates were identified and all trainees passed the course's requirements. It is too early to tell whether the third assumption – that sufficient people have been trained to continue post project – will continue to hold but indications are that the knowledge acquired by candidates is passed on through informal means and the hope is therefore that these 10 people will build capacity amongst the wider community.

The EdExcel invoice for the BTEC candidates is attached at Annex 3.

## 4.3 Standard Measures

### Table 1 Project Standard Output Measures

| Code No. | Description of measure | Year 1 Total | Year 2 Total | Total to date | Number planned for reporting period | Total planned during the project | Comments / details |
|---|---|---|---|---|---|---|---|
| Established codes | | | | | | | |
| 4A | Number of undergraduate students to receive training | 0 | **1** | **1** | 0 | X | BTEC certificate in tropical habitat management |
| 4B | Number of training weeks to be provided | 0 | **2** | **2** | 0 | X | Full time (6-7 hours per day) for 14 days |
| 4C | Number of postgraduate students to receive training | 0 | **0** | **0** | 0 | X | |
| 4D | Number of training | 0 | **0** | **0** | 0 | X | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | weeks to be provided | | | | | | |
| 6A | Number of people to receive other forms of education/training (which does not fall into categories 1-5 above) | 0 | **10** | **10** | 5 | X | 10 local stakeholders achieved BTEC qualification in tropical habitat management |
| 6B | Number of training weeks to be provided | 0 | **20** | **20** | 10 | X | 6-7 hours per day, for two weeks, for 10 trainees |
| 7 | Number of (ie different types - not volume - of material produced) training materials to be produced for use by host country | 0 | **0** | **1** | 1 | X | Poster produced giving information on natural resource management and problem wildlife |
| 8 | Number of weeks to be spent by UK project staff on project work in the host country | 30 | **86** | **106** | 80 | X | Two staff from UK organisation permanently based in host country (43 weeks each on project activities) |
| 9 | Number of species/habitat management plans (or action plans) to be produced for Governments, public authorities, or other implementing agencies in the host country | 0 | **0** | **0** | 4 | X | 4 land management plans will be produced (not yet finalised – delays caused by weather in the first quarter of 2011) |
| 11A | Number of papers to be published in peer reviewed journals | 0 | **0** | **0** | 3 | X | Papers in preparation |
| 11B | Number of papers to be submitted to peer reviewed journals | 0 | **0** | **0** | 3 | X | Papers in preparation |
| 12B | Number of computer based databases to be **enhanced** and handed over to host country | 0 | **0** | **0** | 0 | X | |
| 13B | Number of species reference collections to be **enhanced** and handed over to host country(ies) | 0 | **0** | **0** | 0 | X | Previous work by Frontier-Tanzania has established a enhanced species reference collection at UDSM |
| 14A | Number of conferences/seminars/ workshops to be **organised** to present/disseminate findings | 0 | **11** | **11** | 0 | X | Workshops held to disseminate findings to local stakeholders |
| 14B | Number of conferences/seminars/ workshops **attended** at which findings from Darwin project work will be presented/ disseminated | 0 | **0** | **0** | 1 | X | Project work will be presented at an international conference in June 2011 (delayed by one year) |
| 15A | Number of national press releases in host | 0 | **0** | **0** | 1 | X | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | country(ies) | | | | | | |
| 15B | Number of local press releases in host country(ies) | 0 | **0** | **0** | 1 | X | |
| 15C | Number of national press releases in UK | 0 | **0** | **0** | 0 | X | |
| 15D | Number of local press releases in UK | 0 | **0** | **0** | 0 | X | |
| 16A | Number of newsletters to be produced | 0 | **0** | **0** | 0 | X | |
| 16B | Estimated circulation of each newsletter in the host country(ies) | 0 | **0** | **0** | 0 | X | |
| 16C | Estimated circulation of each newsletter in the UK | 0 | **0** | **0** | 0 | X | |
| 19A | Number of national radio interviews/features in host county(ies) | 0 | **0** | **0** | 0 | X | |
| 19B | Number of national radio interviews/features in UK | 0 | **0** | **0** | 0 | X | |
| 19C | Number of local radio interviews/features in host country(ies) | 0 | **0** | **0** | 0 | X | |
| 19D | Number of local radio interviews/features in UK | 0 | **0** | **0** | 0 | X | |
| 23 | Value of resources raised from other sources (ie in addition to Darwin funding) for project work | £10312 .50 | | | | | SEE's financial contribution to project |

