

The Plan Vivo System - verification status review



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EXECUTIVE SUMMARY

SGS were commissioned to undertake a study encompassing:

- 1) An assessment of the performance of the Scolel Té / Fondo BioClimatico Project in Mexico against the Fondo BioClimatico Systems and Procedures.
- 2) An assessment of the functionality of the Plan Vivo System in relation to the expected requirements of the CDM; and
- 3) The verifiability of the Plan Vivo System.

The work was carried out in December 2001 and involved a visit to the offices of ECCM in Edinburgh and a field visit to the Scolel Té project and Fondo BioClimatico in Chiapas, Mexico. The results of the study were presented at a workshop in Mexico City on 7th December 2001.

The main findings were as follows:

- The Plan Vivo System has great potential for use in developing CDM compliant projects. In particular, activities implemented under the Plan Vivo System are highly likely to be additional, suffer from little leakage and, if certain conditions are met, they have a good chance of being permanent.
- The Fondo BioClimatico has been successful in establishing a range of forestry and agroforestry systems by working with farmers and rural communities. The Fondo BioClimatico systems and procedures cover most of the requirements of the Plan Vivo System, but further work is required to define the essential procedures in a way that will make them cost-effective to independently verify.
- There are also numerous inconsistencies between the documented procedures of the Fondo BioClimatico and actual implementation in the field and office. These inconsistencies are mainly due to:
 - a) the fact that the systems have been (and to some extent still are) under development, and numerous changes to carbon accounting, monitoring and payment procedures have been made over the past 5 years;
 - b) lack of clear structure for decision-making and information gathering in certain aspects of the system - notably regarding decisions on which farmers may enter the project and on the staging of payments;
 - c) lack of narrative descriptions or field notes to explain numerous changes to management plans (plan vivos);
 - d) reliance on a few key staff members who rely on their experience for much of the operational detail;
 - e) differences in interpretation between some staff / local assistants of some vegetation classes used for monitoring and baseline-setting.
- The Plan Vivo System Manual provides useful guidance for project developers seeking to implement carbon management projects in rural areas where the actors are numerous smallholder farmers / communities but in its current form is not suitable as a tool against which to independently verify the implementation of the Plan Vivo System. This is mainly because there is insufficient clarity about which actions / procedures are just recommended or

advisable and which are actual requirements for conformity with the Plan Vivo System.

- The technical specifications against which carbon benefits of the activities promoted by the Fondo BioClimatico are assessed are a valuable resource that can generate benefits of scale and quality for organisations implementing carbon management forestry systems. However, these specifications require further development to provide
 - a) necessary information about the economics of the forestry systems concerned;
 - b) greater transparency regarding the assumptions and sources of data used to make carbon uptake and storage estimates.
- Although the assessment team has experience of a range of projects the particular combination of community-based organisations planting exclusively indigenous species for a productive / commercial return demonstrated by the Fondo BioClimatico is new to the team.

Key recommendations are as follows:

1. Place the Plan Vivo System within a structured management system, such as ISO 9001:2000. This will result in development of formal procedures that can be used to assist the implementation of the Plan Vivo System Manual. Project developers can be audited against the system before they are permitted to use the Plan Vivo System brand name.
2. Address the specific weaknesses identified in Fondo BioClimatico Systems and Procedures.
3. Develop and implement an internal audit procedure whereby Fondo BioClimatico staff can identify where they are not following their own procedures.
4. Ensure that key documentation is included in all files.
5. Urgently seek a solution to the issue of market access for Fondo BioClimatico timber.
6. Monitor progress around the definition of rules and modalities for afforestation and reforestation of projects under the CDM, and if possible, seek opportunities to bring the strengths of the Plan Vivo System to the attention of the relevant bodies.

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GLOSSARY

CDM	Clean Development Mechanism
DFID	The UK Department for International Development
ECOSUR	El Colegio de la Frontera Sur
ECCM	The Edinburgh Centre for Carbon Management
FRP	Forest Research Programme
FBC	Fondo BioClimatico
INE	Instituto Nacional del Ecología
ISO	International Standards Organisation
PVM	Plan Vivo Manual
PVS	Plan Vivo System
SGS	Société Générale de Surveillance

SECTION I - BACKGROUND TO THE VERIFICATION

1 Social forestry and the Clean Development Mechanism

The Clean Development Mechanism (CDM) is one of the so-called flexible mechanisms of the Kyoto protocol that allows trading of Certified Emission Reduction Units between Annex 1 and Non-Annex 1 countries. In 2000, the Sixth Conference of Parties to the protocol (CoP6) agreed that afforestation and reforestation would be included in the CDM. Although it is not yet possible to verify carbon sequestration projects as being CDM compliant (because the criteria for CDM projects have not yet been finalised) a number of verification agencies have begun to verify against likely eligibility requirements. Voluntary and potential CDM compliant projects have started to produce a range of carbon benefits, generally referred as “carbon offsets”.

One of the principal criteria of the CDM will be that activities assist in achieving sustainable development in the host country. Social forestry projects are, potentially, highly compatible with this requirement. Small-scale and community forestry activities can help resource poor farmers diversify their production systems, reducing their susceptibility to crop failures and market fluctuations, and increase family incomes. In many cases the additionality of social forestry projects (i.e. the assumption that carbon offsets would not have been realised without project intervention) will also be high as small-scale farmers often lack the resources or the technical expertise to implement activities without support. However, a number of characteristics of social forestry projects make them inherently more complicated to verify than larger scale commercial projects, notably:

- The large number of small-scale producers involved – record keeping is more complicated and time consuming.
- The diversity of land use systems - assessing and monitoring the carbon sequestration potential of activities is more costly.
- Integration of forestry with other production systems - can complicate the assessment of leakage.
- Benefits can be diverse and the calculation of economic viability is not as straightforward as for commercial operations - permanence of activities is affected by a number of factors apart from profit margins including social cohesion and the farmer’s own perception of risk.

While this does not necessarily mean that they are less likely to be compliant with CDM criteria, it could have significant implications for the cost of verification. Therefore, if the CDM is to realise its objective of promoting sustainable development, management systems that allow cost-effective verification of such activities will be required.

2 The Plan Vivo System

The Plan Vivo System is a system for managing the supply of carbon services from small-scale farmers and rural communities in a way that promotes sustainable rural livelihoods. The system provides a flexible technical and administrative framework for registering and monitoring carbon offsets in a verifiable and cost-effective manner. It incorporates a number of processes designed to reduce the risk of loss of carbon offsets generated by ensuring that carbon offsets are accurately recorded and that activities have a high likelihood of being maintained in the long term. The system is designed around four basic principles:

- Verifiability
- Flexibility
- Transparency
- Simplicity

The Plan Vivo System was developed and tested in the Scolel Te project in Chiapas, Mexico by The Edinburgh Centre for Carbon Management (ECCM) in collaboration with the University of Edinburgh and El Colegio de la Frontera Sur (ECOSUR) with funding from the UK Department for International Development (DFID) Forest Research Programme (R7274). One of the outputs of this project was the Plan Vivo Manual and its dedicated website www.planvivo.org. This website was designed as a training tool and provides a template for the development and implementation of community-based carbon sequestration projects. ECCM has subsequently received further funding from FRP to disseminate Plan Vivo methodologies to projects in other countries, resulting in the development of a new Plan Vivo project in India and a scoping study to assess the feasibility of a project in Mozambique.

