

Darwin Initiative – Final Report

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

Darwin project information

Project Reference	15/041
Project Title	Waria Valley Community Conservation and Sustainable Livelihoods Programme (WVCP)
Host country(ies)	Papua New Guinea (PNG)
UK Contract Holder Institution	Coral Cay Conservation (CCC)
UK Partner Institution(s)	Jaquelin Fisher Associates Ltd (JFA)
Host Country Partner Institution(s)	Bris Kanda Inc.(BK), University of Technology (Unitech), PNG Forest Research Institute (FRI), Village Development Trust (VDT)
Darwin Grant Value	£130,000
Start/End dates of Project	May 2006 – April 2009
Project Leader Name	Peter Raines MBE
Project Website	www.coralcay.org
Report Author(s) and date	Peter Raines, Jeff Dawson, Kai Schiefelbein (CCC), Craig Turner (JFA)

1 Project Background

The project location was in the Waria Valley, Morobe Province, Papua New Guinea approximately 190km south-east of Lae. The purpose of the WVCP was to provide an ecosystem approach to address the environmental, social and economic issues of the Waria community. Specifically the project addressed ecosystem management, biodiversity assessments, education and training and sustainable livelihoods programmes with the aim to achieve local sustainable development based on benefits derived for local landowners from local forest biodiversity. The project completed the first biodiversity assessment of the Waria Valley, initiated a number of sustainable livelihood projects and provided education programmes and resources to local schools.

Note for website version of this report:

Due to the large size of related Annexes for this report, full versions of Annexes A - D for this report are available to download. The links to download these annexes can be found in [Section \(4\)](#) of this report. Please contact info@coralcay.org if you have any difficulties with these downloads.

Figure 1. Location of the Waria Valley in relation to Papua New Guinea



Figure 2. Map of the lower Waria Valley generated from the GIS mapping component of the project. The project was based at Nero Hamlet.



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

The project has supported the CBD by directly implementing the following Articles:

Article 7 – Identification and monitoring

This was supported through the biodiversity research programme which carried out the first biodiversity assessments of the Waria Valley. The baseline data collected as part of this project can be used to form the basis for future monitoring programmes to assess the impacts on biological diversity as a result of various human activities.

Article 8 – In-situ conservation

In relation to Article 7, the biodiversity research programme in combination with the GIS habitat mapping programme, identified areas within the valley that can be classed as being of high conservation value and should be incorporated into local environmental management plans. Specific recommendations and guidelines as a result of these findings have been made available to the community and local levels of government in order to promote the conservation and sustainable use of biological resources in the area. In conjunction with the biodiversity survey programme various sustainable livelihood schemes such as aquaculture, poultry and especially the reforestation, aimed to reduce environmental pressure (e.g. through reduced hunting) and promote environmentally sound and sustainable development.

Article 10 – Sustainable use of components of biological diversity

As with Article 8, recommendations and guidelines relating to the promotion and sustainable use of biological resources have been made available to levels of government within PNG. The implementation of reforestation schemes within the valley aims to improve the biological diversity of degraded areas and contribute to the sustainable use of resources. The eco-forestry component through Forcert will further encourage sustainable measures to be adopted in relation to biological resources.

Article 12 – Research and training

This was implemented through the scholars training programme in conjunction with Unitech, volunteer training programmes and local guides training.

Article 13 – Public education and awareness

This was implemented through the schools education programme, stakeholder consultations, and various awareness projects within the community and media outputs.

Article 17 – Exchange of information

All information relating to the project including scientific results, sustainable livelihood development will be made freely available, and will be given to all host country project partners and various groups including levels of government and the Waria Valley community.

Article 18 – Technical and scientific co-operation

The project trained local undergraduate and graduate volunteers developing their capacity to work within the conservation sector in PNG. Scientific and GIS data will be shared with all partners from which approaches can be adopted (such as survey methodologies, implementation strategy of livelihood schemes), lessons can be learnt and information integrated into future projects by those institutions.

In terms of thematic areas, the project successfully addressed the following themes: forest biodiversity, public education and awareness, sustainable use and biodiversity and tourism.

The PNG Department of Environment and Conservation (DEC) responded to the CBD requirement for appropriate biodiversity strategies and plans through the development of the New Strategic Direction of the DEC and the PNG National Biodiversity Strategy and Action Plan (2007). These strategies stress the need for achieving six main goals:

Goal 1: To conserve, sustainably use, and manage the country's biodiversity diversity

Goal 2: To strengthen and promote institutional and human capacity building for biodiversity conservation, management and sustainable use

Goal 3: To strengthen partnership and promote coordination for conserving biodiversity

Goal 4: To strengthen existing protected areas and ensure that protected areas for terrestrial species and marine species are increased to 10% by 2010 and 2012 respectively

Goal 5: Ensure a fair and equitable sharing of benefits arising out of genetic and ecosystem resources

Goal 6: Promote and strengthen research of the country's biological diversity and the sustainable development of the country's biological resources

The project's work supported many of PNG's CBD focal points and interacted with them through the project partner the PNG Forest Research Institute. Copies of the various technical Annexes will be submitted to the DEC and the National Research Institute (NRI) allowing those institutes to directly use the information collected by this project to support PNG's CBD focal points.

3 Project Partnerships

The project was a partnership of a number of organisations and on the whole these partnerships worked well and have been fruitful. An initial MoU was signed by CCC, JFA, BK, FRI, Unitech, VDT, DEC and the Waria Valley community in 2006. However due to a number of factors, as shall be discussed below, many of the original commitments made by project partners were not upheld which made some of the project aspects more difficult and requiring more attention than initially realised. The Project Manager communicated with all the project partners every time he returned to Lae from the project site (usually every 4 – 6 weeks). This was through email and phone with meetings held whenever appropriate and partners available. Monthly project reports were written and sent from Lae by the Project Manager to the Project Leader, CCC and Research Leader. These monthly reports informed CCC of all developments in the project and with project partners within PNG.

The principle in country partner was Bris Kanda Inc., formerly known as Morobe Bris Kanda (MBK). Between the signing of the original MoU and the initiation of the project on the ground MBK had become BK, with a change of personnel, funding and scope. The organisation was now not only involved in the Morobe Local Level Government (LLG) area but the whole of the Huon Gulf district. As a result of these factors BK were unable to uphold some of the original agreements, most critically the use of a boat for transport to and from the valley. However, the new General Manager, Lukis Romaso, was very keen to work with the project to achieve its goals and provide any assistance he could. As a result an excellent working partnership was formed between BK and the WVCP. The key area of collaboration was in the successful establishment of an inland aquaculture project within the Waria Valley (see Annex C, section 2.0). In addition, BK provided boat transport for the project as and when they were able, and invaluable logistical support for WVCP staff whilst in Lae. The WVCP in return helped with logistics, co-ordinating meetings and general support in the Waria Valley for visiting BK staff involved in other projects such as cocoa farming and rice milling.

The partnership with FRI was generally good, with WVCP scientists and project teams using FRI offices and resources, including the herbarium and FRI specialist knowledge whilst in Lae. In addition a FRI Scientific Officer Mathias Niangu, was able to visit the valley during the final year to investigate the potential of non-timber forest products (NTFPs). During the course of the project FRI began undergoing a major overhaul, including the announcement that all staff would have to re-apply for positions. This combined with a lack of funding and key contacts for the WVCP within FRI leaving, contributed to the partnership overall being less productive than it could have been, especially in terms of encouraging visiting FRI staff.

The partnership with Unitech was centred on the education and training of students. An excellent working relationship was formed between the WVCP and Dr. Ruth Turia, the head of the Forestry Department. This resulted in a week long training course for ten students in the Waria Valley as part of their 3rd Year course and two students gaining work experience over the Christmas break in 2007. In addition, the national Field Scientist for the WVCP, Oscar Pileng, was a Unitech Forestry graduate and the WVCP was able to utilise the library and borrow vital books for field studies. It was hoped that this would be replicated in 2008 but due to a number of problems at Unitech this did not prove to be possible (see Annex B, section 4.0).