**Table 2 Publications**

| **Type (eg journals, manual, CDs)** | **Detail (title, author, year)** | **Publishers (name, city)** | **Available from (eg contact address, website)** | **Cost £** |
|---|---|---|---|---|
| Report | The status of the Ruipa corridor between the Selous Game Reserve and the Udzungwa Mountains. Bamford, A, Ferrol-Schulte, D & Smith, H. 2010 | The Society for Environmental Exploration | www.frontier.ac.uk | 0 |
| Report | Stakeholder workshops in the Ruipa corridor. Ferrol-Schulte, D. 2011 * | The Society for Environmental Exploration | | 0 |
| Report | Report of environmental education workshops. Ferrol-Schulte, D. 2010 * | The Society for Environmental Exploration | | 0 |
| Poster | Natural Resources and Wildlife in Ulanga District, Bamford, A & Ferrol-Schulte, D. 2010 * | The Society for Environmental Exploration | | 0 |

## 4.4 Progress towards the project purpose and outcomes

Good progress has been made during the last year on the project as a whole. Data collection, which formed the bulk of activity in the first half of the project, was complete by the last quarter of 2010. Dissemination of the results of this research to stakeholders has been extensive, with reports and posters distributed and several talks given in village workshop settings. Dissemination to the wider scientific and conservation community is underway, with conference talks and peer-reviewed papers planned. The results of our ecological and socio-economic surveys have been used to inform the land planning process, particularly the selection of the villages to be covered.

An intensive stakeholder training course has been held for 10 local stakeholders, all of whom achieved EdExcel-accredited qualifications in biodiversity monitoring. Capacity building workshops have been held successfully (despite WCST being unable to facilitate at the last minute). All workshops and training courses have revealed an insatiable appetite among villagers for environmental education, and this enthusiasm has made awareness raising and capacity building all the more successful.

All stakeholders are still extremely supportive of the project, its staff and its goals (thus assumption 1 still holds true). Land management planning is underway with the enthusiastic involvement of all concerned, and there is every sign that stakeholders will incorporate our recommendations. Relations between the stakeholders themselves are proving a minor problem, particularly with regards to private companies in the area, which are not well regarded by the villages. This is mainly due to lack of knowledge by the villagers about the companies and their activities. Worryingly, Ulanga District Council apparently encourages this situation.

The involvement of villagers and village councils in land planning has been excellent, and has extended to an agreement between them to settle border disagreements (which have made previous planning attempts more difficult). Relations between stakeholders in the main are stable (assumption 2 remains true), despite these minor historical tensions, and they have been improved through the interactive workshops and discussions that we have organised. The excellent relationship between the project and the villagers and district officials with whom we work makes it very likely that assumption 3 (that recommendations will be incorporated into plans and implemented) will hold true as plans are developed.

Some problems that were not foreseen in the original project proposal have arisen, however. The environmental damage already present within the Game Controlled Area is far more extensive than anticipated, and restoration of that area is beyond the resources of this project. The BTC project to conserve the Ramsar site should have protected the GCA and the success of BTC's project should have been included as an assumption in the logframe of ours. In the event, the BTC project was so badly mismanaged that it has had its funding withdrawn. As BTC created village land management plans before completing an integrated management plan, and without consulting other NGOs operating in the Ramsar site (which include WWF and Frontier), the BTC plans are not necessarily consistent with the preservation of the Ruipa Corridor. As many of the BTC plans were incomplete when the project was closed it seems likely they will not be implemented, but at present this issue remains confused and the exact impact this will have on our project is not yet clear.

