

Plan Vivo Validation Report  
ArBolivia Project  
Final report: March 31<sup>st</sup>, 2011



Prepared by:  
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&  
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## ArBolivia Validation Report

### **Name of Reviewers:**

Nick Moss Gillespie, Responsible Forestry Solutions  
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### **Date of Review:**

February 18, 2011 – March 31, 2011

Field Visit: February 27 – March 5, 2011

Project was reviewed against the 2008 version of the Plan Vivo Standard.

### **Project Name:**

ArBolivia

### **Project Description:**

The project is an afforestation project on numerous smallholder lands in lowland settler areas of the Departments of La Paz, Beni, Cochabamba, and Santa Cruz, Bolivia. The project area is divided into three zones, mostly for administrative purposes, as these zones constitute clusters of smallholder plantations established through the project. The first, most north-westerly zone consists of sites distributed between the Departments of Beni and La Paz (known colloquially as Rurrenabaque); the second zone focuses on Ichilo Province, in the western part of the Department of Santa Cruz, located almost in the centre of Bolivia (known as Yapacaní); and the third zone is situated in the area known as the Trópico de Cochabamba (Cochabamba Tropics), in the lowlands of the Department of Cochabamba. The project area is located in the Bolivian lowlands, with project areas between 250 and 450 masl elevation. The climate, soils and ecology are broadly consistent across the project region, although there is a precipitation gradient. Primary forest still dominates the area (albeit impacted by high-grading), covering 53% of the landbase, and cropland and pasture constitute 26%. Fallow agricultural lands and secondary forest make up 17% of the area, with water accounting for the remaining 4%. The fallow lands, pasture and low productivity crop lands constitute the primary focus of the project.

Three types of afforestation activities are undertaken:

- a) Establishment of plantations
- b) Establishment of agroforestry
- c) Silvopastoral (This may take the form of intensive production of fodder, as seen during the field-visit, or may also take the form of rotating pastures under low-density tree-cover).

Most smallholders own between 20 and 50 ha, although this varies by region. The average area held is 33.9 ha, 36.7 ha and 14.8 ha in the regions of Rurrenabaque, Yapacaní, and Cochabamba Tropics, respectively. Very few landowners hold more than 100 ha or less than 10 ha. The typical afforestation planting will be between 1.5 – 2.5 hectares (ha), located on a portion of a smallholder's land area, with a maximum allowable plantation area per smallholder of 5 ha. The project plans to plant approximately 6,000 ha overall, with 5,000 ha in plantations and 1,000 ha in agroforestry and silvipastoral systems. Approximately 956 farmer families have benefited from the project establishment activities to date (as of March 2011), out of a projected 2,000 beneficiary families when the project is fully implemented. Full implementation is projected to be completed by 2014.

### **List of Principal Documents Reviewed:**

JACO CDM. 2007. CCB – Validation Report: Carbon Sequestration through Reforestation in the Bolivian Tropics by Smallholders Project No.1 (Yapacani District). Preliminary draft report. Prepared for CETEFOR. Report No. GR07W0007D. Aug 22, 2007.

JACO CDM. 2007. CCB Standards Checklist: Carbon Sequestration through Reforestation in the Bolivian Tropics by Smallholders Project No.1 (Yapacani District). Preliminary draft report. Prepared for CETEFOR. Report No. GR07W0007D Appendix 1. Aug 22, 2007.

JACO CDM. 2007. CCB – Validation Report: Carbon Sequestration through Reforestation in the Bolivian Tropics by Smallholders Project No.2 (Rurrenabaque District). Preliminary draft report. Prepared for CETEFOR. Report No. GR07W0009D. Aug 29, 2007.

JACO CDM. 2007. CCB Standards Checklist: Carbon Sequestration through Reforestation in the Bolivian Tropics by Smallholders Project No.2 (Rurrenabaque District). Preliminary draft report. Prepared for CETEFOR. Report No. GR07W0009D Appendix 1. Aug 29, 2007.

JACO CDM. 2007. Small-scale Afforestation and Reforestation CDM Validation Protocol. GR07W0008 Appendix 1.

Plan Vivo Standards 2008.

Plan Vivo Project Design Document (PDD) (Contains 11 annexes). October 2010. SICIREC BOLIVIA Ltda.

Plan Vivo Technical Specification for Forestry Plantations for Sustainable Wood Production. (Contains Annexes 1-4) Prepared by Anko A. Stilma and Dennis Berger. Undated – received by assessment team on Feb 24, 2011

Plan de Gestión de Calidad; para el éxito sostenido del Proyecto ArBolivia. PGP Part 11. Prepared by A. Stilma, D. Berger, J. Goitia and J. Bailly. (Asociación Accidental “CETEFOR Carbono-SICIREC Bolivia” Dated 01/09/2009.

Knoblauch, B. and D. Berger. 2007. Cattle production in grazing systems colonization areas in the area of the influence of the Biosphere reserve and communitarian grounds Pilon. DED. Rurrenabaque

Sejas, Bernal Rober and José Espinosa. 2007. Cattle production in the pre-Amazon and sub-Andean ecological region. Fundación Cetefor. Cochabamba.

Excel spreadsheet named “CO2 projections 2007-2013 20110126 revised 110216a plan vivo FP.xlsx” (489 Kb)

Matrícula de Comercio, Sicirec Bolivia Ltda.

Reglamento Interno Aprobado, Comité Forestal El Gabú.

Constitución Asociación Accidental Cetefor-Sicirec.

Certificado de Registro de Poder, Sicirec Bolivia Ltda.