During the course of the project VDT underwent a downsizing operation and continued to tighten its belt due to a lack of significant funding. As a result of this VDT were unable to provide the support they had initially agreed upon within the original MoU. They did state though that they were keen to use their knowledge of alternative livelihoods development, especially those of ecotourism, to support the project although this was very limited. A lack of information on, and subsequent confusion over the status and running of the current facilities in the valley, combined with a distinct lack of effort or involvement by the VDT management to help engage with community stakeholders severely hampered this aspect of the project. Eventually with the logistical assistance of BK Maine Winny, an eco-tourism officer with VDT (now a consultant with Culture Link PNG Ltd), was engaged and contracted by the project to conduct a feasibility study into the potential of eco-tourism in the Waria Valley (see Annex C, section 5.0).

The principle area that the lack of support from VDT affected was in the establishment of a small-scale saw milling operation in the Waria Valley. This was overcome by engaging Forcert (www.forcert.org.pg), a PNG based not for profit forest management and certification company in March 2008 to take the lead in this area (see Annex C, section 6.2). Overall the partnership with VDT suffered, not only from the internal difficulties in VDT but also because of the apparent unwillingness from its Director to engage with the project.

The DEC provided permits and approvals for the project to operate and undertake its specified work in PNG. Alongside the DEC, Jim Robbins and his assistant at the National Research Institute (NRI) provided sterling support and assistance in the difficult process of obtaining visa applications for individual scientists (see section 5 for further details).

The final and ultimately most critical partner, as core beneficiaries and stakeholders was the Waria Valley community. The initial project idea came from them (through Cossey Yosi) and their enthusiasm was key to the foundation of the project. As the project would be based permanently within the community it was imperative that an excellent relationship was formed between the community and the WVCP staff. This was achieved developing throughout the project and the WVCP benefitted greatly from having a very supportive and committed local staff team. Excellent relationships were formed with the local primary schools and key family and clan groups, allowing work to progress relatively smoothly within the valley. As would be expected when working within a large community, some issues did arise between the project and a few sections of the community but were all successfully resolved through discussion. These issues were mostly over land ownership of areas in which the project was working or concerned with long standing personal differences amongst members of the community and with local staff members. Whilst these did affect the implementation of some aspects of the project, the overall aims and results were not affected.

One area that the partnership between the WVCP and the local community could have been improved would be through a greater collaboration with the various local level of government including Ward councilors and the LLG president. Again timing of the project was against this achieving its potential, with national elections taking place during 2007 and the local elections in 2008, it meant that the local governmental leaders were absent or otherwise engaged to collaborate effectively with the project. In the last few months of the project however, the WVCP was able to engage with ward councilors to help the project and the newly elected Morobe LLG president expressed his interest in the project and its results to aid with future LLG strategies.

Under the terms of a Memorandum of Agreement signed between CCC and JFA in return for agreed fixed annual remuneration (as per stage 2 proposal budget), JFA was responsible for management oversight of technical components of the project: primarily scientific research, data management and analysis, and preparation of technical reports and other outputs. JFA was also responsible for the educational and training project components.

JFA co-ordinated the biodiversity research programme, providing survey manuals and guidance to all field staff. JFA also developed and delivered training materials for the scholars' programmes and educational materials for schools (educational work books, teachers' aids, posters) within the Waria Valley. JFA established and oversaw implementation by CCC project staff of the biodiversity surveying programme; community nursery and associated restoration programme; and eco-forestry and eco-tourism components. JFA were also responsible for the liaising with and developing links with the University of PNG (UPNG) to support the GIS component of the project. Under CCC's direction, JFA staff were deployed to the project site bi-annually for short missions, in line with the planned activities. Their time was divided between 'field activities' at the project site, and liaising with project partners in Lae, along with other supporters in Port Moresby, such as the University of PNG, British High Commission (BHC), and National Research Institute (NRI).

In terms of lessons learnt regarding project partners, one area that made collaboration more time consuming and difficult was the lack of a continuous contact in Lae. At the outset of the project Cossey Yosi, the initiator of the project, would act as the country co-ordinator for the project based in Lae. His role was to facilitate the engagement of project partners in the project whilst the Project Manager was in the field. Cossey however left to pursue a PhD in Australia in

June 2007 and his nominated replacement, Joe Pokana left in early 2008. This combined with a lack of field staff (see section 5) meant that contact between the project partners and WVCP was when the Project Manager returned to Lae. As such certain aspects, such as engaging scientists from FRI and Unitech and resolving problems took far more time than they should as they could only be chased up with the project partners during a few days every 4 – 6 weeks.

Overall, despite the changes within organisations since the MoU signing and during the course of the project, and changes of key personnel most of the partnerships were fruitful and developed well over the projects course.

4 Project Achievements

See Annex 1 and Annex's A 'Biodiversity Research Programme', Annex B 'Community Education and Training', Annex C 'Sustainable Livelihoods Development' and Annex D 'Media Outputs'.

Annexes A – D are available to download at the links below. Annexes 1 – 7 can be found at the end of this report.

Annex A – 2.2 MB

<http://dl.dropbox.com/u/3398621/Annex%20A%20-%20Research.zip>

Annex B – 145 MB

<http://dl.dropbox.com/u/3398621/Annex%20B%20-%20Educations%20and%20Training.zip>

Annex C – 6.2 MB

<http://dl.dropbox.com/u/3398621/Annex%20D%20-%20Media.zip>

Annex D – 8.6 MB

<http://dl.dropbox.com/u/3398621/Annex%20C%20-%20Livelihoods.zip>

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

A key objective of the project was to conduct the first biodiversity assessments within the Waria Valley. With oversight from JFA, the project successfully completed baseline biodiversity assessments into the status of bats, non-volant mammals, birds, butterflies, herpetofauna and trees within various forest and non-forest habitats (See Annex A for the full results). As well as giving a greater understanding about the environment within the Waria Valley this research adds to the overall data set, knowledge and understanding of the fauna of lowland rainforest habitats in PNG. It also provides data on the community structure of fauna from primary forest through secondary forest to agricultural areas. In association with the biodiversity assessments GIS habitat mapping was carried out. The purpose of this work was to ground truth certain areas such as village boundaries, habitat boundaries, major paths and features in the area. The biodiversity information collected can then be linked directly with the GIS in developing community based habitat management plans and in monitoring the environmental impact of activities such as logging and mining within the Waria Valley so as to promote the sustainable use of and preservation of biodiversity within the Waria Valley. As these were only baseline biodiversity assessments there is still a much greater scope for further surveys to be done, both in general and within individual taxa (See Annex A, section 10.6). In addition much more GIS habitat mapping and ground truthing can be done. The Annex's A, B and C will be submitted to all project partners and various levels of the government in PNG especially the lower levels so that they can be used as a resource in future planning and decision making.

The biodiversity research programme also served to build the capacity of a number of local people in understanding the benefits of, conservation and sustainable use of biodiversity through guides training and local staff training for eco-tourism (see Annex B, section 2.0 for full details). This has resulted in 3 fully trained guides who will be able to assist any future scientific studies or lead eco-tourism groups within the Waria Valley. In addition, another local volunteer underwent training over a 4 week period in vegetation survey skills and the use of various surveying equipment.

Dedicated biodiversity training was also carried out aimed at developing the survey skills and ecological knowledge of national scholars, enhancing their capacity for future work and employment within the conservation and environment sector in PNG (see Annex B, section 4.0 for full details). A total of 14 national undergraduate and graduate students received training over various periods during the projects duration.

A successful model reforestation scheme was established with a key family group within the valley (see Annex C, section 6.1). The family group involved have embraced this, clearly understanding the benefits to them and this will hopefully encourage other groups within the valley to undertake reforestation schemes on their land.

The community's awareness of the benefits of biodiversity and the sustainable use of the environment has been raised through various awareness programmes and the schools programmes (see Annex B, section 3.0). It is difficult to quantify the impact of these in changing people's behaviours but combined with the upcoming saw milling operation under the direction of Forcert, a wider range of families and groups will start implementing basic practices.

4.2 Outcomes: achievement of the project purpose and outcomes

The projects three key purposes were to a) undertake biodiversity assessments of the Waria Valley; b) initiate alternative sustainable livelihood options for the community and c) provide biodiversity training and environmental education. All three of these purposes have been achieved within the timeframe of the project.

