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The Business and Biodiversity Offset Program Final Report

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**The Business and Biodiversity Offsets Program (BBOP)
Final Report to USAID (October 2005-September 2009)**

1. Key Achievements and Lessons Learned:

Key Achievements

Promoting the concept

When BBOP started at the end of 2004, the concept of biodiversity offsets was little known, often misunderstood, barely tried and untested in most parts of the world. It was rarely acknowledged as a tool that might contribute to sustainable development. There was no international forum to bring together groups from all sectors of civil society to discuss and work on this promising, but complex and controversial mechanism. Furthermore, there were few pilot projects with explicit goals of ‘no net loss’ or a ‘net gain’ of biodiversity to which people could contribute their ideas, and case studies of voluntary biodiversity offsets could be counted on the fingers of one hand.

BBOP, launched by Forest Trends and with co-Secretariat member organizations Conservation International and Wildlife Conservation Society, stimulated and contributed to increasing global interest and commitment to biodiversity offsets. By 2009, biodiversity offsets have attracted considerable interest and support, and this continues to grow. Many environmental managers and government planners are familiar with the idea due to BBOP’s efforts. More governments have introduced offset policy and others are now developing it. Banks are increasingly including biodiversity offsets in their loan conditions, and more companies see that voluntary biodiversity offsets make business sense and are using them as a means to secure good working relationships with communities and government authorities. Industry associations, inter-governmental organizations, non-governmental organizations, academics and the media have all published on the subject.

Practical experience and broadening engagement

Shell, Newmont, AngloAmerican, Sherritt, Solid Energy New Zealand and the City of Bainbridge Island have all stepped up to the challenge, contributing a set of pilot projects that are being designed with the involvement of members of the BBOP Advisory Committee. The BBOP Secretariat has held discussions with representatives from governments as varied as China, UK, France, the Netherlands, Qatar, Ghana, Uganda, Madagascar, Brazil, Mexico and New Zealand, all of whom have expressed interest in further work and policy development on biodiversity offsets. In Brazil, the Brazilian Biodiversity Fund (FUNBIO) is collaborating with BBOP and replicating its multi-stakeholder approach to developing best practice on voluntary offsets at the country level.¹

Under a Decision of the Conference of the Parties to the Convention on Biological Diversity, the Secretariat of the Convention is to collaborate with BBOP and other relevant organizations to compile and/or make available: (a) case-studies; (b) methodologies, tools and guidelines on biodiversity offsets; and (c) relevant national and regional policy frameworks.² Similarly, a resolution at the most recent Conference of the Parties to the Ramsar Convention on Wetlands ‘encouraged decision makers, especially business leaders, to develop and adopt policies, strategies and operational approaches

¹ USAID funding provided support related to pilot project activity for the following pilot projects: AngloAmerican (South Africa); Sherritt (Madagascar); Newmont (Ghana) in Year 1; and for policy engagement in Year 1.

² See Decision IX/26, Promoting Business Engagement. Decisions IX/11 and IX/18 also mention biodiversity offsets. See <http://www.cbd.int/decisions/cop9/?m=cop-09>.

according to existing national and international guidelines and standards for ecosystem management, including wetlands, which avoid, remedy or as a last option 'offset' adverse impacts on wetland ecosystems, including considering the potential benefits that could be derived from the Business and Biodiversity Offsets Program (BBOP).³ BBOP has also conducted training workshops at events such as the IUCN World Conservation Congress in Barcelona and the 2007 and 2008 annual meetings of the International Association of Impact Assessment. The BBOP Learning Network of individuals and organizations worldwide now has over one thousand members, from Afghanistan to Zambia.

Developing principles, methods and tools

BBOP is a voluntary program that has operated by seeking consensus among the members of its Advisory Committee. The BBOP Advisory Committee members represent groups in society with diverse perspectives on environment and development from many different countries. They have worked hard to reach agreement on fundamental issues relating to biodiversity offsets, and to develop practical guidelines for offset design and implementation. Chief among this group's products is a set of ten basic principles, which members of the Advisory Committee unanimously support and hope that other companies, governments and civil society will also adopt as a sound basis for ensuring high quality biodiversity offsets. The principles provide the compass and framework for all the other BBOP products.

The full methodology toolkit was completed in May 2009 and in addition to the best practice principles includes: three core handbooks on offset design and implementation; resource papers on how biodiversity offsets relate to impact assessment and stakeholder participation; case studies of the BBOP pilot projects and non-BBOP offset experiences; and other support material. All of this material is available on the website: <http://bbop.forest-trends.org/guidelines> and included in a CD-Rom affixed to an Overview publication.

Lessons Learned

Pilot Projects and Offset Design

- More than 100 different methodologies are currently used around the world to quantify the loss and gain of species, natural habitats and ecosystem services. Numerous laws and public policies explicitly promote or require 'no net loss' or 'net gain', but rarely provide clarity on how the term should be interpreted and applied in the field. From the variety of methodologies available, no common currency has emerged as the most appropriate to quantify and compare loss and gain of biodiversity. Different approaches may be appropriate for determining no net loss in different settings, however BBOP has found that calculating these residual biodiversity losses and gains (after appropriate avoidance, minimization and on-site rehabilitation measures have been taken) requires at a minimum identifying and measuring both the type and amount of biodiversity affected. This typically involves some kind of quality (or condition) and area measure (largely habitat based but comprising a combination of habitat, species and landscape level proxy attributes). Quality x area metrics for biodiversity loss/gain are comparatively straightforward, yet sufficient ways of quantifying loss and gain. Further refinement of loss / gain quantification methods – and development of very simple methods for small residual impacts – is desirable.
- BBOP has responded to business partner recommendations to avoid prescriptive approaches, and has provided users with optional approaches to quantifying loss and gain. Principles-based approaches are welcome by business.