2.1 Organisational Structure

The Plan Vivo System is implemented by a host organisation: the Fondo BioClimatico (FBC) in Mexico and Women for Sustainable Development (WSD) in India. The host organisation acts as an intermediary between producers and purchasers of carbon. It may work directly with communities or via established farmers' organisations. It is responsible for registering carbon offset activities, monitoring carbon uptake and for the administration of carbon sales. It is also responsible for providing technical support to producers to enable them to successfully implement planned activities.

The host organisation requires staff with technical and administration skills and experience with working with social development projects. In Mexico the FBC employs a team of social assessors to provide advice on organisational capacity and social stability in communities involved in the project. The host organisation may also employ a team of community technicians who are responsible for certain training and monitoring activities. The use of community technicians helps to improve local involvement as well as reduce operational costs.

2.2 Technical Documentation

The host organisation requires certain technical documentation to provide evidence to support the calculation of carbon offsets generated by registered producers. Technical specifications of carbon offset activities describe the

management requirements necessary to achieve a stated carbon offset. It is essential that the activities described in these specifications are socially and economically viable to ensure both the flow of benefits from the project and the long term viability of offset activities. Technical specifications should be fully evidence-based allowing independent verification of the estimated carbon offset potential. The host organisation also requires documentation for the evaluation and monitoring of offset activities. These documents are used by the technical team to assess the carbon sequestration potential of producers' activities.

2.3 Trial verification of the Plan Vivo System and Fondo BioClimatico

In 2001 in response to requests from carbon purchasers, notably the World Economic Forum and Future Forests, SGS were contracted to carry out a trial verification of the Plan Vivo System and the Fondo BioClimatico in Mexico with funding from DFID Forest Research Programme. The objectives of the exercise were to:

1. Assess the performance of the Fondo BioClimatico against the internal Plan Vivo criteria and compare strengths and weaknesses of this project against other similar projects, known to the assessors. Identify any major corrective actions required.
2. Assess the functionality of the Plan Vivo System in relation to the expected requirements of the CDM.
3. Assess the verifiability of the Plan Vivo System, its associated performance specifications and internal procedures for monitoring and control.
4. Provide recommendations for improvements to the Plan Vivo System in general and to the Fondo BioClimatico in particular, that will enhance cost-effective verifiability.
5. Disseminate findings to DFID, INE, the World Economic Forum and Future Forests.

SECTION II - RESULTS OF THE VERIFICATION

Please note that the objective of the verification exercise was specifically to identify problems and suggest corrective actions with regard to the verifiability of the Plan Vivo System and functionality in relation to the CDM rather than general assessment of the project. This section of the report therefore concentrates on identified weaknesses rather than overall strengths^{*}.

3 Implementation of Plan Vivo System by the Fondo BioClimatico

To allow flexibility in implementing the Plan Vivo System (PVS) in different countries each host organisation should develop its own systems and procedures defined in an operational manual. These should be consistent with the description of the PVS as described in the Plan Vivo Manual (PVM). The verification compared the FBC systems and procedures against the PVM and assessed their implementation by the FBC. In general the assessment showed that most points in the FBC operational manual were compliant with the PVS (see also annexes 1&2). The purpose of the main steps and observations on their implementation by the FBC are discussed below:

3.1 Identifying producers

FBC System: When the host organisation receives an order for a carbon sale it must first identify from which communities it will source the carbon. The FBC works with five farmers' organisations in the target area. Carbon sales are allocated to these organisations based on consultation with farmers' representatives taking into account the number of farmers available in each organisation and past experience with working with these groups. The allocation of sales to communities within farmer's organisations is decided by the same process of consultation with advice from the FBC social assessors. If a new community is involved the FBC takes advice from social assessors to ensure that the community has the necessary organisational and technical capacity and social stability to successfully implement forestry activities and work with the FBC.

Assessment findings: The process of identifying new producers and allocating sales was not sufficiently transparent. While staff were able to give verbal justification regarding the allocation of sales to certain groups and communities, the criteria for the decision making process and the process itself are not documented and therefore not transparent. Improved record keeping would allow greater transparency of decision making and the criteria for allocating sales should be made clearer. However, many of these decisions involve a large number of complex factors concerning the commitment of farmers and cultural interactions between communities and farmers organisations.

FBC/ECCM Comment: FBC staff use their professional experience to make such decisions. Defining criteria would improve transparency but could reduce the flexibility inherent in making expert judgements; reporting on numerous social and political details can also be onerous. The FBC should therefore aim to

^{*} Note that a report by DTZ Pieda commissioned by DFID in 2000 provides a more general evaluation of project and its impacts: DFID 2000, Impact on Sustainable Livelihoods of Selected Forestry and Forest Products Research Theme. Research and Knowledge Series. Available from DFID, London.

provide a documented explanation for the decisions without aiming to specify detailed criteria that must be applied in all cases.

3.2 Preliminary discussions

FBC System: Preliminary discussions with new communities aim to introduce concepts of carbon trading, explain how the PVS works and identify suitable land use systems. The technical team discusses potential carbon offset activities with the community and their planning requirements. Responsibilities and rights of producers and the technical team will also be discussed. In most cases two or three meetings are held before the community begins planning offset activities. In some circumstances preliminary discussions are held before a purchase order has been raised, with the result that FBC maintain a reserve of carbon suppliers (comprising individuals with registered plan vivos with un-sold carbon) and a waiting list of participants who want to join the FBC. Although preliminary discussions are undertaken in Mexico there is no requirement to document these activities either in the PVM or the FBC operational manual.

Assessment findings: Procedures for preliminary discussions are described in the PVM but there are no instructions on the identification and training of farmers representatives. Brief field notes on meetings would improve the evidence base and could help highlight issues that require more work later in the planning process.

3.3 Collaborative agreements

FBC System: Communities are required by the FBC to sign a Collaborative Agreement identifying who is to be involved and who are their representatives. The aim of the agreement is to ensure that all participants understand the responsibilities and rights of involvement with the FBC. This can help the planning process and avoid potential conflicts.

Assessment findings: While a template collaborative agreement for use in Mexico is available this does not appear to fulfil all the criteria listed in the PVM and is understood to be a set format with no scope for modifications to suit individual needs. The template has no document control information. Very few Collaborative Agreements were available on file in the FBC office

FBC/ECCM Comment: In most cases the Collaborative Agreement is held by the community but the lack of an office copy indicates that document control in the FBC needs to be improved.

3.4 Planning Offset Services

FBC System: In order to register their activities producers are required to produce simple management plans in the form of annotated maps, known as 'plan vivos'. Plan vivos must show the entire land holding of the producer and what he/she is planning to do. The plan vivos are used by the FBC technical team to assess the carbon potential of activities and form part of the evidence base for the administration of carbon sales.

Assessment findings: Copies of plan vivos were available in the FBC office. They were found to be simple, practical and clear, participatory (in that the farmers prepare them with the help of the advisor) and flexible (in that the farmers can change their plans and will be credited with carbon accordingly). The plans were

found to be realistic, reflecting the current situation, farmers' objectives and expectations, the work plan and labour requirements. Capital requirements were not included on the plans and the FBC systems and procedures do not include a requirement to specify inputs required or organisational control for community based systems.

While the plans do include all land controlled by the producer they do not present information on land surrounding this. This has implications for assessing potential leakage, as it is not possible to assess whether farming activities could be displaced to other areas. In Chiapas this was not considered to be a problem because land ownership was clearly defined and there is very little vacant land. In other countries there may be increased scope for leakage that is not detected in plans for communities with common land.

3.5 Assessment of plans

FBC System: Plan Vivos are evaluated by the FBC technical team. As well as assessing carbon sequestration potential the evaluation is designed to assess the social and economic viability of the proposed activities through an analysis of the producer's resources to determine whether he/she can maintain the forestry system in the long term.