Given these problems, it appears unlikely that the Ruipa Corridor can be reopened as a migration route in the near future. Although this may appear a fairly major setback, this project can still make a significant impact on the area's biodiversity, and on the current and future health of the broader ecosystem, by improving the conservation status of the large areas of good habitat that remain in the corridor area. Our findings show that large and important populations of migratory mammals (including elephants) still persist in these areas, and that they still attempt large seasonal movements. We have also shown where the most likely corridor route is now located and we have shown evidence of where restoration would be necessary in order to re-establish migration along the entire corridor. Unless the remaining habitat along the route is conserved, not only will restoration of the corridor become an impossibility but survival of the wildlife populations that persist in the area will be threatened. This project is thus contributing significantly to the survival of key biodiversity and natural resources along the Ruipa Corridor, despite the fact that full migration along the route may have ceased. By improving local capability to manage resources and land management practices we aim to prevent remaining habitat and wildlife from suffering the level of degradation seen in areas like the GCA.

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

It is difficult at this stage to assess the impact of this project on broader goals relating to biodiversity or sustainable use. We anticipate that post-project monitoring will help to better elucidate the project's contribution to such generic goals over the longer term.

However, there is already evidence that the project's activities are impacting on local capacity to conserve resources and biodiversity and thus that there is a good chance of positive impacts on the conservation status of key species and habitats in the area. Qualitative evidence of changing attitudes is coupled with quantitative evidence of the number of local stakeholders who have received formal training in monitoring and habitat management. As local engagement with, and enthusiasm for, land planning activities has heightened, there is good evidence that better management of resources in this area will reduce levels of extraction and that enforcement of by-laws that are intended to conserve wildlife and habitat will be more successful as a result of our activities. If this proves to be true in the long term, it may well mean that unsustainable use of resources changes towards sustainable use, and thus that enough habitat is conserved to reduce the loss of biodiversity and to conserve existing populations of wildlife.

## 5. Monitoring, evaluation and lessons

The progress of the project has been monitored by the project leader, Mr Andrew Bamford, in Tanzania, and in the UK by project managers Ms Sam Fox, Dr Elise Belle, Mr Sam Lloyd and Dr Zoe Balmforth (who took over at the start of 2011). In order to effectively monitor the project's progress, detailed quarterly reports have been produced internally. These ensure that all relevant internal parties are able to monitor the progress of every aspect of the project, including the implementation of activities and research, ongoing project operations and logistics, and forward planning. Additionally, several meetings have been held between project staff, field staff and stakeholders to review project progress, discuss activities and outputs and how targets will be achieved, and to produce detailed work plans for continuation of the project. Consultations have also been held with stakeholders and other experts who have been able to advise on local practices and steps necessary for the implementation of land management plans. Stakeholder training is assessed externally by EdExcel, ensuring a consistent standard is met.

The project monitoring and evaluation plan has not been altered over the reporting period, and it will continue as planned throughout the project. As such, the contribution of the project's outcomes towards its overall purpose will be monitored on an ongoing basis by continuing to record information on biodiversity, large mammal populations and ecosystem health, alongside socio-economic information regarding resource use, prevalence of low-impact wildlife control measures, and implementation of management plans. Over time, this will demonstrate the impact of the project's activities on the capability of stakeholders to sustainably manage resources. Indicators of achievement at outcome level continue to be monitored on an ongoing basis and have been reported against in the above sections. They include, for example, reporting and disseminating information on ecological health, reporting on workshops held, and the numbers of stakeholders trained in biodiversity monitoring techniques. As well as monitoring our achievement of these, we also continue to assess our impact at a more qualitative level through extensive local engagement with the villagers who are key to the success of this project. Ongoing monitoring of local attitudes toward the project and its activities is considered essential in monitoring its success to date and the likelihood of future positive impacts.

The failure of the project by BTC to conserve the Ramsar site has provided many lessons for this project, particularly in terms of ensuring adequate community involvement in the creation of management plans and in the project as a whole; without this, there is little chance of a project of this type succeeding. We have also learnt that land planning must be scheduled to begin in the dry season, since the initial phase focuses on field-based data gathering and mapping. Our community workshops provided extensive lessons in terms of practicalities and ways in which to ensure the involvement of as much of the community as possible. Finally, we have learnt that attitudes can be changed, especially with regards to people's perceptions of their power to change things themselves. When our community work began we were faced with a sense of powerlessness among community members. We have turned this around and the level of engagement and the sense of ownership among ordinary villagers is now quite remarkable.