³ See Resolution X.12: Principles for partnerships between the Ramsar Convention and the business sector. http://www.ramsar.org/res/key_res_x_12_e.pdf.

- Landscape level planning is the key to successful and effective offset design.
- A shortage of well qualified consultants (appropriate language and conservation science skills and experience working with companies) familiar with the BBOP offset approach is a bottleneck to scaling up the uptake of biodiversity offsets.
- It is difficult for companies to design high quality biodiversity offsets without consulting stakeholders. A stakeholder (as defined in the [BBOP Stakeholder Participation Resource Paper](#) includes “persons or groups who are directly or indirectly affected by a project and/or offset, as well as those who are interested in a project and/or offset and/or have the ability to influence its outcome, either positively or negatively. They will also include persons or groups with use rights and/or tenure over land and resources”). Companies are uncomfortable consulting stakeholders before all relevant permissions (e.g. EIA, mining license) are obtained. Unless companies are prepared to engage stakeholders earlier, proper offset design will need to be concluded after all licenses are obtained. As there are efficiencies involved in gathering offset data during the EIA process, it may be wise to shape baseline studies to gather and involve stakeholders to the extent possible, resulting in provisional offset design, then ground-truth this through more thorough engagement of stakeholders in offset design once the formal licenses have been granted and the final investment decision taken.
- The experiences from our unsuccessful attempts to establish pilot projects in Kenya and Uganda point to some of the challenges and lessons learned when working with smaller developers. In Kenya, BBOP worked with the South Rift Landowners Association (SORALO), which hoped to construct and design an offset for a community managed ecotourism lodge and road. However the development project stalled due to a lack of funds, and hasn’t advanced past an initial feasibility study of the potential of broader community based tourism opportunities in the region. Extreme drought in the region is hampering further progress. In Uganda – the Gyelloba, Mabira Forest Lodge revealed the need for clear commitment for biodiversity offsets from the decision makers within an organization. Pilot activities at this site were ceased in FY 2007 due to critical management issues within the Gyelloba company, and a halt in construction of the Mabira ecolodge. The Mabira lodge was owned by African Challenge, a joint-venture between the company Gyelloba-Africa and the Ugandan company, the Alam Group. When BBOP entered into the relationship with Gyelloba-Africa, it was informed by the directors of the company that Gyelloba-Africa was a subsidiary of its parent company, Gyelloba, in the Netherlands. However, there was no legal relationship between Gyelloba-Africa and Gyelloba in the Netherlands. Gyelloba-Netherlands underwent a series of investigations to sort out the situation and ceased all Gyelloba activities in Uganda, including the BBOP project. BBOP regretted losing these pilots and has been grateful for the support of USAID in Kenya and Uganda. BBOP feels that offsets in general and our methodologies in particular are still appropriate and feasible for smaller developers, but ensuring adequate funding and management capacity for the underlying development project for small developers will be an added layer of pilot selection criteria in our future work.
- It is possible to do retrospective offsets (only) where existing or proxy data enables planners to have a high degree of confidence that the project’s existing impacts are capable of being offset and where the data is adequate for the design of like-for-like-or-better offsets of a scale commensurate with the impacts.
- Fundamentally, the challenges with biodiversity offsets lie in the realm of political will for offset policies and the strength of the voluntary business case, not the technical aspects of offset design and implementation.
- It is harder to make the voluntary business case for pilot projects during difficult economic times.
- It is difficult to build the trust of companies to share offset design data with a variety of stakeholders such as NGOs.

- The experiences of the pilot portfolio were intended to inform the toolkit development in an iterative manner. Typically, this happened through bilateral conversations between the Secretariat, consultants and the pilot project participants; at BBOP Advisory Committee meetings; and at workshops dedicated to reviewing and refining the methodologies. It was not always possible, however, to wait for all pilots to complete the various stages of the biodiversity offset design and implementation to develop the methodologies. Often the methodology toolkit advanced ahead of the on-the-ground pilot experiences primarily because the development project timelines differed from those of the BBOP toolkit development timeline. Often times the development project timelines stretched out much longer than originally anticipated and in some cases were delayed due to unpredictable situations like unanticipated regulatory hurdles or constraints resulting from the financial crisis. The fact that the methodologies often advanced ahead of the pilot project experience caused companies some concern, however, the same companies were asking for methodologies to use at their pilot sites. An iterative process to offer guidance to pilots but also to allow pilot experiences to inform improvement of methodologies is important and also challenging. One of the goals in Phase II of BBOP is to more effectively align these two processes so that the pilot project experiences are more fully reflected in future versions of the methodologies. The experiences from each of the BBOP pilot projects were documented in a set of Case Studies which can be found at the BBOP website: <http://bbop.forest-trends.org/guidelines/index.php>
- There are many different stages in a project lifecycle to engage in biodiversity offset design, from pre-feasibility strategic environmental assessments through to post-closure, bringing remediation and restoration up to the level of 'no net loss.' It is easier to show rapid outcomes later in this time horizon, but the quality of offsets and their utility as a land-use planning and risk management tool is likely to be better if they are considered earlier in the time horizon. The 'norm' for biodiversity offset design (for individual projects) is likely to be engagement with developers when they are developing their environmental impact assessments, which is the point when the details of the project and thus likely impacts on biodiversity can be assessed with reasonable accuracy. Incorporating biodiversity offset design into EIA preparation and subsequent environmental management also offers savings in time and cost. However, it may be possible to work with policy makers or several companies offered concessions in a given area to prepare a strategic environmental assessment, providing a better context for the design of biodiversity offsets for individual projects and indeed the possibility of aggregated offsets and conservation banks, which offer land-use planning, conservation optimization and economy of scale advantages.