Alianza Estratégica entre la Federación Sindical de Comunidades Interculturales Productores Agropecuarios de Yapacaní y la Asociación Accidental Sicirec-Cetefor:  
Proyecto ArBolivia

Contrato Marco para el Establecimiento, Mantenimiento, y Aprovechamiento de Plantaciones Forestales.

**Description of field visit (including list of sites visited and individuals/groups interviewed):**

The field visit commenced with a 2-hour briefing the evening of Sunday February 27<sup>th</sup>, 2011, and included 5 full days of site-visits and interviews with project staff, participants, and other informants involved with ArBolivia in various capacities, such as local political representatives (from two municipalities where the project is active) and other stakeholders, such as officers of the Forestry Committees established by ArBolivia.

A significant part of the sampling procedure was the stratification of the sites (i.e. smallholder plantations) to be visited, to ensure as much representation and transparency in the selection of sites as possible. For logistical reasons, including constraints imposed by the rainy season, as well as time constraints, it was not possible to visit any sites in the Rurrenabaque zone; this was discussed with Plan Vivo staff in advance, in terms of the validity of the approach taken. It was noted that the findings of previous validation reports (under other carbon methodologies) included sampling of all 3 project areas, and found them to be quite homogeneous in terms of this geographical diversity.

The intention laid out in the sampling methodology was to sample 4 sites from each of three Technical Specifications that will be prepared for the project. (At the time of validation, only the technical specifications for the plantations were available, and only these have been included in this validation exercise). A further layer of stratification was the previous land use of the plantation area in question, with different previous uses being: annual crops, degraded grassland, degraded grassland with trees, and cropland – perennial crops in their final stage of production. The tree species used, the crops used as part of the agroforestry system (cacao or citrus plants), as well as the overall property size, (from 6.5 to 62 hectares), and to some extent the economic conditions associated with slightly different scales, were further layers of diversity to be encompassed by sampling. Age of established plantations was not a significant variable, since all plantations were established from 2007 onward.

Twelve sites were selected on this basis. In general, the selected sites encompassed a fairly high degree of diversity, and it was deemed that sampling was sufficiently representative, given the early stage of development of the project. There has been very little implementation of Silvopastoral systems to date, with only six sites in the project, and the sample included one of these. In terms of intensity of sampling, this was considered to be a reasonable level of representation in the sample. Finally, it was possible to achieve sampling of a cross-section of smallholder demographics, including the ages of project participants, the inclusion of both long-standing residents of Bolivia's lowlands and more recent arrivals from western Bolivia (the Andean highlands ('Altiplano') and the pre-montane valleys), first-language Spanish cf. Quechua speakers, as well as some degree of gender representation. At least 2 female smallholders were amongst those interviewed, as well as other women interviewed, either in the presence or in the absence of the formal property-owner (their husbands).

Approximately 20% of smallholders in the project are women, so sampling came close to reflecting this reality.

A record of the sites visited was kept, along with key data produced from the project database. Sampling methodology included a review of the hard-copy documentation associated with the smallholder property in question, and in all but one case, the property owner was present when the visit was carried out. Informal smallholder interviews were part of the proceedings, as well as interviews and discussions in the field with ArBolivia technical staff. GPS coordinates for all sites were verified on a sampling basis, and largely found to be accurate (only 1 example was found of a GPS coordinate that was not exact, or within an acceptable margin of error, i.e. within approximately 1-2 metres variation from validator’s GPS and/or reading taken on company unit on-site in presence of validator). It was possible to walk through most of the plantation areas in the time available and confirm areas planted, as well as density of planting, species, and over all condition, including where infill planting had been required due to initial mortality rates above the 10% threshold specified in the Technical Specifications. Overall, there was found to be very close correlation of project documentation/database with realities on the ground. Observations and discussions in the field also provided opportunities to assess numerous aspects of the project, including staff knowledge, smallholder understanding of the project, etc.

**Validation Opinion:**

The evidence presented in the project documents and during the field visit indicates that the ArBolivia project staff has the capacity to plan, develop and manage the project. Based on these results ArBolivia has met all of the requirements of the Plan Vivo Standards and the ArBolivia project is qualified to be registered with the Plan Vivo Foundation. If there are questions about this result, please contact either Nick Moss Gillespie ([nmoss@rforsolutions.com](mailto:nmoss@rforsolutions.com)) or Jeremy Williams ([jeremy.w@sympatico.ca](mailto:jeremy.w@sympatico.ca)).

**Table 1. Summary of major and minor Corrective Actions**

Theme	Major CARs	Minor CARs	Observations
<b>Governance</b>	0	0	2
<b>Carbon</b>	0	0	2
<b>Ecosystem</b>	0	0	1
<b>Livelihoods</b>	0	0	2