As discussed in section 4.1, the first biodiversity surveys within the area were successfully completed and biodiversity training, guides training and environmental education in schools completed. Full details of these can be seen in Annex's A and B.

The initial project proposal stated within its purpose, "...the initiation of alternative livelihood schemes (including small scale forestry and eco-tourism)". As such the project developed a number of successful sustainable livelihood initiatives in the Waria Valley including but not limited to the two mentioned (full details can be seen in Annex C). These included inland aquaculture, poultry and piggery schemes, which should provide a more regular supply of protein for people and an income for those farmers participating whilst also reducing the pressure on forest resources e.g. hunting. The eco-tourism component altered from the initial proposal and the small-scale saw milling component, whilst not fully completed was underway to be completed before the end of 2009 (see section 4.3 for further explanation).

The overall project purpose was to achieve local sustainable development based on benefits derived for local landowners from local forest biodiversity and the basis for this was achieved. The establishment of a small-scale saw milling operation initiated under the project will provide monetary benefits for those landowners involved, as will the eco-tourism component (although this relies heavily on external factors such as the numbers of tourists in PNG and visiting Lae). The reforestation programme has a long term benefit for those landowners involved in it and other livelihood schemes will provide protein and an income for those involved which indirectly can alleviate the pressure on the local forest biodiversity. Future sustainable development can benefit from the education and training carried out as well as the environmental guidelines and habitat mapping resulting from the biodiversity surveys.

4.3 Outputs (and activities)

There were 6 principle outputs for the project which are detailed below.

(i) *Forest biodiversity resource assessment programme*

Successfully completed, see Annex A for full details. The only minor issues faced were over land ownership (and thus access to survey). This resulted in the loss of 5 survey sites, delays in surveying whilst new sites were found and a smaller data set than could potentially have been achieved. Ultimately though a full data set was attained and the output achieved. Hardware and software problems delayed the start of the GIS habitat mapping in earnest. Once these issues had been resolved, and with input from UPNG the GIS habitat mapping progressed very well resulting in a large amount being achieved within the remaining timeframe.

(ii) Community nursery and associated restoration programme implemented

A nursery was established with a family group and a successful reforestation programme initiated. A community nursery was attempted to be established along with other nurseries but these failed when project staffed pulled back. See Annex C, section 6.1 for full details on this output.

(iii) Small-scale saw forestry and milling co-operative operational

The establishment of a small-scale saw milling operation was hindered by the problems within the key project partner VDT (see section 3) and the reduced project time on the ground (see section 5) and as such this was not operational by the end of the project. Positive progress had been made in getting this set up by the end with stakeholder consultations within the community and a commitment from Forcert to pursue it. As such a small-scale saw milling operation should be established before the end of 2009 (see Annex C, section 6.2).

(iv) Education and training programme completed

Successfully completed, see Annex B for full details. This included the guides training, biodiversity scholars training, community awareness programmes and the schools programmes. The project produced a number of teaching aids for the three primary schools in the area including teachers' workbooks, lower primary school workbooks, upper primary school workbooks and posters as well as supplying books for the resource centre at Zare-Aingse Primary School. Consultations between teachers at Zare-Aingse Primary School, project staff and visiting JFA staff during Year 3 identified aspects of the educational materials that were suitable or that required expanding. Response to the Lower Primary Workbooks and Teachers Aids were very positive but some concerns were raised over the suitability of the initial Secondary (Upper Primary) Workbooks. As a result of this JFA produced four more Upper Primary Workbooks based directly on the PNG Upper Primary science syllabus as well as additional educational posters. These were produced in English as it is the requirement within the PNG education system that all teaching (and associated learning aids) from Primary level upwards is conducted in English. Additional manuals on biodiversity survey methodologies and scholars lecture series were produced primarily for scholar students and volunteers. Copies of these were supplied to Unitech and all national volunteers who worked with the project. The only issue facing this aspect of the project was in the training of further scholar students in 2008 (see section 3).

(v) Eco-tourism centre established (using local materials)

This output had to be altered from the original proposal when it was apparent that a building, the Unu Resource Centre (URC), already existed within the area at nearby Saigara village. It transpired that one purpose for the URC's construction was for future eco-tourism and its potential in this area was identified by the WVCP. Following stakeholder consultation it was decided that this aspect of the project would be best served by concentrating efforts on the URC, the training of potential staff and on the potential for the development and promotion of eco-tourism in the valley rather than establishing another eco-tourism centre (see Annex C, section 5.0).

Additionally, stakeholder consultations prior to the arrival of the international staff identified a number of other sustainable livelihood schemes that were of importance to members of the local community. The WVCP decided to support some of these schemes as they contribute to the fulfilment of the projects purpose. Schemes such as aquaculture, poultry and piggeries would also be beneficial to tourism within the valley by providing fresh protein instead of relying on imported tinned meat. Full details of the sustainable livelihood schemes can be seen in Annex C.

(vi) Media and public relations

Successfully completed, see Annex D for full details.

4.4 Project standard measures and publications

See Annex 4 and 5. No articles or papers have yet been decided for peer review publication due to the late completion of the biodiversity survey programme. Upon final review of the results we will be looking to write and publish various papers in relevant journals, both regional and global over the next one to two years.

4.5 Technical and Scientific achievements and co-operation

Full details can be seen in Annex's A – D. Results from the biodiversity research programme will be made freely available and shared with project partners (also see section 4.4). Additionally GIS maps have been made for the local area. These have utilised base maps provided by UPNG and the purpose of the projects work was to ground truth certain areas such as village boundaries, habitat boundaries and major paths and roads in the area. This GIS information will be supplied to UPNG and project partners and FRI in particular are keen to utilise this information in planning further projects within the area.

4.6 Capacity building

As mentioned previously the most critical in-country partner was the Waria Valley community as they are at the forefront of environmental management. It was recognised that by providing fundamental environmental education this may encourage new generations of environmental managers and encourage more environmental awareness. By providing alternative sustainable livelihood options the pressure on species and habitats in the Waria can be lessened by reducing the need for continual slash and burn processes and resource extraction, such as hunting. Knowledge transfer and the building of capacity in both these components were based on the personal involvement of participants. Details of all those who received training including guides, eco-tourism staff and scholars can be seen in Annex B.

The inland aquaculture scheme involved four individuals from the community being trained outside of Lae, so as trainers themselves they could pass on their knowledge to others within the valley. In conjunction there were a number of follow up courses within the valley including book-keeping courses (see Annex C, section 2). This has built the capacity of fish farmers within the valley to a stage where they are now self-sufficient in terms of knowledge, allowing the expansion of this scheme to other areas without the need for external trainers to be present.

Further training and capacity building will be given to members of the community through the saw-scale saw milling project via Forcert. This is part of their scheme in developing all new community saw milling projects (see Annex C, section 6.2).

For other in country project partners the main beneficiary of capacity building was Unitech. Both lecturers who attended the 2007 field course run by the WVCP, stated how much they had learnt from the trip, both in terms of biological knowledge and teaching skills. The WVCP provided Unitech with copies of the scholars training manual, survey methodologies manual as well as some of the presentations that had been given during the course.

All the project partners will be supplied with copies of Annexes A, B, C and D to use as they wish in the future.

4.7 Sustainability and Legacy

To ensure the long-term continuation of the project goals once the funded project period had come to an end, an exit strategy was devised and implemented so as to provide the community the basis to continue achieving the project aims and objectives. The WVCP exit strategy comprised of two linked parts; the creation of a local NGO group and the development of a habitat management plan for the Waria Valley.

The formation of an NGO group was initially proposed by Cossey Yosi, the projects In Country Co-ordinator and his brother Zanie Yosi (the WVCP Field Co-ordinator). This would create a body within the community to oversee and assist with community development aspects of the project and implement the proposed management plan, maintain links with the various project partners and be able to seek funding from within PNG and internationally. Consultations with community groups and landowners between October 2008 and December 2008 showed that most people wanted the projects work to continue once the international staff left the valley in March 2009. Similar consultations with the project partners showed their support for the formation of such a group so that there could continue to be a link with the valley which would aid further work and collaboration. Registration for an NGO group was already underway at this stage as Cossey Yosi had already had his lawyers draw up a constitution and the relevant registration forms. Additional guidelines, NGO aims and objectives were drawn up and board members chosen through stakeholder consultations between November 2008 and February 2009 (see Annex 7).