Assessment findings: Plan vivos have been revised and approved by the FBC but the evaluations appeared to be informal and not documented. Although a format for the evaluation of plan vivos is included in the FBC operational manual, to date this has been used as a guidance document only. The competency of the technical team to carry out assessments was based upon their experience rather than any formal training. The evaluation of social, technical and economic viability was not considered adequate since it has been assumed that all land use systems specified in FBC technical specifications are viable in the long term and no further evaluation is required.

Insufficient guidance was given to determine the opportunity cost for a given site. This is required in order to decide whether or not the system is economically beneficial under specified assumptions and hence to determine if the plan vivo is viable. In addition while the PVM mentions environmental, social, economic and technically viable land use systems the FBC operational manual focuses only on social and technical viability. These are significant issues because the maintenance of activities depends on the systems' long term viability, especially after producers have been paid for the provision of carbon services.

FBC/ECCM comment: The increase in work load, and therefore cost, required to undertake detailed economic valuation of each individual plan vivo is impractical. However the evaluation could be improved by providing a more detailed economic analysis in the technical specifications and by ensuring that all plan vivos include information on expected capital inputs. The evaluation should be documented and it will be necessary to produce a revised version of the current evaluation format (in parallel with the revision of technical specifications) so that the evaluation of each plan vivo may be formally documented.

3.6 Registration and administration of sales

FBC System: The FBC maintains a database with details of all registered producers. A carbon account is set up with the FBC for each producer, who is

issued with an Account Book that shows details of all carbon transactions. Carbon is accredited to this account on the basis of monitoring results according to the schedule in the technical specifications. The accreditation of carbon is staged over 10 years. Once carbon has been accredited the producer may sell up to 90% according to the details of his/her sale agreement (the remaining 10% is maintained as a contingency fund). The database includes information on planned activities, monitoring results, carbon accredited to producer accounts, carbon sales and payments made. Contractual agreements with farmers have three parts:

1. Contract of Agreement for the Provision of Carbon Services. This contains the requirement to replant for 4 or 5 rotations and to lodge 5% of the sale price with the FBC until re-establishment has been completed.
2. A Letter of Registration that specifies the carbon offset potential of each plot.
3. A Sales Agreement (in the account book) that specifies how much carbon can be sold at what price.

Assessment findings: The Contract of Agreement is fundamental to the continuity of the FBC and permanence of carbon storage, however, the document is still in development and consequently only 1 such agreement was found in all the files inspected. It was also found that some files were missing the Letter of Registration. The use of the account book has only recently started and a training programme to explain its use to farmers has been implemented, however, to date few communities have received their account books. Example sale agreements cover most of the criteria specified in the PVM but do not make monitoring targets explicit nor the consequences of not meeting monitoring targets. The legal status of the sale agreements has not been tested. There was some confusion over advance payments, changes to plans etc. and although all transactions inspected were resolved in the end, the process was not readily transparent.

FBC/ECCM comment: FBC systems and procedures have been (and to some extent still are) under development, and there have been various changes over the past 2-3 years designed to improve the administration of carbon sales. Farmers must be consulted before such changes are implemented and provided with training afterwards. While this can improve uptake and compliance with new procedures it takes longer to implement changes. The FBC aims to sign sale agreements retrospectively with all producers registered after 2000.

3.7 Monitoring

FBC System: Procedures for monitoring have been established by the FBC. To allow cost effective monitoring and increase local involvement in the project, community technicians carry out all monitoring. The technical team samples 10% of these to control quality. To date monitoring has been based on survival only. In the near future, monitoring will involve height measurements.

Assessment findings: Activities in the field have clearly been successful in establishing trees, as many plots of well-established seedlings were observed. However, there were many cases where there was some kind of deviation from the expected activities that required explanation. These issues were not recorded in the files and there was no documentary evidence to explain developments. There were also discrepancies in the baseline monitoring form at intake and the first monitoring, particularly in relation to the number of trees that form the

baseline. Monitoring records need to be improved to document such changes. Other monitoring activities appeared to be under control.

3.8 Communication

FSC System: The FBC has a number of communication pathways with farmers, these include formal meetings and training events, communication through representatives at twice-yearly meetings and informal discussions in community visits. The aim is to ensure that farmers understand their responsibilities as well as passing on technical forestry skills.

Assessment findings: Communication was found to be insufficient in some respects:

- account books were not well understood;
- of the farmers interviewed (approx 15 individuals) many did not understand that replanting after the first rotation was a requirement;
- the role of community technicians in the communication of information, explanation and advice to farmers could be improved.

FBC/ECCM Comments: The FBC is working mainly with illiterate and largely uneducated farmers and it is not reasonable to assume that all participants will understand all aspects of carbon trading mechanisms. The FBC must, therefore, aim to ensure that key members of each group understand the basics of the system so that the FBC can work with these individuals to ensure that all the group understands the responsibilities of participation. The FBC has a strong basis from which to do this but more efficient communication will be required.

3.9 Other issues

Assessment findings:

Document control - Revision of documents, tracking of documents and approval of documents were all causing problems and reflecting the fact that existing document control procedure is not adequate.

Staffing - There is also a dangerous reliance on the knowledge of several key members of staff. Without documentation and training materials, the project is very exposed to changes in staff. Continuity would be hard to ensure during anything but a protracted hand-over period. Internal audit - There was a notable lack of any internal audit procedures whereby FBC actually checks the implementation of their own systems and procedures. This is a fundamental requirement of even the most rudimentary management system.

3.10 Comparison with other carbon projects

The assessment team has direct and indirect experience of a range of projects including conservation and afforestation / reforestation with indigenous and exotic species by commercial, not-for profit or community-based organisations. However, the particular combination of community-based organisations planting exclusively indigenous species for a productive / commercial return demonstrated in this project is new to the team.

The closest parallel is the Programa Face de Forestacion (PROFAFOR) implemented by the Face Foundation in Ecuador. In this project, the ultimate aim is to re-create stable long term stores of carbon in natural forests, but exotic species are being planted to create conditions suitable for the re-establishment of the montane forests in subsequent rotations. Instead of small-holders, the

project is working with landowners and communities who are relatively land rich but resource poor. Many of the same problems are encountered, for example the complexities of ensuring the long term presence of trees on the land. PROFAFOR has implemented a contractual arrangement that holds the land as security against failure to replant. How effective this contract proves will only be known when and if the trees are replanted.

All stakeholders agree that such contracts would be unworkable in Mexico. For most small-scale farmers land provides their only or main livelihood and any action to claim rights over land would have serious social impacts and be contrary to the aims of the Plan Vivo System. The FBC plans to address the issue of permanence by creating a long-term forestry culture amongst the participants. PROFAFOR has also sought and obtained FSC certification for their activities although this has been a demanding target given the fact that the predominant species are exotic. Nevertheless, the FSC certification provides investors with added confidence that the project is not having negative social or environmental impacts.

3.11 Summary

FBC Systems and Procedures were found to address the majority of the requirements of the PVS Manual. The most significant shortfall was the evaluation of long term viability in individual plan vivos. Less significant issues identified include the lack of instructions or guidance on the identification and training of community representatives and the omission of monitoring targets from the sale agreement documentation. With respect to the guiding principles the following observations were made:

- **Verifiability:** Systems are not sufficiently evidence-based. There are few requirements for evidence to be recorded and technical Specifications were found to be based on insufficient evidence.
- **Flexible:** The PVs allow the producers to be flexible in the implementation of their plans.
- **Transparency:** The trust fund is used to demonstrate transparency in the accounting processes, trustees represent the key stakeholders and control the dispersion of funds. However FBC systems and procedures are not fully transparent because they do not require reporting, recording and justification of decisions.
- **Simplicity:** the PVs are simple and the process of announcing the opportunity and selecting the producers is relatively simple though not documented.