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

The previous annual report was submitted at a time when project activities were largely limited to data collection, and as there was limited progress towards the project goal at that early stage the review acknowledged that it was too soon to make many comments. The major concern of the reviewer was that the data collection should not become the focus of the project, which would lead to data heavy and unwieldy management plans. This concern has not, in fact, become an issue. The data gathering stage of the project was completed on time and the project's focus then shifted towards stakeholder training, broader environmental education and the dissemination of findings. The review also suggested that management plans could be developed as data is collected so that the plans are not based on outdated data. This is effectively the strategy the project is now taking, with data collection continuing alongside

the development of management plans. Furthermore, the selection of villages to be included in land planning was based on recent ecological data which demonstrated the current location of large mammal migratory movements.

## 7. Other comments on progress not covered elsewhere

N/A

## 8. Sustainability

The project's profile during the area of activity (i.e., the Kilombero Valley) continues to be excellent. Efforts to promote the project and to raise its profile locally have included village workshops in which the project's findings and activities were discussed, and production of a full-colour poster that is now on display in village offices. Frontier and the Darwin Initiative project are consequently well know in the project area and are extremely well regarded and supported by its residents, several of whom have commented that Frontier are ideally placed to deliver advice on environmental issues as they are regarded as impartial from government and private businesses.

Project reports have been disseminated to local and national stakeholders, including village councils, district councils, UDSM and WCS's Tanzania-based team. The technical report is publically available on the Frontier website.

The project will be further promoted within Tanzania and to the wider international conservation community via a conference presentation in June 2011, the abstract for which has already been accepted.

It is difficult to judge the project's long term impact on biodiversity preservation at this stage, but the response to environmental education and awareness raising events has been overwhelmingly positive with much demand for further training and information. This suggests a strong interest in resource conservation, which should ensure that the monitoring required to enforce management plans can be conducted by the communities, particularly given the formal training that we have also delivered. Further capacity building in ecosystem monitoring will be conducted over the coming year, to increase the likelihood that it will continue after the close of the project. This ongoing monitoring will be the key factor in implementing the management plans that are now under development.

The precise details of this project's exit strategy will be determined over the coming year as management plans are developed. However, Frontier will maintain a presence in the Kilombero Valley after completion of the project which should help ensure that the project's outcomes are sustained and its long term impact is monitored.

## 9. Dissemination

The main dissemination activities to date have included provision of information to the project's stakeholders and partners about its progress, results and planned activities. This has been achieved via verbal presentations at workshops and through circulation of reports and other documentation. Target audiences for this information have included UDSM, KVTC, WCST, WCS, WWF, Ulanga District Council and the villages located within the project's area of interest.

Future dissemination activities will include informing the wider scientific and conservation communities by means of peer-reviewed papers and presentations at international conferences. An abstract on the status of Tanzania's wildlife corridors with a focus on the Udzungwa Mountains and Selous Game Reserve (prepared in collaboration with the Udzungwa Ecological Monitoring Centre and WWF) has been accepted by the Association for Tropical Biology and Conservation for inclusion in their conference in Arusha in June 2011. In addition, an abstract specifically on the Darwin Initiative project has also been accepted. Frontier-Tanzania staff will present both papers at the conference. Post-project dissemination activities in Tanzania will be undertaken by Frontier-Tanzania, who will remain working in the country. In addition, we hope to work with UDSM to encourage dissemination of results through that institution now and in the future.

## 10. Project Expenditure

**Table 3 project expenditure during the reporting period (1 April 2010 – 31 March 2011)**

| **Item** | **Budget** (please indicate which document you refer to if other than your project application or annual grant offer letter) **(£)** | **Expenditure (£)** | **Variance/ Comments** |
|---|---|---|---|
| Staff costs specified by individual | | | -1.22% |
| Overhead costs | | | -9.78% |
| Travel and subsistence | | | +3.25% |
| Operating costs | | | -2.79% |
| Capital items/equipment (specify) | | | -3.45% |
| Others: Consultancy | | | n/a |
| Others (please specify) | | | +3.58% |
| **TOTAL** | | | **+0.73%** |

## 11. 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 LTS and the Darwin Secretariat to publish the content of this section (please leave this line in to indicate your agreement to use any material you provide here).