In parallel with this a habitat management plan was developed through a number of stakeholder consultations from December 2008 to February 2009 providing guidelines for the community on sound environmental practice. In addition guidelines are provided for other aspects of the project such as sustainable livelihood development, scientific research, eco-tourism and eco-forestry so that participating family groups may benefit from these in future (see Annex 7). The principle of the plan is that it is entirely voluntary; with any family group being able to sign up to it and all sections except the habitat management are optional. The NGO would be responsible for the implementation of the plan and ensuring guidelines were being followed amongst participating family groups. It is also hoped that the habitat management aspects of this plan can be incorporated into local Ward Council and Local Level Government environmental plans and strategies.

The aim was to have the registration process underway before the international staff left in March 2009. The registration documents were all in the name of Zanie Yosi who was also to be the Project Manager of the NGO group. Unfortunately this was unable to be achieved as Zanie Yosi unexpectedly left the valley in January 2009 and did not return leaving the registration process in limbo. In his absence a new temporary Project Manager, Meremo Goroba (a project guide) was chosen by stakeholders to oversee the projects initiatives until Cossey Yosi returns to Papua New Guinea in July 2009 and starts the registration process. Cossey Yosi is committed to the formation of the NGO and will be pursuing it upon his return to PNG.

In addition, the project has transferred all of the projects resources over to the NGO including survey equipment, reference books, laptops and software so that they are available for future use. These have currently been left under the supervision of Cossey Yosi and Meremo Goroba until the NGO is officially registered.

As for the other project partners, their continued involvement with the project varies for each. BK are committed to working in the valley with various projects and are very keen to work with any group that shares common beliefs and goals. They have always stated that they view the formation of this local NGO group as being an important factor in maintaining the project. Forcert will be continuing to work in the valley with the community saw-milling operation. VDT, Unitech and FRI are all undergoing difficulties or transitions so their continued involvement within the valley and with any established NGO remains to be seen.

5 Lessons learned, dissemination and communication

An important lesson and ongoing problem, which provided a stern challenge to much of the projects work was the major difficulty in obtaining year long research visas for international scientists. The initial response from the PNG High Commission is that they would take approximately 4 - 6 weeks to process the applications, allowing the two initial international staff to be deployed in October 2006. This was not the case however, and delays in obtaining the visas meant they were unable to arrive in PNG until May 2007, six months behind schedule. Subsequent problems followed over the course of the project, resulting in three voluntary field scientists withdrawing from the project after waiting months with no response to their applications and the delay of the deployment of a new Project Scientist by 8 months. This

meant that there was a lack of qualified field staff and for a period between April 2008 and December 2008, only the Project Manager and national Field Scientist were present. As such it meant that the large and diverse workload of the project could not be spread amongst the staff and therefore allow the Project Manager more time to pursue work with partners in Lae (see section 3). The delay this caused to the start up on the ground was a key factor in the establishment of a saw milling operation not being finalised by the end of the project. No explanation was found for why the visa applications took so long to come through, or in the case of later applications not at all. This was despite the excellent assistance the project got from, and work by Jim Robbins and his assistant at the National Research Institute (NRI) in Port Moresby, who approved the visa applications before submitting them to the Department of Immigration for the final approval.

In relation to this the scope of the project was very wide incorporating biodiversity surveys, environmental education and sustainable livelihood development. The area of sustainable livelihood development, in particular became wider still following consultations with community stakeholders and identifying areas they were interested in pursuing. It would be a very challenging project in any event but became more of a challenge given the delay and lack of staff as a result of visa issues and the problems within some of the partner organisations.

Within the implementation of the project on the ground one lesson that can be taken is the constant need for awareness within the local community regarding a projects aims, objectives and work. The WVCP understood the need for this and there were numerous stakeholder consultations done before it was initiated by Cossey Yosi, during the project and information disseminated through community newsletters in both Tok Pisin and the local Zia language. Many sections within the community were aware of what was happening with the project but 'a lack of awareness' was always cited when any issues arose between the project and certain groups. All issues were successfully resolved and almost all were nothing to do with awareness about the project, but by employing a local community awareness officer it may have helped smooth out any issues before they came to a head.

Information regarding the project has been disseminated by a variety of pathways, both locally and internationally including newsletters, newspaper articles and radio interviews. See Annex D for full details.

5.1 Darwin identity

The WVCP has its own dedicated section on the new CCC website, as it did on the old CCC website. The Darwin Initiative logo is used throughout the CCC website including the homepage and project related pages. Regular updates, including monthly project updates, newsletters and news items are regularly posted to the website. The Darwin Initiative is present on the CCC letterhead.

CCC sends a monthly newsletter to all its past volunteers and newsletter subscribers (approximately 9500 subscribers). The majority of these newsletters, during the term of the project, included news and updates from the WVCP project.

Within PNG the DI logo has been used on all manuals and teaching aids given to local schools and to Unitech. It has also been used on all WVCP Community Newsletters which were distributed amongst the community as well as to all project partners, the National Research Institute, Hon Sasa Zibe (Minister for the Huon Gulf District and local Waria man) and the British High Commission. The Darwin Initiative is also mentioned in all press and radio interviews about the project.

JFA has promoted the project via its newsletters, website and other international promotional material. JFA also attended a conference (Annex D) in Thailand where a presentation on the project was given.

6 Monitoring and evaluation

There were periodic reviews of progress throughout the course of the project. Monthly project reports were sent by the Project Manager from the field to the Project Leader, CCC and

Research Leader detailing all aspects of the project. Biannual visits to PNG by JFA staff acted as reviews on the projects progress both at the project site and with project partners in Lae. Full reports of these visits were submitted to the Project Leader and CCC.

Changes to project design as stated in the original proposal occurred in four areas. Three of these eco-forestry, eco-tourism and additional sustainable livelihood schemes have been discussed earlier (see sections 3 and 4.3 and Annex C). The fourth area was in the compilation of inventories of two traditionally important tree species *Campospermum brevipetiolata* and *Hernandia ovigera*. This was expanded to incorporate all commercially valuable timber species as this would support the eco-forestry component of the project and future work by Forcert.

The other major change to the project was in the timeframe in which to complete the projects goals due to visa issues (see section 5). As such the logframe had to be altered accordingly and in this the output indicators proved to be very useful in ensuring the aims and objectives of the project were met.

6.1 Actions taken in response to annual report reviews

The issues and queries raised in previous reports and in particular the last annual report have been reviewed and highlighted either previously and, as requested, in this final report. Queries regarding budgets have been resolved directly with ECTF. Issues regarding project reporting are dealt with throughout this report and the additional Annex's. Those relating to education manuals are explained in section 4.3 and in Annex B. The final query relating to structure of management within CCC and the roles and responsibilities of the project team (as outlined in the stage 2 proposal) are outlined here.

The CEO of CCC is Peter Raines who is also the Project Leader for this Darwin project. In charge of overseeing and the operation of all CCC projects is the Director of Operations. This is currently Kai Schiefelbein who replaced James Sawyer in mid-2007. Within CCC head office there is also a PR and Communications Coordinator, Finance Manager and Fundraising Manager (see the website www.coralcay.org for further details). In specific relation to the Darwin project, the PNG based Project Manager, Project Scientist and national Field Scientist are employed through CCC.