Although the FBC has clearly been successful in working with farmers to implement forestry systems as described in the technical specifications, non-compliances arose against most of the FBC systems and procedures and it is not possible to efficiently verify the activities. Too many decisions are not documented and therefore not sufficiently transparent; too many files have incomplete records and require “special” explanations. It is possible to verify activities under these conditions but it is a time consuming, expensive and inefficient process as the verifiers cannot sample records under the assumption that each record is representative of the whole system. Cost effective verification requires that there is a transparent audit trail, based around essential documents.

To make the FBC more verifiable, the system needs to be strengthened and a clearer audit trail established with improved documentation and reporting requirements. A balance must be found between an overbearing documentation system and one that does not facilitate auditing. Maintaining records of visits and meetings with farmers will facilitate an understanding of any special information. This could be collated by community technicians and reviewed by FBC staff periodically in order to check the general progress and assess the level of understanding and need for training in a given community. Establishment and implementation of an internal audit programme will greatly help the FBC to understand where and how their systems can be improved.

Areas for immediate improvement are:

- Preparation and installation of the Contract of Agreement for the provision of carbon services;
- Sales Agreements and account books provided to all farmers, complete with explanations to the farmers on the significance of these documents; and
- Documentation of the criteria and justification for decisions in allocating carbon sale opportunities to specific communities.

4 Comparison with CDM requirements

The PVS has been initially designed for development of projects that yield voluntary carbon offsets (as opposed to Kyoto compliant Emission Reduction Units developed under the rules of the flexibility mechanisms). There may be additional value in creating projects that could be registered under the CDM. In order to assess whether a PVS project could be registered as a CDM project, the Plan Vivo Manual was compared against the requirements of the SGS Eligibility Criteria¹ and the current negotiating text as expressed in the Marrakech Accords² (see annex 3).

It was concluded that the PVS has the potential to form a template for the design and implementation of sinks-based CDM projects amongst rural communities who otherwise would not have access to the benefits of the carbon market. The most difficult issue is permanence. This problem faces all forestry projects and if the PVS succeeds in instilling a forestry culture into stable rural communities the potential for permanent carbon sequestration is very high. The only remaining issue is the actual amount of carbon that can be claimed. Baselines with existing vegetation combined with the cost of monitoring anything other than above ground biomass mean that, if other benefits are disregarded, some of the interventions may be economically marginal or non-viable.

The assessment of Fondo BioClimatico against potential CDM Requirements could not be directly carried out because the exact details of CDM compliance have yet to be defined. However, based on the various assessments above, observations in the field and the issues highlighted in recent CoP negotiating texts, some preliminary comments may be made:

¹ SGS maintains a set of Eligibility Criteria based on the requirements of the Kyoto Protocol.

These may be viewed at www.sgs.nl/climatechange

² www.unfccc.de/marrakech_accords

4.1 Eligible activities

The current project is working with afforestation and reforestation, which the Parties have agreed are eligible CDM activities for the first commitment period. The number of credits generated by the project is very unlikely to exceed the restricted level of demand for CDM

4.2 Host country acceptability

The FBC project presents a very strong case for host country acceptance. The project is registered under the UNFCCC programme for AIJ. The application of the PVS results in the voluntary integration of established and improved land use practices into existing land management at the level of an individual land-owner. In addition to sequestering carbon, the resulting systems will:

- Diversify production for farmers reducing exposure to price fluctuations;
- Provide raw materials for construction and high quality use;
- In some instances, enhance crop production;
- Create and enhance wildlife habitats; and
- Reduce pressure on remaining natural forest resources.

These and other benefits are likely to be seen as contributing to sustainable development within the host country. However it should be noted that in its current form the PVM has no requirements for liaison with government departments nor to seek the approval of the National Authority for Climate Change.

4.3 Additionality

FBC activities have a high likelihood of passing additionality tests. Although the land-use on the land in question may vary over time, for example between fallow and maize, the carbon storage on this land will be low. Under the with-project scenario, where trees are introduced into the land use system, the carbon storage will increase. It is clear that farmers are not currently active in planting trees, nor have they done so in the past. The barriers to them doing so include initial costs of planting; planning and management assistance; access to markets for the end product. The project can help overcome these barriers by providing capital payments during the early life of the trees; helping farmers to plan using the PVS; and facilitating the registration of small plantations so that the farmers can sell the products at market prices.

However, the PVM should provide more specific guidance on how to produce transparent and conservative baseline and with project scenarios. The specification of carbon reserves to deal with uncertainty should also be based on a more transparent process (FBC currently specify a 10% reserve).

4.4 Monitoring

FBC currently estimates carbon content in all pools under the with-project scenario but only monitors tree growth (initially survival and then height and diameter). Credit is currently awarded for additional carbon storage in all pools. Under a CDM scenario, any credits claimed would have to be based on monitoring data. In practice this means that the viable carbon pools are only likely to be above ground biomass in stems, branches and leaves. Unless carbon has a very high value, the costs of monitoring carbon storage below ground and in products would be prohibitively expensive.

The consequence of this is that some of the interventions will fix relatively little CDM compliant carbon and may not be economically viable for the farmers nor efficient for the FBC. One way to increase the amount of carbon claimed may be to refine the baseline methodology, by for example, stratifying the vegetation types so that the baseline is more accurate and representative of the real situation and less conservative.

4.5 Non-permanence

The problem with afforestation and reforestation projects is that once credits have been awarded, the trees may be harvested and the sequestered carbon released. If there is no guarantee that trees are planted elsewhere, then the project activities will not have had the long term effect on climate change that is required. Various accounting regimes are being proposed to counteract this problem, but the fact remains that to create carbon benefits, the land must remain under forest for a significant period of time (for example 100 years).

To address this problem, farmers are required to lodge 5% of the revenues from the sale of the trees with the FBC, to be repaid when the subsequent rotation has been established. If the farmer wishes to drop out of the FBC, the 5% of sale value will be used to pay another farmer to take part. However, to date, few such agreements have been signed. In addition, the FBC aspires to work with the farmers in the longer term to facilitate harvesting, processing and marketing of wood products and thereby to instil a forestry culture into the communities. At least two problems exist:

a) Access to markets for quality timber species. Permits are required to transport and sell high quality timber species such as cedro and coaba (mahoganies). This legislation is designed to protect natural forest. Permits are allocated to registered plantations. The registration process is prohibitively expensive for farmers and as a result, they are not currently able to sell their Plan Vivo trees on the open market.

b) Where communities join the FBC, they are more likely to use the wood for house construction within the community and it will be difficult to assess the profit from the plantations.

These problems could have several significant impacts:

- The forestry systems may not be economically viable;
- Farmers may not realise sufficient money to consider it worthwhile replanting for a second rotation; and
- If the 5% is collected, it will not be sufficient to pay for the establishment of a new plot.

4.6 Accounting regime

The accounting regime for sink-based activities has yet to be defined. Whatever the method chosen, it will most likely involve crediting *ex post*, i.e. after the carbon has been sequestered. This is quite different from the current practice within FBC where Voluntary Emission Reductions are issued in advance. Changing the accounting and crediting regime will have a significant impact upon the way farmers receive financial benefits.