<b>Theme</b>	<b>1. Effective and Transparent Project Governance</b>
Requirement	<p>1.1 Administrative capabilities</p> <p>The project has set up a legal and organisational framework with the ability and capacity to aggregate carbon from multiple land-owners and transact to purchasers, and monitor progress across all project operations, including:</p> <p>1.1.1 A legal entity (project coordinator) able to enter into sale agreements with multiple producers or producer groups for carbon services;</p> <p>1.1.2 Standard sale agreement templates for the provision of carbon services;</p> <p>1.1.3 Transparent and audited financial accounts able to demonstrate the secure receipt, holding and disbursement of payments to producers;</p> <p>1.1.4 All necessary legal permissions to carry out the intended activities;</p> <p>1.1.5 Mechanisms for participants to discuss issues associated with the design and running of the project.</p>
<b>Guidance</b>	<p>Organisational capacity may be demonstrated through e.g.:</p> <ul style="list-style-type: none"> <li>• Previous project record, especially the receipt, safeguarding and management of other funds involving disbursement to smallholders/community groups</li> <li>• Staff able to explain legal status of organisation, and financial structure i.e. how funds will be held and transferred – backed up by evidence of setting up bank accounts/record keeping systems etc</li> </ul>
<b>Findings</b>	<p>1.1.1 Documents proving legal establishment of the project, including registration of the 'Asociación Accidental' (loosely equivalent to a Joint Venture) between CETEFOR and SICIREC (known as the AACS), as well as business registration documents, were reviewed.</p> <p>The internal regulations of the 'Forestry Committees', were provided for review (see below).</p> <p>1.1.2 The standard sales agreement template was reviewed, and it was found that clause 5 describes the assignation of carbon rights by the smallholder to the 'Association', i.e. the AACS.</p> <p>1.1.3 Audited accounts were viewed on-site at the project offices and an effective chain of custody of credits is being developed from the landowner to the point of sale to a buyer.</p> <p>1.1.4 The company registration documents reviewed covered the full range of activities which the project engages in, in terms of all forestry-related activities.</p> <p>1.1.5 The aforementioned 'Forestry Committees' constitute the primary formal mechanism for engagement of smallholders in discussion of the project goals and implementation. These committees are established within the pre-existing grassroots political mechanism which defines the smallholder communities, their 'sindicato' (union). Forestry Committees have been formed in some 13 communities, where there is a 'quorum' of project participants present, but the intention is to keep building this structure where possible to facilitate greater participation in the project on a political level of active engagement. The internal regulation document explicitly describes the role of the committees, as well as their constituent parts and operations. Mechanisms for the resolution</p>

	<p>of conflicts between the project management and smallholders are also described therein. Interviews conducted as part of sampling included meeting active members (i.e. those holding office) within the forestry committees.</p> <p>An agreement between ArBolivia and a higher-level political entity, a <i>Federación sindical</i>, which unites a number of <i>Centrales</i>, which in turn represent a number of <i>sindicatos</i>, was also provided as supporting evidence of articulation with pre-existing socio-political structures within the smallholder community.</p> <p>Roll-out of the Forestry Committees, and the level of participation they engender, as well as meaningful engagement in terms of project management, resolution of conflicts or disputes, etc., should be monitored going forward, as this is a key mechanism for smallholder participation.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	None		
<b>Requirement</b>	<p><b>1.2. Technical capabilities</b></p> <p>The project, through its participants, is able to provide assistance to producers in planning and implementing productive, sustainable and economically viable forestry and agroforestry systems, and provide support for silvicultural and other management operations.</p>		
<b>Guidance</b>	<ul style="list-style-type: none"> <li>• Project staff should be able to define clearly who is responsible for the provision of technical extension support</li> <li>• Project staff should be familiar with the content of project technical specifications (e.g. species to be planted, spacing requirements, management systems, potential issues)</li> </ul>		
<b>Findings</b>	<p>ArBolivia project documentation includes a well-developed documentation system, starting from the PDD and Technical Specification(s), and the required Annexes. It also includes a Quality Management Plan and SOPs, which constitute key operational reference documents for the project. This document provides guidance on the delivery of project results, or 'products', the latter being the outputs of the various project activities, such as site selection, distribution of seedlings, plantation establishment, and follow-up / maintenance activities. Processes are broken down in terms of indicators, and process flow diagrams allow staff to have a more visual breakdown of relevant tasks. Responsibilities appear to be clearly defined.</p> <p>Project technical staff were found to be in possession of both formal educational qualifications (post-secondary studies in forestry, or agronomy), and significant field experience in at least some cases. Given the relatively limited presence and trajectory of plantation forestry activities in Bolivia, this represents a high level of competency. Key staff, including the management team, largely come from a background of working with the FAO on the development of forestry plantations, thus representing a high degree of collective expertise in the Bolivian context.</p> <p>Project staff interviewed in the field exhibited a high degree of familiarity with project requirements, as well as the capacity to monitor and evaluate</p>		

	<p>practical results on the ground.</p> <p>Although the management system has been developed and refined with a clear sense of where weaknesses/opportunities for improvement have arisen in the past, no formal training records are available for project staff, which makes it hard to verify competency of those not sampled directly through interviews and site-visits, and also renders the correlation of staff training updates with latest version of procedures, etc., difficult. See Observation 2.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	<p><b>OBSERVATIONS</b></p> <ol style="list-style-type: none"> <li>1. Project documents should be consistently named and listed, as well as assigned dates of creation/review, etc. An effective document control system would greatly facilitate both operational uses and also the work of an external evaluator, as in the case of this validation.</li> <li>2. Formal training records for the project staff should be developed and maintained.</li> </ol>		
<b>Requirement</b>	<p><b>1.3. Social capabilities</b></p> <ol style="list-style-type: none"> <li>1.3.1. Able to select appropriate target groups, inform groups about the Plan Vivo System and the nature of carbon and ecosystem services and establish effective participatory relationships with producers</li> <li>1.3.2. Able to establish land-tenure rights through engaging with producers and other relevant organisations</li> <li>1.3.3. Able to consult producers effectively on a sustained basis</li> </ol>		
<b>Guidance</b>	<ul style="list-style-type: none"> <li>• Project coordinators should maintain minutes of community meetings and training workshops etc</li> <li>• Project staff should be able to explain (in line with PDD) how land tenure is checked by the project</li> <li>• Project staff should be able to explain how communities/target groups were involved in the development of the project and choice of activities</li> </ul>		
<b>Findings</b>	<p>1.3.1 The nature of the relationships between project staff and producers was evaluated in the field, both through observation of interactions during site visits, and the level of familiarity both between the parties involved and also of staff with the smallholding in question. Target groups (i.e. actual project participants) are self-selecting, inasmuch as they have chosen to come forward and get involved in the project, based on presentations made to the whole community by ArBolivia staff (see notes under 4.1., below, on the community-led planning process). In some cases, there are only 2 current project participants in a community (<i>sindicato</i>) of c. 40, for example. Hard copies were provided of promotional leaflets produced for local use about ArBolivia project, including discussion of non-timber values. Samples viewed of project promotional materials, aimed at producers, included mention of financial earnings of forest plantations cf. raising cattle (the former being five times more profitable than the latter, according to this analysis). Interviews with project participants showed some awareness of ecosystem services of forest plantations, perhaps most especially water, but also carbon. (Annex 9 includes samples of forestry committee meeting minutes). The core staffperson (based in Yapacaní zone) explained how the</p>		