Within the project team the roles and responsibilities were as follows:

- Project Leader has ultimate responsibility for the co-ordination, implementation, development and running of the project.
- Logistics within the project is the role of the Director of Operations at CCC. They were responsible for all logistical operations (UK), equipment procurement and project co-ordination outside of PNG, such as finalising budget requests from the field, and volunteer recruitment etc.
- JFA staff comprised the Research Leader (Dr. Craig Turner) and education and training manuals developer (Alexia Tamblin). They were responsible for overseeing the biodiversity research programme, GIS development and in developing the education (and training) aids and manuals for the schools and scholars programme. They also made biannual visits to PNG and the project site to review progress, and meet the project partners. JFA also co-ordinated the project staff recruitment and management, liaising with the NRI, BHC and other bodies to secure visas.
- Project Manager (PNG based) was responsible for the implementing, developing and managing the project and its various outputs at the project site; coordinating with the host country partners in Lae; managing and training staff; submitting budget requests and field reports.
- Project Scientist and Field Scientist (PNG based) were responsible for developing, in conjunction with the Research Leader, the biodiversity research programme and its implementation along with the other outputs. Assisting the Project Manager.

- FRI was to be the main host country partner through Cossey Yosi (the projects originator). He would act as country coordinator and be responsible for coordinating the partners' involvement in the project in Lae. FRI would be responsible for providing office facilities, technical support and assistance through its facilities and scientific expertise for surveys, reforestation and training through its staff.
- BK was responsible for assistance with in country logistics, including the provision of boat transport and providing expertise and assistance in the development of sustainable livelihood projects.
- VDT was responsible for the development of sustainable livelihood projects, their future marketing and management, in particular of the eco-tourism and eco-forestry components.
- Unitech were responsible for providing students for the scholars programme as well as additional technical support.
- DEC would provide permits and approvals for the project to operate and undertake specific work in PNG.

7 Finance and administration

7.1 Project expenditure

Item	Budget	Expenditure	Balance
Rent, rates, heating, overheads etc	4000.00	4000.00	0
Office costs (eg postage, telephone, stationery)	3000.00	3000.00	0
Travel and subsistence	13682.00 ^{1 (see 7.1.1)}	14913.00	1231.00
Printing	4000.00 ²	3422.09	-577.91
Conferences, seminars, etc	2000.00	489.00	-1511.00
Capital items/equipment	4800.00 ³	3052.00	-1748.00
Salaries (specify)			
Team leader	2000.00	2000.00	0
Research Leader	5000.00	5000.00	0
Education	4000.00	4000.00	0
Field Scientist	1500.00	1084.00	-416.00
Field Scientist	1500.00	1200.00	-300.00
Field Manager	1500.00	1500.00	0
FRI Staff	1000.00	978.00	-22.00
Eco Tourism Staff	500.00	500.00	0
Guides	1000.00	978.00	-22.00
TOTAL	49482.00	46116.09	-3365.91

7.1.1 Agreed changes to proposed budget

1. Travel and Subsistence was adjusted from £11,000.00 to include £2,682.00 rolled forward funds from Year 1 under spend.
2. Printing was adjusted from £3,000 to include £2,000.00 rolled forward from Year 2 under spend. A further £1,000.00 was deducted to adjust for the accounting error that was made in the summing of the Salaries section of the original grant proposal.
3. Capital Items was adjusted from £3,000.00 to include £1,800.00 rolled forward funds from Year 1 under spend.

7.1.2 Explanation of Variances

(i) Printing

This budget line was over estimated in proposal and the project saw an under spend in Year 2 and Year 3. The under spend did not effect the final outputs of the project.

(ii) Conferences and Seminars

A suitable conference for dissemination of project findings was not available during the reporting period for the project. It was discussed with Darwin that these funds will be postponed till either a suitable conference is confirmed or until Darwin recall the funds.

(iii) Capital Items

The under spend in this section has been previously discussed with Darwin and £2000 from this section has been postponed till the procurement of the sawmill for the eco-forestry component as discussed in section 4.3 (iii).

(iv) Field Scientists

A Field Scientist appointed from the UK experienced severe delays in getting their visa and hence did not spend a full year working in the field. The salary paid to them reflects this. A second locally employed Field Scientist was also paid a salary in line with the amount of time spend working on the project.

7.1.3 Capital Items

The majority of capital items purchased for the project consisted of building tools and materials that were used for project outputs as described in section 4.3 (i), (ii) and (v). These included items such as spades, other hardware, fencing, nails and wire. Other capital items include laptop batteries, laptop power adapters, safety equipment for trekking, stoves and other cooking equipment. A full list of these including costs was submitted to Darwin for the project financial audit.

The sawmill for eco-forestry component along with associated safety equipment, still needs to be procured.

7.2 Additional funds or in-kind contributions secured

No additional funds were secured in country but the project did receive invaluable contributions from other parties. The project received valuable support from Allen Allison of the Bishops Museum, Hawaii in relation to the biodiversity research programme. Dr. Allison provided vital information regarding herpetofauna identification, the loan of scientific equipment (sound recording equipment) and the provision for and identification of voucher specimens. Within Lae the project received additional logistical assistance from Roger Titley, formerly with Coastal Fisheries and now of MAREMCO.

Within the UK JFA supplied additional surveying equipment including batbox's, MP3 recording devices as well as various software packages. Through liaison with UPNG, the GIS data and relevant manuals were secured. JFA also co-ordinated the donation, collection and shipping of books from UK schools to PNG for the resource centre at Zare-Aingse Primary School. Shipping costs were done free by Swire Shipping Ltd.

7.3 Value of DI funding

The DI funding financed the operation within PNG 100%. Given the inability of many of the project partners to uphold their agreements within the original MoU the Darwin funding was vital to the completion and achievements of the project. Without it the project would not have been possible.

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

Project summary	Measurable Indicators	Progress and Achievements April 2006 - March 2009
<p>Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but constrained in resources to achieve</p> <ul style="list-style-type: none"> • The conservation of biological diversity, • The sustainable use of its components, and • The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources 		<p>(report on any contribution towards positive impact on biodiversity or positive changes in the conditions of human communities associated with biodiversity eg steps towards sustainable use or equitable sharing of costs or benefits)</p>
<p>Purpose</p> <p>Threatened forest resources of the Waria Valley are effectively conserved and sustainably used through enhancing the capacity of local researchers and stakeholders, whilst effecting alternative livelihoods for local land managers/owners</p>	<p>New knowledge of local forest biodiversity.</p> <p>Biodiversity monitoring and community management system by Yr3.</p> <p>Evidence of regeneration by Yr 3.</p> <p>Self-sustaining forestry and eco-tourism enterprises by Yr 3.</p>	
<p>Output 1.</p> <p>Forest biodiversity resource assessment programme.</p>	<p>GIS-mapped forest data for Waria Valley, with 10 local counterparts trained in Yr2 & Yr3.</p>	<p>GIS mapping and biodiversity field surveys completed in March 2009.</p> <p>Total of 9 local counterparts trained in biodiversity assessment programme</p>
<p>Activity 1.1</p> <p>Field Surveys</p>	<p>Yr 2: Continued biodiversity surveys and GIS development.</p> <p>Yr 3: GIS completion and ongoing monitoring led by locally trained personnel.</p>	<p>Biodiversity assessments were carried out into 6 taxonomic groups across 12 sites within the Waria Valley</p> <p>GIS maps created of habitat boundaries, settlements and major features of the valley</p>
<p>Activity 1.2</p> <p>Training</p>	<p>Yr 1&2: Biodiversity training courses.</p> <p>Yr 1 – 3: Annual reviews</p>	<p>Biodiversity training carried out in Years 2 – 3.</p> <p>Biannual reviews completed during Years 2 – 3.</p>