4.7 Leakage

The PVS takes leakage into account by requiring the farmers to identify all their lands on their Plan Vivo. In evaluating the Plan Vivo, the technicians ensure that

the farmer has retained adequate land to provide for the family and that further lands are not cleared to provide additional production capacity. Land is not generally available within these communities as it has all been allocated, so any shortfall in production should be made up by intensifying production on the remaining lands. However, it is possible that some participants may purchase the rights to more land and this information should be captured on up-dated Plan Vivos in order to assess leakage.

4.8 Environmental and social impacts

Although the PVS has no requirement to assess environmental impacts the PVM states that land use systems should be viable in the long term, implying environmental suitability. In the case of the FBC the environmental impacts of the project activities should be beneficial. All planted species are native and will enhance and protect biodiversity, diversify production and reduce pressure on remaining forest resources. The only negative impact may be a reduction in crop yields in some circumstances. However this should be offset by the economic value of the timber. Social impacts should also be beneficial although there is always scope to introduce friction into communities.

4.9 Recommendations

The PVS Manual could be revised to include CDM compliant options that would need to be completed if the objective was to create a CDM project. The individual details would depend on the project but the following issues would have to be addressed in a comprehensive set of project design documentation:

- Host country acceptability – the project must comply with host country sustainable development objectives;
- Definition of baseline – guidance would be required in the PVS Manual
- Proof of additionality – this should not be difficult for rural community based activities;
- Permanence – conditions for permanence must be identified so that projects can be assessed for permanence at an early stage;
- Social and Environmental Impacts – strengthen assessment of environmental and social impacts in PVS;
- Leakage – strengthen existing section in PVS and define how leakage will be identified, monitored and compensated;
- Monitoring – to be defined in Monitoring and Verification Plan that shows what information will be collected, when and how, and how this information will be used to demonstrate that additional carbon has been sequestered; and
- Accounting regime – changes to the accounting regime from that used in the FBC will mean that terms of payment to participants will have to be reviewed.

Early crediting of CDM Projects: In the current draft Decision -/CP.7 (Article 12) paragraph 13 proposes that project activities that started after 2000 and were underway before the adoption of this CoP Decision (i.e. November 2001) shall be eligible for validation and registration as CDM projects, if they register before 31st December 2005. If registered, the crediting period for this project may start prior to the date of registration but not before 1st January 2000. If either of the PVS projects that are currently active (FBC and WSD in India) wanted to claim early credits, this decision means that they must register before 31st December 2005. Since the rules and modalities for land use projects may be defined at CoP

8 in 2002, there is a good window of opportunity to turn some of the carbon sequestered to date into Kyoto Compliant carbon.

5 Verifiability of the Plan Vivo System

This section deals with the verifiability of the system, i.e. to what extent the Plan Vivo System can serve as a standard that can be used for project design, development and implementation. This was assessed through two evaluation procedures:

1. The PV Manual was compared to an ISO 9001:2000 short checklist and
2. The degree to which the procedures defined in PVS are implemented across a range of projects was assessed – with reference to the Fondo BioClimatico in Mexico, Women for Sustainable Development in India and the Gorongosa Buffer Zone Project in Mozambique.

The PVS has great potential to develop carbon sequestration projects amongst rural and agricultural communities. Recent involvement with energy projects in India also supports the assertion that the system could be applied more widely. The assessment of the PVS Manual against ISO 9001:2000 has shown that many of the traditional elements of a quality management system are already in place but it has also shown that there are some key elements that have not been developed (see annex 4). There are problems associated with the lack of adequate procedures to control operations within ECCM, including exposure to the risk of staffing changes and difficulty in training new staff to provide continuity. If the PVS is adopted outwith the influence of ECCM, then there are currently insufficient controls in place to ensure that projects would be developed to an appropriate standard. However, it is clear that to date, ECCM has been able to make the PVS work.

5.1 Control of the Plan Vivo System implementation

The PVS is written in the form of a guidance document and consequently, there are few areas where compliance is required. In general, guidance is presented in terms of “should” and “may” rather than “must” and “will”. It is therefore difficult to identify a non-compliance with the requirements of the manual. This is not necessarily a negative finding as in its current format, the PVS enables project developers to exercise their judgement in the implementation of a flexible mechanism in widely differing cultural settings. Indeed, this is a strength of the current approach. However, it means that verifying the implementation of the PVS as it currently stands is not possible. Essentially, the only criteria that could be assessed are the guiding principles and the three stages of development. Even if the semantics are set aside and the spirit of the PVS is embraced, it will still be difficult to verify implementation because there are very few requirements for documentation during the process. There are significant advantages with minimising documentation but at the same time, there are trade-offs with transparency and verifiability and many assumptions have been accepted and key decisions made without documented justification during project development.

5.2 Guiding principles

Parts of the projects were found to be in compliance with the guiding principles while other parts were not:

- The use of technical specifications with references to published data and other sources provides a structure for establishing the evidence-based system. However, there was very little evidence available to support the decisions and actions of the project in India and the carbon sequestration potential was not supported by evidence.
- Flexibility is provided through the structure of the trust fund that enables farmers to sell carbon as and when they need to do so and through the ability to modify Plan Vivos. The accounting procedures and reserve ensures that carbon benefits are real.
- Transparency was demonstrated through the accounting procedures of the trust fund. However, decision-making processes during project development were not at all transparent.
- Simplicity was demonstrated through the simple maps and plans of land use drawn by the farmers and the design of the technical Specifications.

5.3 Plan Vivo project development

The Plan Vivo Manual (PVM) describes three phases of project development: feasibility study, pilot phase and operational stage. The feasibility study describes 6 steps that should be taken when developing a project from scratch.

1. Identification of target group and area
2. Identification of informants
3. Introduction of the Plan Vivo System to Farmers
4. Assessment of the carbon sequestration potential of offset activities
5. Market survey
6. Identification of the necessary organisation structure and personnel

Because the manual was based on experiences in Mexico the processes described largely reflect activities undertaken there. However, no formal feasibility study, as described in the manual, was undertaken in India or Mozambique. It is accepted that the feasibility study as described in the PVM will not be appropriate in many circumstances, due to cost and time constraints. In many cases some of these actions will have been carried out in other project work, for example WSD in India was already working with target groups and was promoting land use systems that it regarded as socially and economically viable. Several parts of the feasibility study will be continued in the pilot phase and in the case of India these two stages were largely combined.

However, certain information requirements described in the feasibility study section of the manual are vitally important to the development of a successful project and will require verification if the Plan Vivo standards are to be maintained. In particular, evidence supporting the long term social and economic viability of proposed land use systems will be necessary as will evidence supporting estimates of associated carbon benefits.

5.4 Assessment of Host Organisation

The institutional structure and capacity of the host organisation will also have to be assessed if the PVS is to be properly implemented. However, there is currently no requirement within the PVM for a review of the suitability of host organisations (in terms of structure or capacity) or the quality of information presented by the organisation. There was a lack of information and reporting on decision making undertaken by ECCM in scoping studies in India and Mozambique. Reports from field visits varied in structure and made few

references to the objectives of the visit. Recommendations and decisions were not justified in many cases; little objective evidence was presented; financial data were assumed. There was no evidence of any kind of review taking place and it was not possible to determine at what point in time the decision to proceed with the Indian project was made. Nor was it possible to determine who made the decision.

Whilst the management system applied by ECCM to the implementation of PVS Projects was currently adequate to cope with existing demands, the level of control could become problematic if the programme were to expand or existing staff were to leave. There was very little documentation of activities carried out and very few reports on progress. There were no review procedures, nor reviews to date; little input from external sources; no means of demonstrating competence amongst staff and host country organisations. Assessments against criteria in the PVM seem to have been made informally with little or no documentation or justification for the decisions. Nevertheless, the projects appear to be functioning well and Scolel Té is expanding and control is being handed over to the host country organisation.