The BBOP coalition

- A multistakeholder process is essential to ensure offset policy and practice meets society's expectations, works for developers and is credible.
- Companies will generally be the ones designing offsets. For them, multistakeholder processes are important for credibility (which underpins the business case). But companies find it hard to make the time to contribute to a multistakeholder process, particularly during an economic downturn.
- It will be increasingly important to support work on policy frameworks and internationally recognized standards for biodiversity offsets to strengthen the business case for offsets.

2. BBOP Program Background:

The Business and Biodiversity Offsets Program (BBOP) is an international partnership between companies, governments and conservation experts established to explore biodiversity offsets. BBOP is responding to demand from industry, government and the conservation community for biodiversity

offsets that will address the key threat to biodiversity posed by habitat loss. BBOP envisions mainstreaming conservation into the project planning of companies and public-sector developers in a wide range of sectors by setting up cross-sectoral partnerships between companies and public developers and conservation and development experts in NGOs, academia and development agencies; these partnerships will collaborate with government representatives and local communities.

Over the course of this grant, BBOP worked towards achieving the three objectives originally outlined in the proposal to USAID:

1. Create a portfolio of biodiversity offset pilot projects;
2. Develop, test, and disseminate best practices and guidance for designing and implementing biodiversity offsets;
3. Catalyze systemic change that will encourage private and public developers to use biodiversity offsets.

Pilot Projects:

BBOP's first objective was to create a portfolio of practical pilot projects, each voluntarily undertaking a biodiversity offset in the context of a project such as the development of a mine, an oil and gas exploration and development, or real estate construction. BBOP has supported and learned from the experience of six pilot projects (details below), some of which began with the program's inception, with others joining later. In each of these projects, the developer is undertaking the biodiversity offset on a purely voluntary basis, rather than as a regulatory requirement. Each of the pilot projects is only part way through the process of designing an appropriate biodiversity offset. The pilot projects are led by the developer undertaking the voluntary biodiversity offset, but in each case, the developer is also working with a group of advisors drawn from local stakeholders and experts and some members of the BBOP Advisory Group.

MADAGASCAR: The Ambatovy nickel mine is a joint venture between Sherritt International, Sumitomo Corporation, Kores, and SNC Lavalin Incorporate. It is located in the eastern Republic of Madagascar with a mine site near Moramanga in the Alaotra-Mangoro Region and a large processing plant in the Toamasina, Atsinanana Region. Production is scheduled to begin in 2010, with full capacity to be achieved by 2012. The project includes pipelines, a processing plant, tailings and dock extension. Principal impacts occur over approximately 2100 hectares of ecologically sensitive natural forest mosaic of the eastern mid-altitudinal forest corridor. The mine lies in a hilly, forested area on a horst between the first and second escarpment at an altitude of 1100 m. The area is notable for its deep laterite profile resulting from eroded ultramaphic bedrock from an 80 million year old intrusion containing nickel and cobalt. The top layer is characterized by a ferrecrete crust that, together with the particular soil chemistry, brought about an edaphic vegetation type best described as an azonal, sclerophyllus forest thicket. There will also be residual impacts from the slurry and water pipelines. Two sections of the pipeline cross sensitive habitats: the first three kilometers of zonal, near-primary forest and the crossing of the Ankenina Zahamena Corridor.

GHANA: Newmont Ghana Gold, Ltd undertook a pilot with their Akyem project in the Akyem Birim North District of the Eastern Ghana Region. The proposed project area is located within the Upper Guinea Forest Hotspot, which lies within the Moist Semi-deciduous Zone and is characterized by steep hills and an undulating landscape. The proposed project area is a complex of agricultural lands from which the original forest has been removed. The development involves an open pit mine, construction of a waste rock disposal facility, tailing storage facility, ore processing plant, water storage dam and

reservoir, water transmission pipeline, environmental control ponds and ditches, haul and access roads, and support facilities. Construction and subsequent mine operation will directly affect 1,051 ha of land through removal of vegetation, soil and subsoil. Of this total area, approximately 71 hectares of the open pit facility is located in heavily degraded land within the Ajenjua Bepo Forest Reserve. The remaining footprint affects oil palm, cocoa, fallow, secondary forest, food crops, citrus, teak, and wetland vegetation.