<p>Output 2. Community nursery and associated restoration programme implemented with associated community conservation agreements.</p>	<p>Strategy development facilitated by village council representatives in consultation with MBK/VDT by Yr1, enacted & monitored by Yr2 & Yr3.</p>	<p>Reforestation scheme and associated nursery established in Year 2. Guidelines for reforestation produced.</p>
<p>Activity 2.1 Restoration</p>		<p>Over 100 trees planted in the primary reforestation area. Additional groups were supported with polybags and specialist help.</p>
<p>Output 3. Small scale forestry and milling co-operative operational.</p>	<p>Co-operative mill with plan established Yr1. Operational Yr2 & Yr3.</p>	<p>Delayed due to deployment delay and problems with the key partner. Year 3 resulted in collaboration with Forcert to begin implementation. Registration process of a community saw milling co-operative underway.</p>
<p>Activity 3.1 Forestry Initiative</p>	<p>Yr 1: small-scale forestry plan developed, agreed and implemented. Yr 2-3: Alternative incomes generated.</p>	<p>Development of saw milling operation through Forcert will result in full plans being developed and implemented.</p>
<p>Activity 3.2 Stakeholder workshops</p>	<p>Yr1: Project planning workshops. Yr 1&2: Training courses. Annual reviews (Yr 1-3)</p>	<p>Numerous stakeholder consultations were held during Year 3 to ascertain level of interests and to organise those interested parties into agreeing a business structure. Training will be given under the Forcert scheme.</p>
<p>Output 4. Education/Training programme completed</p>	<p>10 students/yr trained (UniTech). Local schools adopt education programme.</p>	<p>Education programme adopted in local schools and a total of 12 Unitech students trained. Training was unable to occur in Year 3 due to difficulties being experienced by Unitech.</p>
<p>Activity 4.1 Education/Training</p>	<p>Yr 1 & Yr 2: training programme for scholar students. Yrs 1-3: Education programmes implemented in schools and teachers trained by Yr 2.</p>	<p>No training in Year 1 due to deployment delay. Scholar training throughout Years 2 and 3. Education programmes implemented in 3 local Primary schools within the area in Year 2.</p>

Activity 4.2 Production of educational aids	Yr 1: Education manuals ready for schools	Education manuals and posters were delivered to schools at the start of Year 2. Additional manuals and posters were produced during Years 2 – 3. In total 3 local Primary schools received education materials. Additional books from UK schools were supplied for the resource centre at Zare-Aingse Primary School.
Output 5. Eco-tourism centre established (using local materials).	Conversion of centre completed by Yr 2.	An eco-tourism centre, the Unu Resource Centre (URC) was already established within the valley. The construction of another eco-tourism centre in close proximity would not have any further beneficial results. It was decided to focus efforts on improving the existing centre and the training of potential staff and on the potential for the development and promotion of eco-tourism in the valley. In addition other sustainable livelihood schemes were developed through community consultation and implemented.
Activity 5.1 Stakeholder workshops	Yr1: Project planning workshops. Yr 1&2: Training courses. Annual reviews (Yr 1-3)	Stakeholder consultations were held with the URC committee during Years 2 and 3 to ascertain areas for assistance and improvement with regard the centre and its operation. Staff received eco-tourism training during years 2 – 3.
Activity 5.2 Eco-tourism centre constructed and operational	Local construction of centre and staff training (Yr 1). Yr 2-3: start operating and income generation	Already constructed and operational. Maine Winny, a tourism officer with VDT was commissioned to do a study into the tourism potential of the Waria Valley and establish guidelines and recommendations for developing tourism with the valley in Year 3.
Activity 5.3 Additional sustainable livelihood schemes implemented	Yr1: Consultation with community regarding livelihood options Yr 2-3: implementation of livelihood schemes and associated training	Community consultations carried out by Cossey Yosi in Year 1. Subsequent community consultations carried in Year 2 after the deployment of the international staff. Implementation of aquaculture, poultry, piggery, coconut oil, NTFP, women's group and water schemes in Years 2 – 3.
Output 6. Local community conservation model disseminated.	Bi-annual radio broadcasts, newspaper features & newsletters	3 radio broadcasts, 8 newspaper articles, 9 newsletters (in three languages) within PNG detailing the project completed. Additional newsletters, website features within the UK
Activity 6.1 Media Outputs	Yrs 1-3: Bi-annual radio broadcasts, newsletters and newspaper out. NGO newsletters (various dates).	Year 1 2 newspaper articles, 2 in Yr 2 and 4 in Yr 3. Radio broadcasts and PNG newsletters were done from Years 2 – 3.

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

Project summary	Measurable Indicators	Means of verification	Important Assumptions
Goal: To draw on expertise relevant to biodiversity from within the United Kingdom to work with local partners in countries rich in biodiversity but poor in resources to achieve <ul style="list-style-type: none"> • the conservation of biological diversity, • the sustainable use of its components, and • the fair and equitable sharing of benefits arising out of the utilisation of genetic resources 			
Purpose Threatened forest resources of the Waria Valley are effectively conserved and sustainably used through enhancing the capacity of local researchers and stakeholders, whilst effecting alternative livelihoods for local land managers/owners.	1) New knowledge of local forest biodiversity. 2) Biodiversity monitoring and community management system by Yr3. 3) Evidence of regeneration by Yr 3 4) Self-sustaining forestry and eco-tourism enterprises by Yr 3.	1) Field survey reports and associated papers published. 1-4) Progress reporting by CCC/MBK/VDT. 3-4) Livelihood generation reports submitted with photographic record to Darwin.	1) No assumptions 2-4) Partner NGOs, community leaders and stakeholders continue to co-operate and remain committed to the project. 2-4) Experienced counterpart staff and trained stakeholders continue their participation for duration of the project.
Outputs 1) Forest biodiversity resource assessment programme. 2) Community nursery and associated restoration programme implemented with associated community conservation agreements. 3) Small scale forestry and milling co-operative operational. 4) Education/Training programme completed. 5) Eco-tourism centre established	1) GIS-mapped forest data for Waria Valley, with 10 local counterparts trained in Yr2 & Yr3. 2) Strategy development facilitated by village council representatives in consultation with MBK/VDT by Yr1, enacted & monitored by Yr2 & Yr3. 3) Co-operative mill with plan established Yr1. Operational Yr2 & Yr3. 4) 10 students/yr trained (UniTech).	1) GIS output submitted to partners (FRI), technical reports/papers & management plan published. 2) Conservation agreements endorsed and signed. Physical presence of nursery areas, with photo documentation of these and regenerated areas. 3) Co-op agreement signed. Financial & product reports.	2) Trained counterparts remain committed to the project. Plans/reports are used locally. Active and continued local participation by stakeholders. 3) Sustainable management principles adopted, and sufficient market for products. 4) Trained teachers remain at schools, education materials still used. Students remain committed.

<p>(using local materials).</p> <p>6) Local community conservation model disseminated.</p>	<p>Local schools adopt education programme.</p> <p>5) Conversion of centre completed by Yr 2.</p> <p>6) Bi-annual radio broadcasts, newspaper features & newsletters.</p>	<p>Photo documentation.</p> <p>4) One teacher/school trained. Education & training outputs published. Copies of certificates of students.</p> <p>5) Report on facilities and programmes at centre, with feedback from customers by Yr 3.</p> <p>6) Copies of media outputs sent to Darwin.</p>	<p>5) Effective business plan & marketing of eco-tourism facilities to sustain custom and income.</p> <p>6) Media outputs reach and influence intended audience.</p>
<p>Activities</p> <p>1) Stakeholder workshops</p> <p>2) Field Surveys</p> <p>3) Restoration</p> <p>4) Education/Training</p> <p>5) Forestry Initiative</p> <p>6) Eco-tourism</p> <p>7) Media Outputs</p>	<p>Activity Milestones (Summary of project implementation timetable)</p> <p>1) Yr1: Project planning workshops. Yr 1&2: Biodiversity training courses. Annual reviews (Yr 1-3)</p> <p>2) Yr 1: complete initial surveys and define monitoring protocol. Yr 2: continued surveys and GIS development. Yr 3: GIS completion and ongoing monitoring led by locally trained personnel.</p> <p>3) Agreed community restoration plan (Yr 1). Nurseries developed & regeneration started Yr 2, continued Yr3.</p> <p>4) Yr 1 & Yr 2: training programme for scholar students.</p> <p>Yrs 1-3: Education programmes implemented in schools and teachers trained by Yr 2.</p> <p>5) Yr 1: small-scale forestry plan developed, agreed and implemented. Yr 2-3: Alternative incomes generated.</p> <p>6) Local construction of centre and staff training (Yr 1). Yr 2-3: start operating and income generation.</p> <p>7) Yrs 1-3: Bi-annual radio broadcasts, newsletters and newspaper out. NGO newsletters (various dates).</p>		