5.5 Assessment of technical documentation used by Plan Vivo projects

The carbon offset potential of activities registered by Plan Vivo projects are specified in technical specifications. These should be evidence-based documents that describe minimum management requirements in order to achieve a given carbon offset. The responsibility for the production and evaluation of such documents is not clearly stated in the PVM. To date these documents have been produced by the host organisation working with local research institutes and ECCM. In Mexico land use systems and carbon estimates were made jointly by ECOSUR, a regional institute in Mexico and ECCM. In India, WSD has produced the technical specifications, ECCM assessed the quality of information and recommended modifications to the carbon sequestration estimates accordingly. However, there is no formal internal or external review process set out in the PVM.

Specifying Land use systems

Land use systems applied in Plan Vivo projects must be socially and economically viable in the long term, and therefore must provide tangible incentives for farmers to maintain these land use systems in the long term. In Mexico, considerable effort has been made to develop the interventions; in India, practices were adopted based on existing land use activities. Unless existing land use systems are utilised, there is considerable risk that without a detailed study the proposed interventions will not be adopted by farmers. In India comparative profitability is based on potential income and assumed prices, but the wider impacts of the land use systems on the local economy have not been included in the assessment. In Mexico the socio-economic potential was assessed through interviews with host organisation; net costs of implementing carbon sequestration were estimated but it is not clear what assumptions are required to make systems economically viable and analyses do not present an assessment of internal rate of return or net present value.

The lack of evidence to support the assumption that the interventions will be viable in the long term represents a significant non-compliance. Professional judgement can be applied when assessing viability on the ground, but the

competence of the individuals must be established and demonstrated. Demonstration of a clearer understanding of the issue of economic viability is required and this can be used to provide more guidance on how to determine whether or not the intervention is economically beneficial to the farmers. Guidance can also be given as to how to minimise the impact on existing crops, such as through pruning, planting in relation to aspect, managing for natural regeneration etc.

Estimating Carbon Sequestration

The carbon sequestration potential is fundamental to the proposed project and must be explained in the fullest detail. In Mexico, 7 technical Specifications have been defined based on extensive work during the Feasibility Study phase. One Technical Specification is still in draft form awaiting approval as per procedural requirements. All specifications follow a common layout that is broadly in line with the requirements of the PVS. However, although the carbon sequestration potential of the land use systems in Mexico has been well studied, evidence presented in the technical specifications was not sufficiently clear and transparent. While references were given to peer reviewed articles these did not contain details of parameters used. The contribution of the relative components of biomass, necromass, wood products, soil carbon etc is not shown. (Specific problems with individual technical specifications are given in Annex 5.)

The amount of evidence presented in support of the specifications in the Indian project is considerably less than that presented in support of the Mexican specifications. Detailed assessments of carbon sequestration potential were not available and the figures were based on conservative estimates. An estimate of 50tC per ha has been used for mango plantations on dry land, but the derivation of this figure is not transparent.

Technical specifications from both Mexico and India assume that the baseline will remain constant. If the carbon is destined for a voluntary market, then the baseline may be less important than a base point, but if the project intends to seek CDM registration at a later date, the baseline must be a line, not a point. It is not sufficient to assume without justification that the baseline remains static.

Ideally the technical specifications should be stand-alone documents without the need to refer to further citations. (This makes it much easier for stakeholders and interested parties to review the specifications). However, it will not be feasible to present raw data from, for example, biomass surveys, and hence citations to other references will be required as per standard practise in most scientific publications. Specification should include the outputs of model runs, the parameters used and justification for the selection of these parameters.

5.6 Recommendations

It is recommended that ECCM carefully consider placing the PVS within a quality management system such as ISO 9001:2000 to enable more effective control over the implementation and use of the PVS. This would entail the development of two additional layers of documentation in the Plan Vivo Manual:

- A top-level document in which the quality policy and quality objectives for the PVS would be laid out, identifying the quality requirements of the various customers and showing how the PVS meets these quality requirements

- A Procedures Manual that includes, for example, simple document control and record control procedures, procedures for purchasing of services, review and internal audit procedures etc.

The Plan Vivo Manual would then form the third level of documentation describing how to establish a PVS Project with links upwards to the relevant procedures in the Procedures Manual and downwards to the associated documentation in the fourth level such as template sales agreements; environmental and social assessment forms; carbon sequestration spreadsheets etc. The Manual should also be revised to specify which actions are requirements and which are recommendations. Reporting points must be identified throughout the process where a written report is required documenting the progress to this point and providing justification and objective evidence for decisions and assumptions. Project specific procedures can be added as Special Procedures for example procedures specific to the operation of a trust fund under Mexican law.

The Feasibility Study should be revised to allow greater flexibility in the completion of the exercise. Much of the existing guidance remains valid but in its current format it is impractical for most projects and is not suitable for verification purposes. Rather than specifying actions to be undertaken the Manual should focus on required outputs which could be assessed by ECCM or a third party in order for the project to achieve the 'Plan Vivo Standard'. Assessment criteria should be clearly defined and the process fully documented. Such instructions would form part of the relevant procedure in the Procedures Manual. Mandatory targets could include:

- Suitability of host organisation and associated institutions
- Identification of suitable land use systems
- Transparency of carbon offset calculations
- Farmer participation in planning activities
- Accurate data recording and transparent accounting systems
- And potential to comply with CDM Eligibility Criteria.

Once the Quality Management System is complete, project developers who wish to use the PVS would have to commit to the QMS and agree to follow the procedures specified in the Procedures Manual. These procedures will ensure that they implement the guidance and instructions in the PVS appropriately and keep suitable records as they do so. ECCM or a third party could audit the project developers to ensure that they have followed the essential procedures. An independent entity could issue a verification statement. If the PVS is found to comply with, for example, CDM Eligibility Requirements, then the validation and verification tasks of an Operational Entity will be simplified.

ANNEXES

Annex 1: Assessment of the FBC systems and procedures against the Plan Vivo System

Assessment checklist from SGS assessment with comments from ECCM incorporated.

Criterion	FBC S&P ref	Finding	Compliance ?
3 Guiding Principles		<p>Transparency: Transparency in the FBC S&P needs to be improved. Although a considerable amount of information is recorded for every producer there are deficiencies in the reporting, recording and justification of decisions. Simplicity: the PVs are simple and the process of announcing the opportunity, selecting the producers etc is relatively simple though not documented.</p> <p>Flexible: The PVs allow the producers to be flexible in the implementation of their plans.</p> <p>Evidence-based: The evidence presented in the technical specifications was not sufficiently clear or transparent, outputs from carbon models and details of parameters used should be provided</p>	N
6 Pilot Project		The pilot project has been completed in that the main objectives have been fulfilled: Trust Fund established and selected communities have produced and sold carbon.	Y
6.1 Trust Fund	8; 9.2	The requirement for a Trust Fund is described in clauses 8 and 9.2	Y
6.2 Identifying Buyers	1	FBC intends to find buyers through its contacts with national and international organisations.	Y
6.2 Preliminary discussions	2; 3	Procedures for preliminary discussions are described but there are no instructions on the identification and training of farmers representatives	N (minor)
6.3 Collaborative Agreements	3.2; A2	Procedures for establishing Collaborative Agreements are in place. Annex 2 provides a pro-forma that covers the points in the PVS.	Y
6.4 Planning offset services	4	Procedures for the planning of forest and agroforestry services are present.	Y
6.5 Working Plans	4	<p>The instructions do not include a requirement to identify</p> <ul style="list-style-type: none"> Resource requirements including capital inputs; Organisation and control for community based systems. 	N
6.6 Assessment of working plans	5	Annex 6 in the FBC S&P provides guidance on assessing social and economic sustainability but this was considered inadequate to assess long term viability on the basis of environmental, social and economic sustainability.	N
6.7 Sale Agreement	6.1, 6.2	Three levels of agreement are described: Contract of agreement for carbon service provision (Annex 9):	N (minor)