SOUTH AFRICA: AngloPlatinum expanded production on an existing platinum ore mine in Overysel-Zwartfontein farms, in Limpopo Province, South Africa. Expanded operations on the Potgietersrust Platinums Limited mine include: open-cast mining of platinum ore, a concentrator complex, waste residue facilities, a tailings dam and supporting infrastructure. The impacted area consists of 2,413 ha of Makhado Sweet Bushveld in the Northern Savanna Biome. The predicted residual impacts mostly concern habitat loss and community relocation. Topography is generally gently undulating with some hilly outcrops; 'natural' vegetation would have consisted of an open to closed woodland with a diverse tree flora of 5-10m canopy height, however the site was highly degraded at the time of project expansion.

Photo #1: General view of impact area, AngloPlatinum Pilot Project, South Africa



QATAR: The Shell Pearl Gas-to-Liquids (GTL) Project is located in the Ras Laffan Industrial City Complex (RLIC) in Qatar within the Arabian Gulf desert and semi-desert ecoregion. The project includes two offshore unmanned wellhead platforms and associated wells, two offshore pipelines transporting wellhead gas and fluids to shore, and a GTL plant. The predicted total impact relates to the loss of terrestrial and coastal habitat, specifically 824.5 ha of sandy/ silty, rocky, sabkha, salt marsh and sand beach habitats. Marine impacts are based on pipeline, platforms, and harbor use.

NEW ZEALAND: Solid Energy New Zealand Ltd has contributed a pilot project through the Strongman Coalmine in Greymouth, New Zealand. This underground and surface coal mine was in operation from 1939 to 2004 and has since been the subject of significant rehabilitation work. The mine footprint and associated infrastructure covers 60 hectares of the Nelson Coast Temperate Forests. The terrain is steep and mountainous with mixed beech and podocarp forest grading to pink and yellow pine dominated sub-alpine vegetation on the upper slopes.

UNITED STATES: The City of Bainbridge Island's pilot project in Washington State, US encompasses over 16 ha of mature forest and extends into the tidelands of Blakely Harbor. The area is located in the Puget Sound Area of the *Tsuga heterophylla* zone, which contains coniferous forest dominated by Douglas fir, western hemlock and western red cedar. The shoreline portion of the property includes 600 linear meters of highly impacted intertidal habitat compromised by a public roadway and associated rock bulkhead.

Best Practices and Guidance:

For companies to adopt biodiversity offsets, they need guidance on how to make them work. Prior to BBOP, the only guidelines on offset design were those for specific regulated environments (such as wetland and conservation banking in the US). There was no guidance on offset design for companies developing voluntary offsets anywhere in the world. BBOP aimed to develop that guidance and make it widely available to industry, policy makers, development agencies, academics, and others via a methodology toolkit. The thinking on biodiversity offsets is still evolving around the world, as companies, conservation groups and other stakeholders develop projects and experiment with different approaches. For this reason, and since the circumstances in which biodiversity offsets may be used will vary considerably around the world, the guidance within the BBOP toolkit would not be intended to offer a single route to design and implement biodiversity offsets, but rather to raise a set of issues for consideration and offer some methods that companies and other interested stakeholders could apply to their specific ecological, institutional and political context.

Systemic Change:

The main objective of BBOP work in policy development was to catalyze systematic change to encourage private and public developers to use biodiversity offsets. Using biodiversity offsets to secure more and better conservation at all major development sites will continue to be a major systemic change for industries and governments, with enormous potential to conserve biodiversity. In order to scale-up program impacts beyond the proposed pilot sites, companies and governments must change policies and practices. BBOP aimed to explore these required changes by working with policy makers in national government and international policy forums.

3. Measures of Success:

Pilot Projects:

MADAGASCAR: This project has made significant strides in the offset design process (see the box on pages 11 - 12 describing how the Ambatovy project has followed the eight steps of BBOP's offset design approach). The mitigation hierarchy has been rigorously applied. For example, two viable tracts of azonal forest habitats will be set aside as on-site conservation zones and the pipeline has also been re-routed several times to avoid impacts. Residual biodiversity impacts have been quantified at the mine site, and preliminary offset sites have been identified to create a composite offset that addresses both biodiversity impacts and livelihood impacts related to biodiversity losses. Reforestation of the Ankeniheny-Zahamena Corridor has been proposed to maintain forest connectivity. Ambatovy plans to uphold a 'no species extinction commitment.'

Ongoing offset activities include the reforestation on the periphery of the offset, focusing on plantations to avoid logging the primary forest of the offset area. Awareness campaigns with local communities

around the offset site were conducted by field teams in order to show the boundaries of the offset site and explain the forest protection laws that exist. Currently, the Ambatovy team is also developing the Ramsar Torotorofotsy Management Plan in partnership with local government and NGOs. Management Activities will contribute to the offset objectives.

Next steps include: completing the residual biodiversity loss quantification over the entire impact area, including pipeline, tailings dam, harbor and industrial complex; conducting biodiversity surveys and gains calculations at the Ankerana composite site and other offset sites; determining costs and benefits for local communities to complete the socio-economic component of offset design; and institutionalize the offset to ensure long-term outcomes, including developing biodiversity management plans with detailed activities to fully implement the offset.

GHANA: The Newmont team has completed initial work on the offset evaluation and design components by applying the mitigation hierarchy; quantifying residual biodiversity impacts at the project site; selecting suitable potential offset sites; and predicting biodiversity gains at that potential site (Mamang Forest Reserve). Using the habitat hectare approach, Newmont has calculated residual project impacts totaling 80 habitat hectares. The proposed offset area is predicted to deliver 93 habitat hectares for an overall biodiversity net gain as a result of offset activities. Additional field surveys were conducted to confirm the presence of species identified in initial EIA baseline survey work. Rapid Biodiversity Assessments of the Mamang and Ajenjua Bepo Forest Reserves were also completed.