	<p>sindicatos have a regular meeting once a month, and project representatives request the opportunity to address these meetings and make a presentation on the project. Environmental benefits are a key topic, and it is reported that segments of this target audience has been known to acknowledge that planting pastures for cattle does not have a positive environmental impact.</p> <p>1.3.2 (See notes under section 2.4, on permanence). Clear and legal tenure is established via a number of different legal scenarios.</p> <p>1.3.3 (See notes in 1.1.5 on Forestry Committees). Smallholders generally have a fairly well-developed pre-existing socio-political structure (i.e. <i>sindicato/central/federacion</i>), which co-exists sometimes in parallel, and with widely varying degrees of articulation, with the more official structures of government, such as the municipalities.</p> <p>Fieldwork included observing the meeting of ArBolivia's Director with a local municipality, to sign an MoU on future collaboration, as a good example of engagement with the broader civil society.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	None		
<b>Requirement</b>	<p><b>1.4. Reporting</b></p> <p>Projects must on an annual basis, according to the reporting schedule agreed with the Plan Vivo Foundation:</p> <p>1.4.1. Accurately report progress, achievements and problems experienced;</p> <p>1.4.2. Transparently report sales figures and demonstrate resource allocation in the interest of target groups.</p>		
<b>Findings</b>	<p>ArBolivia is in possession of a highly evolved database, which is linked to GIS data, and allows for a high degree of transparency in reporting. ArBolivia is in the process of implementing a new reporting function which will link investors to the specific smallholdings they have invested in more directly.</p> <p>Reporting on resource allocation thus far is limited to the payment of relatively small sums to producers as partial coverage of costs of maintenance activities.</p>		
<b>Conformance</b>	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
<b>CAR/REC</b>	None. To be further verified once the project is established with Plan Vivo procedures.		
<b>Theme</b>	<b>2. Carbon Benefits</b>		
<b>Requirement</b>	<p><b>2.1. Accounting methodology</b></p> <p>Carbon benefits are calculated using <b>recognised carbon accounting methodologies</b> and conservative estimates of carbon uptake/storage that take into account risks of leakage and reversibility.</p>		

<p><b>Findings</b></p>	<p>The basic accounting methodology follows the UNFCCC project accounting methodology AM-ARS0001 version 5. The methodology was applied as it has been set out in the AM-ARS001 document. There are some aspects of the methodology that are noteworthy.</p> <p>The PDD states that the minimum time since land clearing for an area to qualify as being deforested was changed to 10 years to conform to Plan Vivo requirements.</p> <p>The project crediting period was set at 21 years, which is longer than the 10 years required as a minimum by Plan Vivo. The additional length of the period was considered by the proponent to improve the value of the offset credits and make them more attractive to prospective purchasers. Credit amounts equal to 70% of the expected amount of additional carbon sequestered in 2027 will be available to be sold after validation. The 21-year credit period is to start in 2007, which coincides with the beginning of the first Kyoto reporting period. Even though planting is expected to continue up to 2014, the first planting took place in 2007. Given that the project crediting period is twice as long as the Plan Vivo minimum, the assessment team generally accepts the crediting schedule.</p> <p>Because the project began in 2007, there have been activities undertaken in the project prior to the registration of the project with Plan Vivo. However Plan Vivo has decided to permit retroactive crediting because the project was initially set up to sell CERs under the CDM. Therefore Plan Vivo Certificates will be issued for activities that were implemented prior to the registration of the project under the Plan Vivo Standard, except for activities that were planted through tree planting certificates.</p> <p>ArBolivia has the opportunity to sell some of the credits in the 30% buffer, and would consider doing so once a sufficient amount of growth and yield data have been recorded and evaluated to confirm the amount of sequestered carbon. There is an opportunity to reduce the buffer, to as low as 10% of the expected amount of additional carbon. Because the risk factors will be reviewed annually, the project manager can request permission from Plan Vivo to reduce the buffer if the assessment of risk declines as the project develops a track record.</p>		
<p><b>Conformance</b></p>	<p>Yes <input checked="" type="checkbox"/></p>	<p>No <input type="checkbox"/></p>	<p>N/A <input type="checkbox"/></p>
<p><b>CAR/ Rec</b></p>	<p>None.</p>		
<p><b>Requirement</b></p>	<p><b>2.2. Baseline</b></p> <p>Carbon benefits are measured against a clear and credible <b>carbon baseline</b>.</p>		
<p><b>Findings</b></p>	<p>Projects can occur on four land use types – the baseline assumption is that the current land use will continue. On page 6 of the PDD, Table 2.1 indicates that 1,138 ha (67%) of project activities occurred on fallow land or land used for annual crops, 330 ha (19%) on grassland, 221 ha (13%) on land with perennial crops and 21 ha (1%) on grassland with existing trees. Separate baselines are calculated for each baseline scenario. There is a sequence of crop/pasture and fallow that is followed by the</p>		