Over the course of the last year we have made what we consider to be outstanding achievements regarding improvements to community-level engagement in land and resource use planning. This has included a turn around in the level of responsibility and ownership expressed by local people towards their land, its ecosystem and the natural resources on which their livelihoods depend. At the outset of this project, the sentiment we heard was that resource management is the government's job. We now have people turning up at our camp to request more information on how they can protect their resources and to ask for further training in biodiversity monitoring. Local people have engaged with enormous enthusiasm in workshops, formal training events and land planning discussions. The level and tone of communications between villages and local government has vastly improved since we began this phase of the project, and we have even managed to initiate a process of inter-village discussion over boundary disputes and the way land planning will help settle these. Villages have pledged to help with data gathering for land planning at their own cost, which is extremely rare in Tanzania and provides an excellent example of local understanding that better resource management will benefit local people at an individual level. We are proud of these achievements not only because they have empowered the people of the area to protect what they rely on, but also because they indicate that our work to conserve the area's biodiversity is likely to be successful over the longer term. As an organisation, Frontier would like to thank the Darwin Initiative for providing the support to enable this work, and also to make special mention of the fact that the outstanding changes we have made to local capabilities and attitudes would not have been possible without the remarkable dedication of our field staff.

We have photos of field activities and village workshops which we would be willing to share if properly credited. Please contact Zoe Balmforth at Frontier's London Headquarters ( ) for details.

## Annex 1: Report of progress and achievements against Logical Framework for Financial Year 2010-2011

| Project summary | Measurable Indicators | Progress and achievements April 2010 - March 2011 | Actions required/planned for next period |
|---|---|---|---|
| ***Goal:*** *To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve*<br>⇒ The conservation of biological diversity,<br>⇒ The sustainable use of its components, and<br>⇒ The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources | | Much progress has been made in terms of improving knowledge of the biodiversity in this important ecosystem. In particular in relation to the location of key populations of large mammals, the location of their most recent migratory routes and the areas that should be targeted in order to conserve them. Evidence of unsustainable resource extraction and the issues this relates to has contributed to the capacity to address this problem and thus to protect habitats and biodiversity. Extensive, inclusive environmental education and stakeholder training in sustainable use and monitoring will have a very positive impact on the way local communities regard their resources and on how they use them. Contributions made towards improving relations between the district government and villagers is likely to have a positive impact on the ability of institutions to enforce laws designed to protect resources from overuse and to implement land plans that will reduce the rate of habitat destruction. | [redacted] |
| **Purpose:** To facilitate a synergistic approach to biodiversity conservation within the Ruipa Corridor among key stakeholders; developing the capabilities of local and national stakeholders to sustainably and equitably manage respective parts of the corridor | Gather biological and socio-economic data to effectively inform the development of Management Plans for key stakeholders<br><br>Key stakeholders participate in the design and implementation of specific Management Plans: private land-owners, government, and local communities<br><br>Capacity building workshops held to raise environmental awareness and reduce costs of implementing management plans, and training of stakeholder representatives in biodiversity monitoring | Gathering of biological and socio-economic data was completed by the end of 2010. All data was written up in a report that was distributed to stakeholders; additionally, posters and talks were given in villages to disseminate results.<br><br>Management plans for local communities are being developed. First drafts have been delayed due to flash floods in the area. The process so far has been highly collaborative and well received by stakeholders. Several workshops and meetings have been held to ensure broad engagement and participation at all levels<br><br>11 capacity building workshops were held in villages in November 2010 and February 2011. These included environmental education and engagement of villagers on land planning (issues and process). 10 stakeholder representatives received training in biodiversity monitoring in November 2010 for which they received a BTEC qualification.<br><br>Overall, the breadth and depth of stakeholder engagement has been excellent and training has been well received (so much so that more is repeatedly | Data will be disseminated to wider conservation and scientific communities. The latter via publications of peer-reviewed papers and presentations at an international conference in June 2011 (abstract already accepted).<br><br>Draft management plans will be completed following the delayed data gathering and mapping phase, and final plans are anticipated to be ready before the end of 2011.<br><br>Further workshops and training courses could be run given the high demand for environmental education in the area. This will depend on time and budget. |