Because the final project go-ahead approval had not been granted by the Government of Ghana during the course of this grant, the Newmont team was hesitant to raise expectations with local communities by fully engaging with local stakeholders on potential offset implications. Therefore, steps yet to be undertaken include: consult local stakeholders at impact and offset sites (depending on go-ahead of the mining operations); finalize the offset design and site selection, integrate stakeholder consultation once conducted; develop the offset execution plan working with key community and government stakeholders; and institutionalize the offset to ensure long-term outcomes, including development of biodiversity management plans with detailed activities to fully implement the offset.



Photo #2: Weaver in a community near Newmont's proposed Akyem mine. An offset for the proposed mine would need to address local communities' use of biodiversity resources for livelihoods and cultural practices

SOUTH AFRICA: The residual impacts of mine expansion have been quantified, as has biodiversity loss. Proposed offset sites have been identified as the nearby Groenfontein and Mooihoek farms. Predicted biodiversity gains at those sites have been quantified. Anglo developed a business plan in FY 2008 to implement its proposed offset work on Groenfontein and Mooihoek farms. The offset activities on Groenfontein and Mooihoek farms call for a number of proactive conservation management measures such as: establishment of game farming, re-introduction of required fire regime, thinning of bush-encroached woodlands, rehabilitation of eroded road and tracks, removal of invasive alien species, planting of native species, and fuel wood lots with local communities to address underlying causes of loss of biodiversity in the area (poverty and overuse of timber for fuel wood). The improved natural resource base will be used to support limited trophy hunting and the operation of a game lodge. The EIA for the lodge was approved by the Regulating Authorities in September 2008. The final design for the lodge was completed and tenders were submitted. Community members have been trained in aspects of horse management and game tracking and behavior, and these 'rangers' have begun patrolling the offset areas on a continuous basis.

Unfortunately, due to the economic downturn and competing local land claims on Groenfontein and Mooihoek farms, the lodge development which was supposed to start December 2008 has been put on hold indefinitely. Anglo has informed BBOP that given these concerns and reduced manpower due to the economic situation, they will not be continuing with BBOP during Phase 2 activities.

QATAR: The Shell Pearl GTL Project has quantified the development impacts and residual biodiversity losses for terrestrial and marine elements. Site selection for the terrestrial biodiversity offset is complete (contributing to Al Reem Man and Biosphere Reserve) and associated gains calculated. Biologically significant areas have been identified as options for the marine offset site and the corresponding expected gains have been calculated.

The pilot is currently on hold as the Qatar Supreme Council for the Environment has recently changed to 'Ministry of the Environment', and other non-offset issues need to be resolved between Shell and the government regulator. In addition, restructuring at Shell has cast uncertainty on staff positions, roles and responsibilities, to be resolved hopefully in early 2010. BBOP will reopen discussions with Shell in 2010 once clarity is reached on individuals' roles and responsibilities and Shell has established regular working relationships with the new Ministry, such that the specific issue of biodiversity offsets can be broached with them.

NEW ZEALAND: An external team of consultants and a New Zealand Department of Conservation representative completed the environmental impact assessment. A potential offset site adjacent to the impacted mine site has been identified, and benefits include threatened species repopulation and habitat restoration. The team also developed some preliminary multipliers based on temporal loss of habitat, risk of restoration success and risk of success for repopulating the site with kiwi. Next steps include additional assessments and planning before offset implementation and delivery of conservation outcomes.

Photo #3: Aerial photo of the Strongman Opencast Mine site, New Zealand



UNITED STATES: The City of Bainbridge Island pilot has quantified residual biodiversity losses and completed calculations for required biodiversity gains at the residential development site based on anticipated activities. Preliminary site selection and gains calculation for the infrastructure development has also been completed.

Application of BBOP's Offset Design Steps at the Ambatovy Project

The Ambatovy Project is a large-tonnage nickel mine project in Madagascar. The Project construction began in early 2007 and production is due to begin by the end of 2010. The Ambatovy Project has six components: the mine, the slurry pipeline, the processing plant (including refinery), the tailings management facility, the harbor extension and the resettlement site. The Project covers a large territory extending over two of Madagascar's twenty-two regions. The proposed off-site offset of Ankerana, which constitutes the key component of the multifaceted offset program, is situated in a very remote area between the mine site and Toamasina. The Ambatovy offset is being designed according to the general eight step approach outlined in the Offset Design Handbook.

1. **Reviewing the offset project scope and activities:** the offset project was outlined in the Environmental and Social Impact Assessment (ESIA), to go above and beyond the expected regulatory requirements, and was presented during stakeholder consultation; the Project became a BBOP pilot project in 2006 before obtaining its operating permit.