	<p>farmers. Each prospective site is assessed for biophysical characteristics which determine suitability for inclusion in the project (including eligibility, based on date of deforestation) and indicate which species are appropriate for planting.</p> <p>UNFCCC project accounting methodology AM-ARS0001 version 5 was used. AM-ARS0001 applies to small-scale afforestation and reforestation projects that meet a number of conditions. While some of the conditions are met by virtue of the project design, meeting others is dependent on implementation. Examples of the latter conditions include:</p> <ul style="list-style-type: none"> <li>• Project activities are implemented on lands where the number of displaced grazing animals is less than 50% of the average grazing capacity of the project area; and</li> <li>• Project activities are implemented on lands where less than 10% of the total surface project area is disturbed as a result of soil preparation for planting.</li> </ul> <p>The project did not undertake a grazing capacity calculation using the methodology in UNFCCC AR-AMS0001 Appendix D. Instead, assumptions were made that were based on the technical documents Sejas and Espinosa, 2007 and Knoblauch and Berger, 2007.</p> <p>We note that although the technical specification assumes a static baseline, the project manager feels that in the absence of the project, carbon stocks would decline somewhat, due to continued forest clearing (and little if any planting), and the continued application of poor agricultural practices which lead to exhaustion of the fertility of the land after a number of crop rotations. Our observations support this contention and so we agree that the assumption of a static baseline is indeed conservative..</p>			
<b>Conformance</b>	<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">Yes <input checked="" type="checkbox"/></td> <td style="width: 33%;">No <input type="checkbox"/></td> <td style="width: 33%;">N/A <input type="checkbox"/></td> </tr> </table>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>		
<b>CAR/REC</b>	None			
<b>Requirement</b>	<p><b>2.3. Additionality</b></p> <p>Carbon benefits are <b>additional</b>, i.e. the project and activities supported by the project could not have happened were it not for the availability of carbon finance. Specifically this means demonstrating, as a minimum:</p> <ul style="list-style-type: none"> <li>2.3.1. The project does not owe its existence to legislative decrees or to commercial land-use initiatives likely to have been economically viable in their own right without payments for ecosystem services; and</li> <li>2.3.2. In the absence of project development funding and carbon finance, financial, social, cultural, technical, ecological or institutional barriers would have prevented the project activity.</li> </ul>			
<b>Findings</b>	<p>Additionality was demonstrated using the approach described in UNFCCC AR-AMS0001 Appendix B, ArBolivia explained that project would not have occurred due to the barrier of the traditional approach to agriculture, since</p>			

	plantation establishment is not a customary use of agricultural land. The second barrier identified was the lack of access to funds for planting on the part of the landowners. Interviews with landholders in the field confirmed that the amount of financial investment required for plantation establishment is not available in the absence of the project; technical advisory services and the co-investment in plantation tending provided by the project are also valuable in enabling planting to occur, and to ensure survival. The assessors agree that the project activities are additional.		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	None		
<b>Requirement</b>	<p><b>2.4. Permanence</b></p> <p>Potential risks to permanence of carbon stocks are identified in project technical specifications and effective mitigation measures implemented into project design, management and reporting procedures.</p> <p>Producers enter into sale agreements with the project coordinator agreeing to maintain activities, comply with the monitoring, implement management requirements and re-plant trees felled or lost.</p> <p>As a minimum, a 10% risk buffer is deducted from the saleable carbon of each producer, where the level of buffer is recommended in the technical specifications according to the level of risk identified, and subsequently reviewed annually following annual reporting.</p>		
<b>Findings</b>	<p>There are numerous conditions that a smallholder must meet to be eligible to be a project participant. Firstly, land ownership must be proven for each participant. There are several alternate forms of land tenure that provide for ownership, or equivalent, status. The landowner is also the legal owner of the carbon and a contract is signed between participants and the Asociación Accidental CETEFOR SICIREC (AACS) in which landowners transfer the carbon rights to the AACS in exchange for payment.</p> <p>The plantations include species of varying growth rates, and even the fastest growing species will not be harvested for at least 10 years. Due to intermixing of species on most plots, many plantations are expected to have crop trees that will grow for at least 40 years before harvest. This exceeds the permanence conditions of the Plan Vivo Standard.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	None.		
<b>Requirement</b>	<p><b>2.4. Leakage</b></p> <p>Potential sources of <b>leakage</b> have been identified and effective mitigation measures implemented.</p>		