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| | | requested at all levels). Stakeholders have been involved from several parts of the corridor, and have been presented with information on the status (ecologically and socially) of their respective areas. Their capacity to protect the habitats and wildlife within their respective parts of the corridor has been developed through education and training. Data gathered on biodiversity, ecosystem health and socio-economic issues has informed the focus of the project's work throughout, ensuring it is relevant and targeted. Relationships between village communities and district governments has been improved through integrative working and the likelihood that ongoing activities will have equitable, positive outcomes is thus increased. | |
| **Output 1** Significantly improved knowledge of the Ruipa Corridor, in terms of biodiversity, large mammal migration and land-use, disseminated to stakeholders and scientific community | Comprehensive information on biodiversity; spatial and temporal migratory patterns; land-use; species inventories<br><br>Identification of anthropogenic threats throughout the corridor<br><br>Assessment of viability of corridor | Ecological research on the Ruipa corridor was conducted from the start of the project and was completed by the end of 2010. The resulting dataset was analysed and results were compiled into a report and disseminated to stakeholders. Results included evidence of which areas still support large mammal populations, current large mammal movement patters and routes, and maps of land use. Information on land use will shortly be further improved through the mapping phase of land use planning.<br><br>Anthropogenic threats were identified through fieldwork and socio-economic surveys and the areas of the corridor that have been most degraded were identified.<br><br>Our research suggests that the corridor is unlikely to be used as a full migration route at present. Large mammals do still show large scale temporal movements, and apparently still attempt an annual migration along the corridor, but are probably now unable to cross some particularly degraded regions, including the main Ifakara-Mahenge road. There are, however, still significant populations of large mammals in areas throughout the corridor and the remaining habitat is thus very much worth conserving. | |
| **Activity 1.1** Ground surveys to map large mammal movements through the corridor | | Surveys were carried out throughout 2010 and are now complete. | |
| **Activity 1.2** Development of management plans for key stakeholders | | Development of plans is underway. Initial meetings have decided on the role that each actor (villages, district council and Frontier) will play in the process and a contract has been signed with the district council. The mapping and demographic data collection phase was planned to take place in April 2011 but had to be delayed due to flooding; these activities will take place in June/July 2011 and draft plans will be ready shortly after. | |
| **Activity 1.3** Capacity building workshops aiming to mitigate human-wildlife conflict | | 11 workshops were held in November 2010 and February 2011. The first round of workshops were informal and were held in eight villages with the intention of exposing as many villagers as possible to Frontier's work and to ideas on sustainable management of wildlife and human-wildlife conflict. For the second round of workshops, village and district councils were invited to participate, and villagers were encouraged to join in. Discussions were held on sustainable management of resources, solutions to human-wildlife conflict and collaborative land planning activities. | |
| **Output 2** Comprehensive Management Plans designed by Frontier-Tanzania for the Ruipa Wildlife Corridor with the | Workshops held in four villages with Village Environment Committees to enable development and implementation of | Development of management plans is underway, focusing on four villages in Ulanga District that the research carried out in 2010 showed are positioned in the route used by large mammals still attempting to migrate. Further meetings were set up by Frontier in April 2011, to provide a platform | |