Annex 3 Project contribution to Articles under the CBD

Project Contribution to Articles under the Convention on Biological Diversity

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

Article No./Title	Project %	Article Description
		and equitable way of results and benefits.
16. Access to and Transfer of Technology		Countries shall ensure access to technologies relevant to conservation and sustainable use of biodiversity under fair and most favourable terms to the source countries (subject to patents and intellectual property rights) and ensure the private sector facilitates such assess and joint development of technologies.
17. Exchange of Information	5%	Countries shall facilitate information exchange and repatriation including technical scientific and socio-economic research, information on training and surveying programmes and local knowledge
19. Bio-safety Protocol		Countries shall take legislative, administrative or policy measures to provide for the effective participation in biotechnological research activities and to ensure all practicable measures to promote and advance priority access on a fair and equitable basis, especially where they provide the genetic resources for such research.
Other Contribution	40%	Smaller contributions (eg of 5%) or less should be summed and included here.
Total %	100%	Check % = total 100

Annex 4 Standard Measures

Code	Description	Totals (plus additional detail as required)
Training Measures		
1a	Number of people to submit PhD thesis	
1b	Number of PhD qualifications obtained	
2	Number of Masters qualifications obtained	
3	Number of other qualifications obtained	
4a	Number of undergraduate students receiving training	12 – Unitech fieldtrip 2007 (10), Unitech work experience (2)
4b	Number of training weeks provided to undergraduate students	2 – length of the Unitech fieldtrip course (1), 1 weeks intensive formal training for the work experience students and total of 10 weeks experience each.
4c	Number of postgraduate students receiving training (not 1-3 above)	
4d	Number of training weeks for postgraduate students	
5	Number of people receiving other forms of long-term (>1yr) training not leading to formal qualification(ie not categories 1-4 above)	16 – all local staff training i.e. guides, eco-tourism staff (15) and our national Field Scientist Oscar Pileng.
6a	Number of people receiving other forms of short-term education/training (ie not categories 1-5 above)	52 – national graduate volunteers (2), additional guides and local volunteer (5), locals trained as aquaculture trainers (4), locals attending aquaculture training course in Waria (28), locals attending book-keeping course in Waria (10), local teachers trained in computer skills (3).
6b	Number of training weeks not leading to formal qualification	10 - Graduate volunteers – 11 and 2 weeks experience with 1 weeks intensive formal training. Guides – 1 week training. Local volunteer – 4 weeks training. Aquaculture trainers – 1 week. Waria aquaculture – 1 week. Waria book-keeping – 1 week. Computer training – 1 week.
7	Number of types of training materials produced for use by host country(s)	9 – 5 primary school workbooks, 1 teachers aid, 1 biodiversity survey methodologies manual, 1 scholars lecture series, various school posters.
Research Measures		
8	Number of weeks spent by UK project staff on	97 – weeks spent by international field staff in country from May 7 th

Code	Description	Totals (plus additional detail as required)
	project work in host country(s)	May 7 th 2007 till 16 th March 2009. 8 staff worked for differing periods and times over the course of the 97 weeks in PNG. 2 JFA staff spent 12 weeks in-country over the course of the project.
9	Number of species/habitat management plans (or action plans) produced for Governments, public authorities or other implementing agencies in the host country (s)	1 – habitat management guidelines for implementation by the Waria community through the local NGO and local government.
10	Number of formal documents produced to assist work related to species identification, classification and recording.	
11a	Number of papers published or accepted for publication in peer reviewed journals	
11b	Number of papers published or accepted for publication elsewhere	3 – Technical Annex's will be published as a report on the project
12a	Number of computer-based databases established (containing species/generic information) and handed over to host country	1 – all project results including biodiversity results will be given to PNG project partners and institutions
12b	Number of computer-based databases enhanced (containing species/genetic information) and handed over to host country	All biodiversity results and GIS data will be given to institutions e.g FRI within PNG.
13a	Number of species reference collections established and handed over to host country(s)	1 – Herpetofauna specimens collected through Dr. Allison with the National Museum in Port Moresby
13b	Number of species reference collections enhanced and handed over to host country(s)	
Dissemination Measures		
14a	Number of conferences/seminars/workshops organised to present/disseminate findings from Darwin project work	
14b	Number of conferences/seminars/ workshops attended at which findings from Darwin project work will be presented/ disseminated.	1 – another to report project results is planned
15a	Number of national press releases or publicity articles in host country(s)	8
15b	Number of local press releases or publicity articles in host country(s)	
15c	Number of national press releases or publicity articles in UK	
15d	Number of local press releases or publicity articles in UK	
16a	Number of issues of newsletters produced in the host country(s)	9 – each in three languages

Code	Description	Totals (plus additional detail as required)
16b	Estimated circulation of each newsletter in the host country(s)	All project partners, NRI, British High Commission, Minister for Huon Gulf District and the local Waria Community (all councillors, village notice boards in 9 villages and hamlets, church and schools) est. population 2000
16c	Estimated circulation of each newsletter in the UK	On CCC website
17a	Number of dissemination networks established	
17b	Number of dissemination networks enhanced or extended	
18a	Number of national TV programmes/features in host country(s)	
18b	Number of national TV programme/features in the UK	
18c	Number of local TV programme/features in host country	
18d	Number of local TV programme features in the UK	
19a	Number of national radio interviews/features in host country(s)	
19b	Number of national radio interviews/features in the UK	
19c	Number of local radio interviews/features in host country (s)	3
19d	Number of local radio interviews/features in the UK	
Physical Measures		
20	Estimated value (£s) of physical assets handed over to host country(s)	£10,250
21	Number of permanent educational/training/research facilities or organisation established	
22	Number of permanent field plots established	
23	Value of additional resources raised for project	
Other Measures used by the project and not currently including in DI standard measures		
	Number of sustainable livelihood projects established within the Waria Valley	114 fishponds established in area 23 poultry projects established 5 piggery projects established Tree nursery and model reforestation area established 2 spring protection projects completed

Code	Description	Totals (plus additional detail as required)
		Assistance with bamboo furniture, coconut oil and women's group projects.

Annex 5 Publications

Type * (eg journals, manual, CDs)	Detail (title, author, year)	Publishers (name, city)	Available from (eg contact address, website)	Cost £
Report	Dawson, J., Tamblyn, A., Turner, C. & Raines, P. (2009) Waria Valley Community Conservation and Sustainable Livelihoods Programme Annex A: Biodiversity Research Programme.		PDF from authors	Free
Report	Dawson, J., Tamblyn, A., Turner, C. & Raines, P. (2009) Waria Valley Community Conservation and Sustainable Livelihoods Programme Annex B: Community Education and Training.		PDF from authors	Free
Report	Dawson, J., Tamblyn, A., Turner, C. & Raines, P. (2009) Waria Valley Community Conservation and Sustainable Livelihoods Programme AnnexC: Sustainable Livelihoods Development.		PDF from authors	Free
Report	Dawson, J., Tamblyn, A., Turner, C. & Raines, P. (2009) Waria Valley Community Conservation and Sustainable Livelihoods Programme Annex D: Media Outputs		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2009) Lower Primary School Workbook: Ecology, relationships and interactions.		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2009) Upper Primary School Workbook: Working scientifically and living things.		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2009) Upper Primary School Workbook: Science and the home.		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2009) Upper Primary School Workbook: The Earth and beyond.		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2009) Upper Primary School Workbook: Ecology, relationships and interactions.		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2007) Teachers Workbook: Ecology, relationships and interactions.		PDF from authors	Free
Manual	Tamblyn, A., Turner, C. & Raines, P. (2007) Training manual for conducting biodiversity surveys		PDF from authors	Free

Manual	Tamblyn, A., Turner, C. & Raines, P. (2007) Lecture series for scholars		PDF from authors	Free
--------	--	--	------------------	------