<b>Findings</b>	The PDD provides evidence that there will be no leakage from the project. The assessors note that the project area will occupy no more than several percent of the land available for agriculture in the region, hence the project impacts will be minor in terms of regional supply and demand for agricultural and forest products. On an individual land holding, project participants will learn to use their land more efficiently (as per project design) and so off-property impacts should be reduced through the project. The cattle that are displaced are moved to other degraded areas and so the leakage associated with this shift is insignificant.		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	None		
<b>Requirement</b>	<b>2.6. Traceability and double-counting</b> Carbon sales are <b>traceable</b> and recorded in a database.		
<b>Findings</b>	The geographic coordinates of project parcel are taken by GPS and each parcel is given a unique code. The amount of carbon produced from each project parcel can be tracked based on the species planted. In almost all cases, blocks of single species are planted, although in some cases multiple blocks of two or three species might be planted on a single landowner's property. In this case, each block is identified separately so that single species data can be used to forecast yields and the amount of carbon sequestered over time. Interplanted species are most often <i>swietenia macrophylla</i> and <i>cedrela fissilis</i> , which are interplanted to avoid insect attacks. These plantings will be handled as separated strata and the permanent sample plots will be bigger to get enough (10-15) individuals of each species in the plots, until the end of the rotation. Participating land owners sign contracts to sell the carbon to ArBolivia. ArBolivia is completing a database that will provide for detailed tracking.		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	OBSERVATION:		
<b>Requirement</b>	<b>2.7. Monitoring</b> Project has an effective process for <b>monitoring</b> the continued delivery of the ecosystem services, where:  2.7.1. Monitoring is carried out against targets specified in technical specifications; 2.7.2. Monitoring is carried out accurately using indicators specified in technical specifications; 2.7.3. Monitoring is accurately documented and reported to the entity responsible for disbursing payments to producers; 2.7.4. Corrective actions are prescribed and recorded where targets are not met, and followed up in subsequent monitoring.		

<b>Findings</b>	<p>A comprehensive monitoring program is conducted. A good level of monitoring of tree survival and growth is scheduled to take place in the first 4 years after planting. All planted areas will be visited 2-3 weeks after planting to check on survival and quality, with quarterly monitoring inspections thereafter. As the plantings become well-established, the frequency of monitoring will decline to once per year at five years of age. In addition, permanent sample plots will be installed to track growth and yield of each project type (a combination of initial site conditions and planting type – plantation, agroforestry and silvopastoral), spacing and species – these will be measured every five years.</p> <p>The PDD does not identify who will be doing the monitoring but it will be a combination of ArBolivia staff and AACS staff. The Monitoring and Evaluation Unit is in possession of detailed procedures that govern how Monitoring and Evaluation activities are to be conducted; see notes on Quality system, above.</p> <p>There will be some training of landowners to identify and report problems; however some landowners are too far from ArBolivia to be able to report. Those who are not comfortable reporting to ArBolivia will be encouraged to report to the AACS.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	<p>OBSERVATION:</p> <ol style="list-style-type: none"> <li>1. The assessors suggest that monitoring include land use on the rest of each participating farmer's land in order to assess whether the integrated farm plans have an effect on the farmer's cropping approach (which is the intention).</li> <li>2. The permanent sample plots have not yet been established and the project team is urged to establish these sooner rather than later.</li> </ol>		
<b>Requirement</b>	<p><b>2.8. Plan Vivos</b></p> <p>Producers <b>draw up Plan Vivos</b> as part of a <b>participatory</b> process that ensures proposed land-use activities:</p> <ul style="list-style-type: none"> <li>— Are clear, appropriate and consistent with approved technical specifications for the project;</li> <li>— Will not cause producers' overall agricultural production or revenue potential to become unsustainable or unviable.</li> </ul>		
<b>Findings</b>	<p>Proposed land-use change (i.e. plantation establishment) is then proposed, discussed, and agreed with the landowner, based on Tech. Spec. criteria, i.e. focusing on the most degraded part/s of the landbase. No more than 5 hectares can be planted of any single smallholding, and this is (informally) scaled down in the case of the smaller holdings. The primary intent is thus to reduce the potential impact on food production, since the agricultural productivity of the soils will be low.</p> <p>Any potential downside in the short-term for the landowner is also intended to be offset through the implementation of either agroforestry or silvopastoral activities on a portion of his/her landbase; to date, the vast majority of landowners have opted for the more tangible benefits of a marketable crop such as citrus (mandarins) or cacao.</p>		

	<p>The intent is that all smallholdings will have a POP (Smallholding Management Plan) put in place, which is to provided a more comprehensive and integrated land-use plan for the entire smallholding; implementation of this element for all smallholdings should be verified going forward.</p> <p>It would likely be helpful to inform discussions of land-use / land-use change with the establishment of clearer definitions of terms within the project scope; e.g. nomenclature such as ‘chume’ (in Spanish), and ‘secondary forest’ (<i>bosque secundario</i>) appear to be used without a strong sense of technical definition or consistency in the use of these terms.</p> <p>Notwithstanding attempts at engagement, there appears to be some lack of clarity on the part of some individual producers as to specific details of the eventual division of benefits, i.e. 50% of timber revenues each for the project and the smallholder, once operational costs of harvesting and processing have been met. There is doubtless scope for ongoing dialogue and facilitation of learning on some aspects of the project structure, even though key elements such as the division of profits are clearly contained in the contract signed by all producers.</p>
<b>Conformance</b>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p>
<b>CAR/REC</b>	None
<b>Theme</b>	<b>3. Ecosystem benefits</b>
<b>Requirement</b>	<p><b>3.1. Planting native and naturalised species</b></p> <p><b>3.1.1.</b> Planting activities are restricted to <b>native and naturalised species</b>.</p> <p><b>3.1.2.</b> Naturalised (i.e. non-invasive) species are eligible only where they can be shown to have compelling livelihood benefits and:</p> <ul style="list-style-type: none"> <li>— Producers have clearly expressed a wish to use this species;</li> <li>— The areas involve are not in immediate proximity to conservation areas or likely to have any significant negative effect on biodiversity;</li> <li>— The activity is still additional i.e. the producers in the area are not doing this activity or able to do this activity without the intervention and support of the project;</li> <li>— The activity will have no harmful effects on the water-table.</li> </ul>
<b>Findings</b>	<p>The project involves planting native species and one non-native species, teak (<i>Tectona grandis</i>). The native species are <i>Aspidosperma Macrocarpon</i>, <i>Cederela fissilis</i>, <i>Guarea rugby</i>, <i>Schlizobium amazonicum</i>, <i>Stryphnodendron pupureum</i>, <i>Cemtrolobium tomentosum</i>, <i>Terminalia amazonica</i>, <i>Buchanavia sp.</i>, <i>Swartzia jorori</i>, <i>Virola peruviano</i> and <i>Swietenia macrophylla</i>. This variety of species enables the project managers to match species to a range of sites and provide options to landowners. The plantations are typically 1 – 1.5 ha, (largest is 5 ha) and on most lands there are different species planted in each individual ha – the pure plantations are just in small sections of larger planted areas.</p> <p>Teak is a non-invasive species that is very valuable, financially, and it has the potential to provide significant benefits to landowners. The PDD</p>