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| participation and agreement of each of the key stakeholders, based on updated knowledge of Corridor biodiversity and threats | management plans for village owned forests<br><br>Management plans developed by Frontier-Tanzania for private land-owners (e.g. Wild Footprints hunting company, Kilombero Valley Teak Company) and government owned land (Forestry and Beekeeping Division, Wildlife Division) | for villagers to settle border disputes and to discuss issues with district land planning officers.<br><br>Land management plans for private landowners are not considered necessary, as the only two private landowners remaining in the corridor area already manage their land in a manner consistent with the preservation of the corridor. Other private land owners have become defunct since this project began. Government owned land, in particular the Kilombero Game Controlled Area, would not benefit from new management plans; the problem here is a lack of enforcement rather than a lack of adequate land planning. |
| **Activity 2.1** Training of stakeholder representatives in biodiversity monitoring | | Ten stakeholder representatives completed a BTEC in tropical habitat conservation in November 2010. Eight candidates were from villages in the corridor area and the other two were game scouts from the district council. The BTEC course included training in biodiversity monitoring techniques and all candidates have received their official certificates, issued by the EdExcel examining board. |
| **Activity 2.2** Annual surveys with stakeholders | | The candidates who undertook the BTEC qualification have remained involved with the surveying work carried out by Frontier. The first formal annual surveys are planned for the end of the rainy season, in July 2011, shortly before the land management plans are drafted. |
| **Activity 2.3** Levels of anthropogenic activities monitored post-project by Frontier-Tanzania | | Suitable survey sites were identified in early 2011 for the post project monitoring. These are based on the results of extensive ecological monitoring (Activity 1.1). |
| **Output 3** Environmental awareness raising and capacity building aiming to mitigate human-wildlife conflict through initiation of sustainable deterrent activities; and develop alternative income-generating activities to reduce dependence on forest resources | Workshop held for village representatives to expose villagers to deterrent techniques and income-generating activities | Workshops were held in November 2010 and February 2011, and involved village and district councils as well as ordinary villagers. An insatiable appetite for environmental education has been revealed, with Frontier regarded as well placed to deliver this. There was initially scepticism over whether communities could help themselves, but this was overcome to a large degree through discussions and feedback sessions. Villagers then began to embrace the idea and have put forward many suggestions for better resource management and income generating activities. Two reports on these workshops have been produced along with a poster displaying the project's ecological and socio-economic findings (Annex 3). |
| **Activity 3.1** Gathering of biological and socio-economic data to inform the development of management plans | | Gathering of data took place throughout 2010, and a report was produced summarising all results and analysis (Activity 1.1). A presentation on the research was given by Frontier staff during community workshops. |
| **Activity 3.2** Consultations held in villages to enable the development of management plans for village owned forest | | Consultations with villagers, village councils and district councils were held throughout 2010 and early 2011, with the aim of judging the need for, and desired outcomes of, land management plans. These included meetings between the leaders of different villages to settle border disputes ahead of drawing up new plans. |
| **Output 4** Training of representatives of key stakeholders (Village Environmental Committee, government officials private land-owners) in monitoring techniques | Two Forest Officers, two Wildlife Division Game Rangers, two personnel from each of the private land-owning companies, 2 Village Environmental Committee members from each village, 2 UDSM students trained in monitoring techniques by Frontier-Tanzania through a formal BTEC qualification in Tropical Habitat Conservation | Ten stakeholder representatives and one Tanzanian member of staff from the Frontier-Tanzania project have all completed a BTEC in tropical habitat management, accredited by EdExcel, which covers various monitoring techniques. These included eight village representatives and two game scouts from the district councils. KVTC and UDSM were approached, but declined to send a representative as no suitable candidate could be found. A second training course could be run if enough interested candidates are identified during the next phase of the project and if time and budget allow. |

## Annex 2 Project's full current logframe

| Project summary | Measurable Indicators | Means of verification | Important Assumptions |
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| **Goal**<br>Effective contribution in support of the implementation of the objectives of the Convention on Biological Diversity (CBD) and the Convention on the Conservation of Migratory Species (CMS), as well as related targets set by countries rich in biodiversity but constrained in resources. | | | |
| **Sub-Goal**<br>The Kilombero's Valley's Ruipa Corridor is preserved, maintaining connectivity for migratory species through the Valley, between the Udzungwa Mountains and Selous Game Reserve; conserving the unique habitats and biodiversity of this designated Ramsar site; reducing anthropogenic threats through equitable sharing of the costs and benefits of biodiversity conservation. | Ground surveys demonstrate sustained large mammal movement through the corridor and conservation of biodiversity after the implementation of stakeholder management plans.<br><br>Decrease in unsustainable anthropogenic activities and human encroachment within the corridor. | Data from seasonal monitoring of biodiversity, land-use changes, and socio-economic surveys during and post-project by Frontier-Tanzania.<br><br>Levels of anthropogenic activities monitored post-project through disturbance surveys by Frontier-Tanzania. | |
| **Purpose**<br>To facilitate a synergistic approach to biodiversity conservation within the Ruipa Corridor among key stakeholders; developing the capabilities of local and national stakeholders to sustainably and equitably manage respective parts of the corridor. | Gather biological and socio-economic data to effectively inform the development of Management Plans for key stakeholders.<br><br>Key stakeholders participate in the design and implementation of specific Management Plans: private land-owners, government, and local communities, effectively operational by 2010.<br><br>Capacity building workshops held to raise environmental awareness and reduce costs of implementing management plans, and training of stakeholder representatives in biodiversity monitoring. | Annual surveys with stakeholders before and after implementation of management plans to gauge costs and benefits of Management Plans and obtain feedback. | Stakeholders remain supportive<br><br>Relations between stakeholders are stable<br><br>Key stakeholders incorporate recommendations made and implement management plans. |
| **Outputs**<br>1. Significantly improved knowledge of the Ruipa Corridor, in terms of biodiversity, large mammal migration and land-use, disseminated to stakeholders and scientific community. | Comprehensive information on biodiversity; spatial and temporal migratory patterns; land-use; species inventories.<br><br>Identification of anthropogenic threats throughout the corridor.<br><br>Assessment of viability of corridor. | Publication of Frontier-Tanzania Environmental Research Series Technical Reports and 2 peer-review publications<br><br>Data to be shared with stakeholders and submitted to relevant national and international databases. | Stakeholders allow researchers on the land in the corridor to conduct surveys. |