2. **Reviewing the legal policy context for its biodiversity offset programme:** key elements comprise the MECIE decree (Mise en Compatibilité des Investissements avec l'Environnement, Decree N° 2004-167 modified), the Madagascar Action Plan (MAP) 2007 – 2012, the regional and communal development plans and the Equator Principles.
3. **Initiating stakeholder participation:** Participation has been pursued since the ESIA stage, engaging the Project's shareholders, government, financiers, NGOs and local communities in the design of the offset and integrating their feedback.
4. **Determining the need for an offset based on residual adverse effects:** the Project's principal impacts on natural systems and biodiversity were assessed by the project ESIA. Direct Impacts were predicted to occur at the mine area through the phased clearing of the 1,336 ha mine footprint within an ecologically sensitive semi-pristine forest mosaic. The key biodiversity components in the mine area and upper slurry pipeline portion include significant number of fauna (16 lemurs, 62 birds, 123 herpetofauna), fish and 376 flora species, three structurally distinct habitat types and a landscape-level habitat assemblage with functional interactions between its forest habitats. A very substantial mitigation program was implemented through the Ambatovy Project's Biodiversity Management Plan (BMP). The Project's most significant residual impacts occur at the mine site, including both direct impacts through the clearing of the 1,336 ha footprint (and associated biodiversity) and indirect residual impacts from edge effects on the environmental buffer (790 ha). Other key Project components are located in areas that are already heavily and historically degraded and thus have negligible negative impacts on biodiversity.
5. **Methods to calculate biodiversity loss and gain and quantify residual losses:** the Project used the benchmark and habitat hectares methodology to determine the scale of the offset needed to achieve the conservation gains that will achieve no net loss of biodiversity. The Project will generate a total loss of 1,168 habitat hectares that any offset will be required to compensate; this result will be refined with complementary fauna quantitative data acquired in early 2009. Socioeconomic losses and compensations from the offset program will be determined in 2010.
6. **Reviewing potential offset locations and activities to assess biodiversity gains which could be achieved:** preliminary surveys of offset candidate sites were undertaken in 2005 with the objective of identifying potential in-kind type offsets. The Ankerana forest site has many similarities with the Ambatovy mine site forests, supporting the hypothesis that Ankerana can be considered 'in-kind' relative to the Ambatovy azonal habitats.
7. **Calculating offset gains and select appropriate offset locations and activities:** additional work to verify Ankerana's similarities is required and planned for 2010, including detailed quantification of potential offset gains. Gains from other offset components will also be calculated and integrated.
8. **Recording the offset design and entering the offset implementation process:** the Ankerana offset design and other components of the offset have not yet been finalized, thus the implementation process has not formally begun. The Project will finalize the offset design, using BBOP guidance.

Photo #4: Aerial view of Ankerana offset site, Ambatovy Pilot Project, Madagascar



Photo #5: Ankerana Azonal habitat, Ambatovy Pilot Project, Madagascar



Best Practices and Guidelines:

Perhaps the greatest success of BBOP during this grant was the development of the BBOP principles and associated methodology toolkit. At the outset, the toolkit consisted of disparate methodologies that periodically overlapped, forcing users to jump between various documents. Upon reconsideration of this approach, the BBOP Advisory Committee recommended that the elements of the draft Toolkit be streamlined and simplified. In response, from 2007 to 2008 the Toolkit was re-organized around three core methodology handbooks:

- **Biodiversity Offset Design Handbook:** This handbook offers a step-by-step process for offset planners to adapt and use in designing a biodiversity offset, from conception through to site selection, and the definition of the offset activities. It is presented in three sections: (1) Outline: a brief summary of each step in the process, accompanied by clickable links to further information in the subsequent two sections; (2) Tools: a set of potential tools for biodiversity offset design, in the form of templates, with checklists and examples; and (3) Guidance: more detailed information and guidance, including references on key issues and a detailed example of a fictional biodiversity offset design process.
- **Biodiversity Offset Implementation Handbook:** This handbook is meant to be used once the nature of offsetting activities and the magnitude and location of the offset have been identified (for instance, using the Biodiversity Offset Design Handbook). The Implementation Handbook can help an offset planner put in place mechanisms to ensure effective implementation, permanence and good governance. It discusses the roles and responsibilities of potential stakeholders and the legal and institutional aspects of establishing an offset. Then it guides a planner in developing a biodiversity offset management plan, establishing long-term financing for the offset, and monitoring and evaluating the results. As above, the Implementation Handbook is presented in three sections: Outline, Tools and Guidance.
- **Biodiversity Offset Cost-Benefit Handbook:** This handbook guides planners through the process of evaluating the impact of a project and associated offset on local values and uses of biodiversity, particularly by communities. It is designed to be used in conjunction with the other handbooks, throughout the design and implementation of a biodiversity offset. To be successful, a biodiversity offset should compensate communities for any residual impacts of a development project – and a biodiversity offset – on their biodiversity-based livelihoods and amenity. Communities should be better off as a result. This handbook offers guidance on how to use the economic tools of valuation and cost-benefit analysis to compare the benefits to a community of the offset with the costs to the community of the residual biodiversity-related impacts of both the development and the offset. Like the other two handbooks, the Biodiversity Offset Cost-Benefit Handbook is presented in three sections: Outline, Tools and Guidance.

The full methodology toolkit was completed in May 2009. The toolkit consists of a set of ten biodiversity offset best practice principles; the handbooks; resource papers on how biodiversity offsets relate to impact assessment and stakeholder participation; and case studies of the BBOP pilot projects and non-BBOP offset experiences. All of this material is available on the website: <http://bbop.forest-trends.org/guidelines> and included in a CD-Rom affixed to an Overview publication.

Systemic change:

In order to facilitate more widespread adoption of biodiversity offsets, BBOP's work over the past four years has also explored the potential of partnerships with government organizations and lawmakers to discuss the incorporation of biodiversity offsets into permit regulations and landscape planning.