	<p>specifies that teak will only be planted on a small scale.</p> <p>The ArBolivia staff indicated that teak is planted because farmers see it elsewhere and want to have it due to its high value. It is also easy to get teak seeds and so it was planted fairly extensively one year when ArBolivia was unable to get native species seed in time. The project doesn't want to have more than 15% of the area planted; it is now at 20% but the project will aim to bring this down. The proportion of the total area planted with teak has declined from c. 33% in 2007, to only c. 5% in 2010, to reflect this. Since the project has started, farmers are seeing that native trees have the potential good growth and a similar value to teak, and they may be better adapted to the area. As a result, farmers are more willing to grow those native species, which will help the project reduce the percentage of teak that is planted. Given the sizes of planting and the mixtures of species that are planted, the environmental impact of the teak plantings is insignificant.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	None		
<b>Requirement</b>	<p><b>3.2. Ecological impacts</b></p> <p>Wider <b>ecological impacts</b> have been identified and considered expressly including impacts on local and regional biodiversity and impacts on watersheds.</p>		
<b>Findings</b>	<p>The project has wider ecological impacts and these have been identified and considered. The region where the project is being undertaken is experiencing deforestation and the loss of native wildlife, due to development, land clearing and hunting. The planting of trees will provide some counter to the deforestation and will provide some habitat for some species that are under pressure. There is a strong hunting culture in the region and people are very aware of the decline in the availability of game, and hence there will be support for measures that conserve game species, such as the project.</p> <p>The PDD states that some lands will become registered and be able to be maintained in their use, which is a conservation benefit. The mechanism for achieving this is through the establishment of <i>Unidades de Protección</i> ('protection units') – conservation areas within each smallholder property, for the protection of water bodies, etc. These protected areas are required according to stipulations of the <i>Norma Técnica para Planes de Ordenamiento Predial</i> ('Technical Guide for Land Use Planning') for Bolivia.</p> <p>The PDD says the projects will be embedded in a proper land use planning system. It is an ArBolivia requirement that each participant must develop a PIF (Integrated Farm Plan) prior to plantation establishment. As part of this, ArBolivia is careful not to establish plantations on the best croplands and they do not use too much of the total area owned by an individual. Afterwards, there is on-going engagement and the intent is to move to a legal requirement – a farm property land use plan. Every farmer is in a municipal land use plan – he can always reduce the intensity of land use below the plan level but he cannot increase the intensity of land use above</p>		



	<p>the plan level.</p> <p>It is noteworthy that the creation of a POP (Smallholding Management Plan) is only required by law for properties of 500 ha or greater area; the fact that the project is promoting this level of land-use planning on smaller properties represents an attempt to promote best practices that substantially exceed the norm for the region.</p> <p>ArBolivia believes that the project can have significant beneficial impacts on regional ecology but there are many steps and it will be a long-term process. The first step is to improve land use on the individual property and reduce off-property impacts. Many smallholders have high impacts on outside forests because they are not using their own land very well.</p> <p>An appendix to the Quality Management Plan of the project (2009) includes discussion of the declared aim of the project to establish ecological 'corridors and structures' equivalent to 20% of the plantation area. These areas are to be included in the POPs (described above), and will focus on the following three areas: conservation of primary forest; conservation and restoration of secondary forest; and the plantation of new ecological corridors. There are certainly significant opportunities available for the project to contribute to the conservation and restoration of areas of highly-intervened natural forest, including areas that may be sensitive and of relatively high biodiversity as transitional zones, such as some riparian areas observed during field visits. The projects level of impact on the improved management of such areas must be tracked going forward.</p> <p>Meanwhile, there is a section in the documentation on rare and endangered species but it does not specify which of the species that are discussed are listed.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	<p>OBSERVATION:</p> <p>1. Revise text in discussion of rare and endangered species to clarify for the reader which species are listed, including those on the IUCN Red List.</p>		
<b>Theme</b>	<b>4. Livelihood Benefits</b>		
<b>Requirement</b>	<p><b>4.1. Community-led planning</b></p> <p>Project has undergone a <b>producer/community-led planning process</b> aimed at identifying and defining sustainable land-use activities that serve the community's needs and priorities.</p>		
<b>Findings</b>	<p>The social mobilizer for ArBolivia described the process of how interested smallholders sign up for a meeting to get more involved in the project, after a presentation is made at the general meeting of their sindicato. Smallholders then review the project contract in small break-out groups, with facilitation. Each group analyses some of the component parts of the contract, and presents its findings to the whole group in plenary. The meeting ends with an evaluation of the project documentation, to clear up any remaining doubts or queries on the part of smallholders. Thus the clear intent is that the project should start on a participatory basis.</p>		