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| 2. Comprehensive Management Plans designed by Frontier-Tanzania for the Ruipa Wildlife Corridor with the participation and agreement of each of the key stakeholders, based on updated knowledge of Corridor biodiversity and threats, operational by April 2010 | Workshops held in four villages with Village Environment Committees to enable development and implementation of management plans for village owned forests.<br><br>Management plans developed by Frontier-Tanzania for private land-owners (e.g. Wild Footprints hunting company, Kilombero Valley Teak Company) and government owned land (Forestry and Beekeeping Division, Wildlife Division). | Management plans formulated and approved by all stakeholders.<br><br>Management plans implemented and enforced by stakeholders on their land within the Ruipa Corridor.<br><br>Publicity articles, posters, leaflets, website and meeting minutes.<br><br>Monitoring and facilitation of Management Plan implementation by Frontier-Tanzania for a further year until EoP. | Continued presence and support of key land-owning stakeholders.<br><br>Suitable permanent monitoring sites identified. |
| 3. Environmental awareness raising and capacity building aiming to mitigate human-wildlife conflict through initiation of sustainable deterrent activities; and develop alternative income-generating activities to reduce dependence on forest resources. | Workshop held for village representatives to expose villagers to deterrent techniques and income-generating activities. | Workshop reports and evaluation summary by Village Coordinator<br><br>Annual socio-economic and human-resource use assessment surveys post project carried out by Frontier-Tanzania<br><br>Publicity articles, posters, leaflets, website and meeting minutes. | |
| 4. Training of representatives of key stakeholders (Village Environmental Committee, government officials private land-owners) in monitoring techniques | Two Forest Officers, two Wildlife Division Game Rangers, two personnel from each of the private land-owning companies, 2 Village Environmental Committee members from each village, 2 UDSM students trained in monitoring techniques by Frontier-Tanzania through a formal BTEC qualification in Tropical Habitat Conservation | Trainees awarded BTEC qualifications accredited by Edexcel, to demonstrate ability to continue monitoring activities. | Suitable candidates for training identified<br><br>Trainees pass course requirements<br><br>Funding for monitoring and sufficient number of people trained to continue post project |
| **Activities** (details in workplan)<br><br>1.1 Ground surveys to map large mammal movement through the corridor<br>1.2 Development of management plans for key stakeholders<br>1.3 Capacity building workshops aiming to mitigate human-wildlife conflict<br>2.1 Training of stakeholder representatives in biodiversity monitoring<br>2.2 Annual surveys with stakeholders<br>2.3 Levels of anthropogenic activities monitored post-project by Frontier-Tanzania<br>3.1 Gathering of biological and socio-economic data to inform the development of management plans<br>3.2 Consultations held in villages to enable the development of management plans for village owned forest | | | |

**Monitoring activities**:

Indicator 1. Occurrence of large mammal movements within the Ruipa Corridor
Indicator 2. Level of implementation of management recommendations
Indicator 3. Number of candidates trained in BTEC Wildlife Monitoring
Indicator 4. Prevalence of low-impact technologies implemented in local villages