Biodiversity offsets offer government regulators a mechanism to encourage companies to compensate fully for losses to biodiversity and make important contributions to conservation, in many cases without the need for new legislation and with lower costs than alternative policies. Offsets can also help to ensure that project developments intended to meet growing demand for energy, minerals, metals, crops and transport are planned in the context of sustainable development, and are accompanied by counterbalancing measures to secure the conservation of ecosystems and species affected by a project. Offsets can also generate revenues from the private sector to enhance the budgets of government agencies and meet national biodiversity targets and goals.

The goal of BBOP's involvement in the policy arena was to, 'catalyze systemic changes by working with companies and industry associations and with policy makers in national government and international policy so that companies will commit to conduct biodiversity offsets at sites where they have a significant impact on biodiversity.' Over the period of this grant, BBOP has held several workshops with national government policy makers and at multilateral environmental agreement conventions, a sampling of which is highlighted below:

MADAGASCAR: In 2006, BBOP held events in Antananarivo to introduce the biodiversity offset concept to policy makers and discuss risks and opportunities. BBOP met with then President Ravalomanana, who expressed strong interest in incorporating biodiversity offsets into Madagascar regulatory frameworks. BBOP's policy work in Madagascar continued in February of 2009 at a workshop held with the Wildlife Conservation Society to explore the potential role of biodiversity offsets in Madagascar. The workshop coincided with significant civil unrest but still drew 25 government and private sector participants on the subject of incorporating biodiversity offsets into the Madagascar Action Plan. The subsequent fall of the Ravalomanana government however points to the inherent challenges of making sustained progress on the policy front.

MEXICO: BBOP began working in 2006 with the National Environment Institute of Mexico (INE) to identify policy instruments in which to integrate biodiversity offsets. Following up on these initial discussions were two workshops in 2007 with the Mexican Protected Areas Commission (CONANP) to explore potential pilots and train expert protected area managers on biodiversity offset management. Another workshop was held with the National Institute of Ecology in February of 2007. As a response to the event, SEMARNAT and the Environmental Impact and Risk Office began plans to review EIA regulations to adequately include biodiversity offsets. Additional work involved a policy workshop on biodiversity offsets organized by the Grupo Ecologico Sierra Gorda in June of 2007.

CONVENTION ON BIOLOGICAL DIVERSITY (CBD): At the Eighth Meeting of the Conference of the Parties to the Convention on Biological Diversity, BBOP convened a roundtable discussion on biodiversity offsets. Participants from NGOs, academia, companies, industry associations and financial lending institutions were present to discuss biodiversity offsets and their potential use as a tool for meeting the CBD 2010 target. In February 2008, BBOP Advisory Committee members met with approximately 20 national CBD representatives to discuss policy frameworks and best practice for biodiversity offsets at the thirteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 13) of the CBD. This effort culminated with the 9th Conference of the Parties of the CBD in May of 2008,

when a Decision of the Conference of the Parties to the Convention on Biological Diversity stated that the Secretariat of the Convention is to collaborate with BBOP to compile and/or make available: (a) case-studies; (b) methodologies, tools and guidelines on biodiversity offsets; and (c) relevant national and regional policy frameworks. BBOP is currently being consulted informally by the CBD Secretariat on appropriate content for a draft Decision on biodiversity offsets at COP10.

During Phase 1, BBOP also held or contributed to workshops with policy makers in: France, Ghana, South Africa, Qatar, Brazil, China, the UK, the Netherlands and the USA, as well as international meetings under the auspices of the Convention on Biological Diversity, the IUCN's World Conservation Congress and the International Association of Impact Assessment.

The BBOP7 Advisory Group Meeting in June 2009, which was partially supported by USAID'S Translinks program offered the opportunity to hold significant policy dialogues between the BBOP Advisory Group and policy makers from several countries that appear to offer promising policy development opportunities for biodiversity offsets. Participants included representatives from the governments of Ghana, South Africa, Peru, Mexico, Brazil, Malaysia and Mongolia. A plenary session on biodiversity offset policy opportunities identified potential national level interventions and partnerships for BBOP in our next phase of work (see next section). Follow up meetings and workshops to discuss specific ways BBOP can contribute to national and regional level policies to support biodiversity offsets are underway or being planned for Ghana, South Africa, Malaysia, Peru, Namibia, Mongolia and Vietnam in the next six months.

4. Next Steps

With the first phase of BBOP's work now concluded, the program is embarking on an ambitious next phase for July 2009 – June 2012 that was approved at the BBOP7 Advisory Group meeting. Over this three year period, BBOP plans to engage more countries, industry sectors, and organizations to ensure wider perspectives and offset experiences are incorporated into the development of biodiversity offset practices. BBOP will diversify its pilot experiences and scale up the program's delivered conservation results. Below is a description of the work priorities outlined by the BBOP Advisory Committee for Phase 2.

1. Expand the portfolio of biodiversity offset experiences

<p>A broader portfolio of biodiversity offset experiences – demonstrating through BBOP pilot projects and others' experiences how biodiversity offsets could work in a broad range of countries and industry sectors.</p>
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BBOP will seek broader pilot representation during phase 2, including in agriculture, linear infrastructure and alternative energy, tourism and forestry as well as more pilots in the marine biome and broader geographic representation. The aim is to support around 8 pilot projects and more '2nd tier' projects that require less intensive input. In order to learn from outside experiences, BBOP will aim to gather and compile information from other non-BBOP offsetting efforts.