Criterion	FBC S&P ref	Finding	Compliance ?
6.8 Implementation and transfer of funds	and 8.2 & A 9, A10 8.3	(Annex 9); Letter of Plan Vivo Registration (Annex 10); and Sale Agreement (no template available). The Contract of Agreement states that ‘carbon will be credited ..after verification of monitoring targets’ and a schedule for the accreditation of carbon is given in the letter of Agreement, however the monitoring targets are not stated. Procedures for the award of carbon and transfer of funds are available.	Y
7 Monitoring	7 and 9.2	Procedures for monitoring are described.	Y
8 Operational Stage – Scaling up		There is no specific procedure for the Operational Phase but procedures 6.2 to 6.8 and 7 constitute the operational phase.	Y

Annex 2: Assessment of the implementation of FBC Systems and Procedures

A checklist based on the FBC S&P was prepared and staff were interviewed, documents were reviewed and field sites visited to complete the assessment. ECCM have added further comments and clarifications to the checklist.

Criterion	FBC S&P ref.	Finding	Compliance?
Identifying Purchasers	1	This is currently undertaken through existing international contacts such as ECCM.	Y
Identifying Producers	2	FBC staff were able to give a verbal justification of the process of identifying and selecting producers through community organisations but neither the process or the selection criteria were documented. There are 5 community organisations with whom FBC is working. When a purchase order is received, FBC staff decide how much to allocate to each of the community organisations. This criteria for decision making process and the process itself are not documented and not transparent. Communities are then required to sign a Collaborative Agreement identifying who is to be involved and who are the representatives. Very few Collaborative Agreements were available	N
Preliminary Discussions	3	Preliminary discussions are undertaken although in some circumstances they appear to start before a purchase order has been raised, with the result that FBC maintain a	Y

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Criterion	FBC S&P ref.	Finding	Compliance?
Discussions		reserve of carbon suppliers (comprising individuals with registered PVs with un-sold carbon) and a waiting list of participants who want to join the FBC.	
Planning (agro)forestry activities	4	Plan Vivos have been prepared showing the necessary information, although there is always scope to improve the quality of the Plans and add more information.	Y
Evaluation and revision of PVs	5	PVs have been revised and approved. Evaluation of social, technical and economic viability has not been adequately performed. It appears to have been assumed that all technical specifications are viable and no further evaluation is required. The existing evaluations are informal, not documented and not transparent.	N
Registration of PVs	6	There are three parts to the contractual agreement: Contract of agreement for the provision of carbon services. This contains the requirement to replant for 4 or 5 rotations and to lodge 5% of the sale price with the FBC until re-establishment has been completed. The administration of the FBC has undergone some major changes in the past 2 years with the aim of improving accountability. The contract is currently being drafted together with farmers' representatives and hence only 1 such agreement was found in all the files inspected This document is fundamental to the continuity of the FBC and permanence of carbon storage. The FBC plans to fully implement the use of this letter in 2002 and back date it to all farmers registered from 2000. NOT All files inspected had Letter of Registration for Plan Vivo. Sales Agreement accompanying the "libretta" or account book. Only one sales agreement and libretta were found in all files inspected. The use of the account book began in 2001 and the issue of account books and associated training will continue over the course of the next year	N
Technical monitoring and carbon crediting	7	There were some discrepancies in the baseline monitoring form at intake and the first monitoring , particularly in relation to the number of trees that form the baseline. Other monitoring activities appeared to be under control.	N
Administration of carbon sales	8	Due to the nature of the project the FBC requires a relatively complex information management system. The database contains information referring to all plans registered, monitoring activities and carbon transactions. However, there are some discrepancies, partially due to the ongoing development of the administration. There was confusion over advance payments, changes to plans etc and although all transactions inspected were resolved in the end, the process was not readily transparent.	N
FBC Communication Systems	9	Communication was found to be insufficient in some respects: many farmers did not understand that they had to replant after the first harvest,the account books were not well understood. It can take a number of visits to get	N

Criterion	FBC S&P ref.	Finding	Compliance?
Systems		ideas across properly, and a considerable amount of the amount of information has been disseminated concerning planting and maintaining trees, conducting monitoring, and planning forestry systems. Community Technicians could play a more active role in the communication of information, explanation and advice to farmers.	
Document control	10	Problems were observed with the revision of documents, tracking of documents and approval of documents reflecting the fact that existing document control procedure is not adequate.	N
Implementation of activities in the field		Activities in the field have clearly been successful in establishing trees, as many plots of well established seedlings were observed. However, in many cases there was some kind of deviation from the expected developments that required explanation by FBC or ECCM staff. These issues were not recorded in the files and there was no documentary evidence to explain developments.	
Other issues in the office		There is a dangerous reliance on the knowledge of several key members of staff. Without documentation and training materials, the project is very exposed to changes in staff. Continuity would be hard to ensure during anything but a protracted hand-over period. If the project attempts to expand, it will be impossible to do so efficiently and effectively because the individuals with the experience to expand the scheme will remain crucial to effective running of the existing PVs. There was a notable lack of any internal audit procedures whereby FBC actually checks the implementation of their own systems and procedures. This is a fundamental requirement of even the most rudimentary management system.	

Annex 3: Comparison of Plan Vivo Manual against the requirements of the SGS Eligibility Criteria³ and the current negotiating text as expressed in the Marrakech Accords⁴.

The Marrakech Accords arising from CoP 7 in 2001 provide further details on what will be expected from projects seeking to register under the CDM. However, the definitions and modalities for including afforestation and reforestation in the CDM are still to be developed.

Criterion	Comment	Compliance?
Participation requirements / Acceptability⁵ Voluntary participation in the form of written approval from National Authority of all parties and confirmation that the activity assists in achieving	No requirement in the PVS to liaise with government departments nor seek the approval of the National Authority for climate change.	N

³ SGS maintains a set of Eligibility Criteria based on the requirements of the Kyoto Protocol. These may be viewed at www.sgs.nl/climatechange