	<p>The next key step in the inclusion of a smallholding in the project is a site-visit by the social mobilizer, to collect basic data on the property in question, including GPS data, and interview data on previous land-use from the owner. The file is then passed on to the technical field staff, who are introduced in person to the smallholder by the social mobilizer, to ensure continuity in the building of the relationship. The field-tech then puts together the PIF (Integrated Farm Plan), which is essentially a 'snapshot' view of current land usage, in order to establish a baseline for the particular smallholding. A key part of the initial process is the assessment of eligibility, in terms of the date of deforestation of the various areas of the smallholding, based on satellite imaging data held by ArBolivia.</p> <p>The preparation of PIFs was not implemented by a previous contractor on the project at two of the sites visited during fieldwork; full implementation is being sought for the small proportion of producers that are not in possession of a PIF.</p> <p>The next step, once a PIF is in place, is the preparation of maps of the producer's property (by the project Technician in conjunction with the producer). In order to map future land use and achieve improvements in efficiency, the Integrated Land Use Plan (<i>Plan de Ordenamiento Predial</i>, or 'POP') is then formulated as the next step. These documents are to be approved by the ABT (<i>Autoridad de Bosques y Territorios</i>), which is not a legal requirement for small-scale producers, but will constitute a means of providing legal recognition of the farm areas that are included in the project scope.</p>
<b>Conformance</b>	<p>Yes <input checked="" type="checkbox"/>      No <input type="checkbox"/>      N/A <input type="checkbox"/></p>
<b>CAR/REC</b>	<p><b>OBSERVATION:</b></p> <p>1. Full coverage of PIFs, as well as implementation of POPs for all producers participating in the project should be monitored and verified, to ensure there are no gaps left, going forward.</p>
<b>Requirement</b>	<p><b>4.2. Continued participation and training</b></p> <p>Mechanisms are in place for <b>continued training</b> of producers and participation by producers in project development.</p>
<b>Findings</b>	<p>Training activities are carried out by the project, including on technical topics, such as correct pruning practices, and informal examples of guidance being provided on such matters by technical staff in the field were observed during sampling.</p> <p>Training on organizational development was mentioned by one of 2 key staffpersons interviewed on the social 'mobilization' and capacity-building aspects of the project. Tours of more established (i.e. non-project) plantations are also organized, in order to promote the exchange of experiences between plantation owners.</p> <p>See notes on the Forestry Committees, under 1.1.5, above, in regard to project development. Full roll-out of this mechanism for ongoing participation and engagement should be monitored going forward, and where this is not feasible due to low representation of the project in a particular sindicato, alternate mechanisms for continued participation should be ensured.</p>

<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>	<p>OBSERVATION:</p> <p>1. Monitor the establishment of the Forestry Committees, and ensure that alternative avenues of participation are offered, in situations where the establishment of the committee is not possible due to low level of participation of members of a particular sindicato.</p>		
<b>Requirement</b>	<p><b>4.3. Sale agreements</b></p> <p>Project has procedures for entering into <b>sale agreements</b> with producers based on saleable carbon from Plan Vivos, where:</p> <ul style="list-style-type: none"> <li>4.3.1. Producers have recognised carbon ownership via tenure or land-use rights;</li> <li>4.3.2. Agreements specify quantity, price, buyer, payment conditions, risk buffer, and monitoring milestones;</li> <li>4.3.3. An equitable system is in place to determine the share of the total price which is allocated to the producer;</li> <li>4.3.4. Producers enter into sale agreements voluntarily.</li> </ul>		
<b>Findings</b>	<p>4.3.1 Standard sales agreement assigns carbon rights to the project.</p> <p>4.3.2 Agreements meet all of the above-mentioned criteria, as noted through review of the ‘Standard contract for the establishment, maintenance, and harvesting of forestry plantations’ document as signed between ArBolivia and producers.</p> <p>4.3.3 The percentage of timber benefits allocated to the producer was determined to be equitable, based on the underlying business model of the project. Other payments made to producers were found to be equitable, in the opinion of the validator, since they are intended to represent a joint investment in plantation maintenance, not a subsidy thereof. Some producers expressed the view that payments were not adequate, particularly given increasing labour costs in Bolivia due to competition from the agricultural sector, as well as inflation in basic foodstuffs. This was discussed with project management, and it was agreed that ArBolivia may need to revisit the level of payments made upon completion of silvicultural treatments at some future point, to compensate for inflation over the long term. There is likely also an opportunity for the project to increase communication with producers on this topic, around the nature of these payments, i.e. they are intended to partially cover the producer’s costs, as a co-investor.</p> <p>4.3.4 All producers interviewed were found to have entered into the sales agreements, as with the whole project, voluntarily. The general perception was that the project enables producers to achieve a level of investment in forest plantations that would otherwise be unattainable, due to the capital outlay involved, primarily in the seedlings themselves, but also including the technical assistance provided, as well as the payments to share the investment made in plantation maintenance and tending.</p>		

<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>			
<b>Requirement</b>	<p><b>4.4. Payments to producers</b></p> <p>Project has an effective and transparent process for the timely administration and recording of <b>payments to producers</b>, where:</p> <p>4.4.1. Payments are delivered in full when monitoring is successfully completed against targets in sale agreements;</p> <p>4.4.2. Payments are recorded in the project database to ensure traceability of sales.</p>		
<b>Findings</b>	<p>4.4.1 Interview results with all smallholder participants confirmed that payments, in cash, are made in the field, as soon as monitoring by technical staff confirms the completion of targets established for operations.</p> <p>Hard-copy receipts are signed by both parties, and kept in the folder for the relevant smallholding, as verified through document review both in the field and at ArBolivia offices.</p> <p>4.4.2 Updating of database to be further verified as project scales up.</p>		
<b>Conformance</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
<b>CAR/REC</b>			