Annex 6 Darwin Contacts

Ref No	15/041
Project Title	Waria Valley Community Conservation and Sustainable Livelihoods Programme (WVCP)
UK Leader Details	
Name	Peter Raines MBE
Role within Darwin Project	Project Leader
Address	Coral Cay Conservation Elizabeth House 39 York Road London SE1 7NJ
Phone	020 7620 1411
Fax	020 7921 0469
Email	psr@coralcay.org
Other UK Contact (if relevant)	
Name	Dr. Craig Turner
Role within Darwin Project	Research Leader
Address	Jaquelin Fisher Associates Ltd. 4 Yukon Road London SW12 9PU
Phone	020 8673 2001
Fax	
Email	craig@jfa.co.uk
Partner 1	
Name	Cossey Yosi
Organisation	FRI and PhD student at the University of Melbourne
Role within Darwin Project	Country coordinator / Host country partner
Address	
Fax	
Email	cyosi@pgrad.unimelb.edu.au
Partner 2 (if relevant)	
Name	Lukis Romaso
Organisation	Bris Kanda Inc. – General Manager
Role within Darwin Project	Host country partner
Address	
Fax	
Email	lromaso.briskanda@global.net.pg

Partner 3	
Name	Steven Yandima
Organisation	Village Development Trust – General Manager
Role within Darwin Project	Host country partner
Address	PO BOX 2397 Lae Morobe Province Papua New Guinea
Fax	
Email	syandima.teff@global.net.pg
Partner 4	
Name	Head of Forestry (all previous contacts have left)
Organisation	University of Technology, Lae
Role within Darwin Project	Host country partner
Address	Private Mail Bag Lae 411 Morobe Province Papua New Guinea
Fax	
Email	emaigu@fo.unitech.ac.pg

Annex 7 **WVCP NGO guidelines, aims and objectives**

AIM “To protect the fauna and flora of the Waria Valley for the long-term benefit of the local community through research, education and the promotion of sustainable livelihood projects within the community”

- Objectives**
1. Promote environmental good practice within the local communities through the implementation of a management plan monitored and steered by the WVCP. This primarily focuses on reforestation and maintaining buffer zones along waterways.
 2. Encourage and promote further biological research within the Waria Valley to further knowledge of its ecological systems so that it can be protected in the future through appropriate management strategies and monitoring.
 3. Encourage and promote environmental education within the local primary schools and throughout the general community as a whole.
 4. Encourage and promote sustainable livelihood projects within the community that increase the general well-being of the community whilst reducing pressure and preserving the natural environment.

- General rules:
- (i) The NGO will be run as a non-profit organization. Its aim is not to make money for the individuals involved. Any money gained by the NGO will be to cover administrative costs as well as a nominal fee for the programme manager for his facilitation work.
 - (ii) All accounting from the WVCP will be completely transparent and available to any member of the public. This will hopefully avoid the major problem faced by all other groups who have operated within the community of fund mismanagement.
 - (iii) The WVCP will work alongside the local levels of government and other groups such as the BK Local Level Affiliate to help achieve its aim and objectives.
 - (iv) All members of the NGO will be appointed and follow the rules as set out in the constitution

Guidelines for the implementation of the WVCP Management Plan

General Guidelines

- 1) Before signing up to the management plan all family groups etc must register with the ILG – a legal land group registration in PNG that will give legal protection against other group's that wish to cause disruption or damage.
- 2) All participating groups must sign up to the Habitat Management (and the Coastal Management if living on coastal land) section of the plan.
- 3) All other sections are entirely optional for each group. They may sign up to as many or as few as they wish.

Habitat Management

AIM “To protect the natural environment by promoting ecologically sound practices amongst the local community” (This is essentially Objective 1 of the NGO)

- Objectives**
1. Project manager and NGO are to monitor all the groups who sign up to the management plan to ensure guidelines are being followed
 2. Through education and awareness the NGO, either directly or through engagement of other groups, should expand the idea of environmental good practice to the wider community.

- Reforestation: (i) All groups signing up to the plan must designate a portion of their land to reforest.
- (ii) The species of trees planted is up to the individual groups but must be species native to the Waria Valley.
- (iii) A methodology guide on reforestation practice and maintenance will be left with the WVCP.
- (iv) The WVCP has responsibility to ensure that the group is maintaining the area and failure to do so will result in the loss of benefits through the rest of the management scheme.
- Buffer Zones: (i) All groups must agree to keep a buffer of natural vegetation along all waterways on their land when making gardens.
- (ii) The size of the buffer depends on the waterway and are as follows:
Major rivers e.g. Waria, Giu – 10m minimum, preferably 20m
Small streams and creeks – 5m.
- (iii) This will help prevent bank erosion, damage to the garden areas due to flooding and protects the waterways from becoming dirty.
- (iv) The WVCP has responsibility to ensure that the group is maintaining the area and failure to do so will result in the loss of benefits through the rest of the management scheme.
- Ridge Tops: (i) All groups signing up to the plan must agree to maintain 20m natural forest on the top of ridges if gardening.
- (ii) This will help prevent large scale soil erosion in times of rain and subsequent destruction and loss of gardens.
- (iii) The WVCP has responsibility to ensure that the group is maintaining the area and failure to do so will result in the loss of benefits through the rest of the management scheme.
- Mount Unu: (i) All gardening on the slopes of Mount Unu is banned as it is a culturally sacred site.
- (ii) Lines and borders will be delineated as per the GIS map that will be developed as part of the project report.
- (iii) Any areas that have been subject to gardening or tree felling will be reforested following the reforestation guidelines detailed earlier.

Sustainable Livelihoods

AIM “To promote sustainable livelihoods that increase the well-being of the community that protect, enhance or reduce damage to the natural environment”

Objectives 1. To develop links with other NGO's and development groups so that they may come into the valley and develop relevant projects.

Research

AIM “To encourage biological and ecological research within the valley to further knowledge of its ecological systems and ensuring both researchers and the local communities benefit”

Objectives 1. Project Manager is to develop contacts with researchers through project existing project partners FRI, Unitech, Bris Kanda and VDT with the intention of encouraging further work to come inside the Waria Valley.

- General rules: (i) All future researchers will pay a fee for the work they are carrying out (amount of fee has to be decided).
- (ii) This fee will be paid to the WVCP and will be split between the WVCP and all groups who have signed up to this part of the management plan, regardless of whether it is their land that is being used for the research.

- (iii) The groups whose land is being used for the research will have the first refusal to provide any local staff that the research team may require. Should they not provide the required staff then the WVCP will appoint staff.
- (iv) Local staff wages will be set by the WVCP based on the current levels.

Rules for researchers: (i) Researchers will not be allowed to bio-prospect i.e. take 1000's of specimens or samples.

- (ii) Specimens can be taken with the landowners consent.
- (iii) Researchers must act in an environmentally and culturally sensitive way e.g. no pollution, clearing away all rubbish etc.

Rules for landowners: (i) Can not charge researchers for anything else after the agreement has been made – local staff wages are agreed beforehand, porters to be agreed as necessary, food to be brought by researchers at the local rate.

- (ii) If providing local staff, those staff will be responsible under the staff guidelines of the WVCP. The WVCP has the right to terminate any local staff should the research team have good reason to wish this.

Tourism

AIM “To promote eco-tourism in the Waria Valley as a sustainable livelihood practice for the local community encouraging the preservation of the natural environment”

Objectives

1. With the assistance of project partners, especially Bris Kanda, to develop avenues which attract tourism to the Waria Valley.
2. Develop awareness of the benefits of eco-tourism to the local community within the valley either directly or through the engagement of other groups.

General rules: (i) All future tourists will pay a small fee if they wish to access land for walking, bird watching etc. (amount of fee has to be decided).

- (ii) This fee will be paid to the WVCP and will be split between the WVCP and all groups who have signed up to this part of the management plan, regardless of whether it is their land that is being used.
- (iii) The fee paid will also be used to pay the local guide a fixed rate. The guide be appointed by the WVCP and will be someone with the necessary training.

Rules for tourists: (i) Tourists must act in an environmentally and culturally responsible way – no littering etc.

Rules for landowners: (i) Can not charge tourists extra for ‘guiding’, seeing a special site or taking photos.

Eco-forestry

AIM “To promote eco-forestry as a sustainable livelihood for the community”

Objectives 1. Maintain links with Forcert and help facilitate their working in the valley

If deemed suitable to enter the Forcert scheme then participants will have to follow the rules and guidelines set out by Forcert.