In addition, BBOP will continue to work with most of the phase 1 pilot projects to complete offset design and initiate implementation. One exception to this will likely be Anglo American's PPRust platinum mine in South Africa. As of the writing of this report, Anglo has informed BBOP that they will not continue as

a BBOP pilot site due to corporate level staffing demands resulting from the economic crisis and increasing focus on climate change issues. In addition, Shell Pearl GTL in Qatar remains on hold, until higher level discussions between Shell and the newly established Qatar Ministry of Environment are concluded.

2. Policy advice to governments

National level interventions – providing technical support and policy advice on biodiversity offsets, landscape-level and regional planning to governments, through general reports and specific advice.

BBOP aims to support approximately four governments as they develop biodiversity offset policy or guidance, for instance, including ‘no net loss’ requirements in planning and environmental impact assessment or industry sectoral regulations, or preparing strategic environmental assessments. Preliminary assessments have identified a handful of promising opportunities, including in: Namibia, Ghana, South Africa, Brazil, Peru, Mongolia, Malaysia and Papua New Guinea. BBOP is also considering offering less intensive advice to a number of additional governments where shorter-term, targeted technical assistance could positively influence policy development. In addition, BBOP plans to prepare some research publications that could be widely disseminated and useful to a broad range of policy-makers in many countries.

3. Develop methods for the assurance of biodiversity offsets

Verification and auditing protocols – developing agreed protocols for verification and auditing of biodiversity offsets. This could provide a foundation for the future development of internationally agreed and certifiable standards for biodiversity offsets.

For developers to generate the anticipated business benefits from undertaking voluntary offsets, and where offsets are required by policy, it is essential to establish how their success can be evaluated. Monitoring and evaluation are critically important, as is the assurance of biodiversity offsets, typically through verification and auditing. This topic was discussed during the BBOP meeting in June 2009, where the BBOP partners felt that experience in the pilot projects should underpin the development of assurance tools such as auditing protocols. The first priority will thus be to develop an internal ‘assurance’ process that gathers experiences from pilots to shape the BBOP assurance tools, as well as providing them with feedback that can help them improve their performance. Over the course of Phase 2, BBOP will develop criteria and indicators for assurance that will eventually lead to verifiable and auditable standards.

4. Improve BBOP guidelines

Better guidelines – improving the BBOP guidelines on how to design and implement biodiversity offsets, based on broader geographic and sectoral experience of BBOP members and others.

To help lead this significant area of BBOP, Forest Trends has recently hired a Science Coordinator, who will work with the Guidelines Working Group agreed at the BBOP7 Advisory Group meeting. The task of this group will be to improve the BBOP guidance, including areas such as non-offsetable impacts; loss/gain calculation methods; site selection and landscape level planning; multipliers and time discounting; adaptive management; approaches to freshwater and marine biodiversity offsets; and multiple benefit offsets.

5. Training and capacity building

Training and capacity building – training a cadre of professionals worldwide to support companies and governments in the design and implementation of biodiversity offsets and associated regulation and policy.

To overcome the bottleneck of trained professionals capable of supporting companies and governments in the design and implementation of biodiversity offsets, BBOP will develop a number of training courses. These will be developed primarily for EIA consultants, who will be responsible for designing biodiversity offsets on behalf of client companies, but some will be suitable as a basic introduction to biodiversity offsets, and others for government regulators. A training module for the banking sector will also be considered. The plan is to undertake 2-3 regional training courses a year. Depending on the market demand, other training platforms such as on-line ‘distance learning’ will be considered.

6. Communications / Global Forum

Improved Communications / Global Forum – providing a range of communications products emanating from the work streams above and serving as a global learning forum on biodiversity offsets.

A range of communication products will be needed going forward (for example: outreach to prospective partners explaining the value of offsets, flyers, short brochures, YouTube clips, podcasts, as well as the principal BBOP guidance and resource documents) to support the success of BBOP as a program and the development and implementation of high quality policy and biodiversity offset projects. The Global Forum would serve as a venue – real and virtual – for stakeholders from around the world to meet and discuss best practice with biodiversity offsets and conservation banking. These stakeholders may be from companies, governments, financial organizations, environment and development NGOs and indigenous peoples’ and community groups, intergovernmental organizations, universities and research organizations, or simply private individuals.

The newly established BBOP Executive Committee has approved these work priorities. Working Groups have been established that will elaborate on these themes and propose specific activities as part of a broader workplan for the next two and a half years. Over the next six months, the BBOP Secretariat, Executive Committee, and technical working groups will develop a workplan that identifies the priority countries and pilot partners with whom we will work during Phase 2, and the specific outcomes of this work.

5. Funding

BBOP is grateful for the early and substantive financial and technical support provided by USAID. Our corporate partners fund their offset design and implementation work. Funding for the BBOP Secretariat activities has come from a variety of sources including other government donors, multilateral institutions, private foundations, and increasingly, our member organizations. Our funding model for our next phase of work includes instituting an Advisory Group annual membership fee and expanding the Advisory Group roster, particularly company members. We will continue to look for grant funding to support this program, and target that funding to support specific elements of the Phase 2 workplan described above, for example funding to support specific country-focused activities.