⁴ www.unfccc.de/marrakech_accords

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Criterion	Comment	Compliance?
sustainable development in the host country		
Host country designates National Authority for CDM	Not referenced as a requirement.	N
Host country is Party to the Kyoto Protocol (i.e. must have ratified)	Not referenced as a requirement.	N
Non-host country requirements	These are not particularly relevant to the project or host country and it is allowed to develop a CDM project without a non-host party, with the objective of simply selling the credits on the open market.	
Solicitation of stakeholder comments and summary	Targets groups and areas are to be identified and this will necessarily involve some stakeholder consultation, but there is no specific requirement for, nor guidance as to how to undertake, a wider stakeholder consultation.	N
Report on how due account has been taken	There is no requirement to prepare any kind of report nor demonstrate how comments have been given due account.	N
Environmental impact assessments, following host country guidelines if required	The PVS does not anticipate actions that would have negative environmental impacts so this requirement has not been addressed.	N
Eligible activities	The CDM allows afforestation and reforestation activities. The PVS allows suitable viable, beneficial landuse practices to be developed and these include eligible activities.	Y
Additionality^s		
The baseline shall be established in a transparent and conservative manner regarding the choice of approaches, assumptions, methodologies, parameters, data sources, key factors and additionality, and taking into account uncertainty*	The PVS does not provide sufficient guidance on how to create a baseline that meets these criteria. Emphasis is on a base point, combined with the assumption that the land use activities will remain static and therefore the base point may be extrapolated into a baseline. This may or may not be a suitable assumption.	N
The with -project scenario will be predicted in a transparent and conservative manner regarding the choice of approaches, assumptions, methodologies, parameters, data sources, key factors and additionality, and taking into account uncertainty*	The with -project scenarios are defined in the technical specifications and if these are made more transparent, they would be suitable for the purpose of predicting carbon credits. In FBC, uncertainty is addressed through the carbon reserve of 10%. Whilst this may be sufficient, the choice of the size of the reserve should be transparent.	N
Additionality will be demonstrated on the basis of: Emissions additionality; and Programme additionality or Financial additionality	Comparing the baseline against the with-project scenarios proves emissions additionality. There is no specific requirement to prove programme or financial additionality in the PVS although rural and community based activities are likely to be additional since farmers may lack the necessary capital, planning and management skills, institutional support, market access etc.	Y
Crediting time will be defined*	No guidance is given on how to quantify the carbon sequestration benefits. [The KP does not define how to	N

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Criterion	Comment	Compliance?
	sequestration benefits. [The KP does not define how to quantify carbon yet although SBSTA is asked to provide recommendations for CoP 8].	
Externalities		
Leakage will be identified and monitored ^f	Leakage must be considered during the definition of land use activities. It is likely that more guidance would be required on how to do this.	Y
Negative environmental and social impacts will be minimised and positive impacts encouraged in line with host country sustainable development objectives*	The land use systems specified in the technical specifications must be designed to be viable in the long term. This means that they must be environmentally, socially, economically and technically viable.	Y
Capacity		
The project shall demonstrate suitable capacity in the following areas:	The 3 phases of the PVS encourage the development sufficient capacity.	
Project and resource management	Having completed the pilot project phase, there is a good opportunity for a PVS project to demonstrate the capacity to manage a larger scale project.	Y
Availability of financial resources	The Trust Fund system ensures that if the project is successful in delivering carbon to a market, financial resources will be made available. The FBC defines the budget required for operations.	Y
Infrastructural support	The PVS encourages project developers to work with existing NGOs and not-for-profit organisations. Such partners may already possess useful infrastructures and may be able to access funding and grants to develop additional infrastructure.	Y
Technological innovation	The PVS encourages the development of viable interventions that are likely to be based on levels of technology that are achievable by the project participants.	Y
Monitoring plans ^s	The PVS requires monitoring programmes to be developed although the present specifications would not be adequate to meet the requirements of the KP verification exercise. For example, if carbon benefits are claimed for all carbon pools, then all of these must be monitored. It is not sufficient to rely on assumptions and models to predict carbon increases.	N

^s Kyoto Protocol mandatory requirements. The remaining requirements are derived from the SGS Eligibility Criteria and are considered necessary for the development and long term viability of a carbon project.

* amended / added to reflect the text of the Marrakech Accords which applies to emission reduction projects and may be applied to sequestration projects.

Annex 4: Comparison of Plan Vivo Manual to an ISO 9001:2000 short checklist

It must be stressed that this is not a formal quality management system assessment and since the PVS was not written with ISO 9001:2000 in mind, there will obviously be considerable differences between the two systems. ECCM have added further comments and clarifications to the checklist.

General requirements:	Score
<p>Quality manual: No quality manual was observed. The PVS Manual does not provide the framework upon which to build such a system. The PVS Manual provides guidance as to how to develop and implement a project that will yield a quality product, but many of the requirements of a good management system are not covered.</p>	1
<p>Control of documents: Document control information records when documents were last updated but there is no reference to issuing or approving authorities. No information on the control status was obvious e.g. is the PVS a controlled document? Presence of a register of recipients of controlled documentation was not assessed.</p> <p>There is no specification or guidance within the PVS that a document control procedure is required within the project.</p> <p>FBC Systems and Procedures include a section on document control and a list of FBC Documents.</p> <p>One Annex to the Fondo BioClimatico (Annex 11) was found to be out of date, suggesting that document control procedures were either inadequate or had not been implemented adequately. Documentation in the field was up to date but there were difficulties in introducing new documents. Due to the nature of the project the introduction of new procedures/documents can take time because of the need to consultation prior to modification and the for training afterwards.</p>	2
<p>Control of records: The PVS generates very few records and with the exception of the Technical Specification documents, there are few requirements to document progress through the PVS. There was a notable absence of records of key decisions, reviews of progress, terms of reference etc. Records of scoping visits and field trips to several potential host countries were available. The main output of the feasibility study is either a report identifying barriers to further development or a series of technical specifications to be used during the pilot phase. Thereafter records will be generated by the project as it is implemented.</p> <p>There is no specification or guidance within the PVS that a record control procedure is required within the project.</p> <p>There are few records that could be used to demonstrate that the PVS has been implemented as described until a project enters the pilot phase and an administration and trust fund has been established in the host country. For example, FBC Systems and Procedures provide for the control of members' records. These are clearly very important for demonstrating the sequestration of carbon. Individual participant's records were found to be complete and up to date but key documents were missing from the files.</p>	1

Management Responsibility	Score
<p>Within ECCM, Directorial and Managerial roles are held by Richard Tipper and Gus Hellier respectively. Both are fully aware of the objectives of the PVS and have been involved in the implementation of the PVS in several host countries where they are working to develop projects that provide carbon that meets the quality specifications. Job descriptions were not assessed.</p> <p>There is no specification of guidance as to roles and responsibilities of senior managers nor reference to management responsibility, authorities, reporting lines etc within the PVS Manual.</p> <p>Management responsibilities were not clearly established within the FBC, partly because only three individuals seemed to carry all the responsibilities.</p>	1
Customer focus	
<p>It is not entirely clear who is the customer for PVS. Three groups of stakeholders are buying into the process: The host country organisation; the farmers and rural communities; and buyers of the carbon. Clearer definition of each of these and their specific customer requirements would help to further define the product.</p>	2
Quality Policy	

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There was no evidence of a quality policy within ECCM. The PVS Manual operates under four guiding principles – Transparency, Simplicity, Flexibility and Evidence-based (demonstrability?). These principles have much in common with the guiding principles for accounting regimes for carbon inventories and may meet some of the expectations of some the customers and other stakeholders. There is no evidence of a process to improve the quality of the products (although this assessment could be seen as such).	2
Quality objectives: Quality criteria are described in various places throughout the PVS Manual. For example, participation must be voluntary, technical interventions must be economically viable and socially and environmentally beneficial. The PVS provides guidelines as to how to ensure that the participants deliver carbon that meets these requirements. Technicians are responsible for ensuring that the interventions are selected and implemented correctly. The quality objectives in the PVS Manual do reflect the guiding principles, but the guiding principles do not reflect all the quality objectives.	2
Quality Management Planning: There is no evidence that the PVS has been specifically designed to meet the quality policy and quality objectives. This would not necessarily be expected as the PVS is not a Quality Management System (QMS). There are no procedures in place to ensure that the system remains operational when changes are made.	2
Responsibility and Authority	
Responsibilities of institutions, groups, technicians etc are described within the PVS but little guidance is given as to what would be a suitable organisational structure. The FBC also entails considerable responsibilities once the pilot phase is underway and these are addressed through the FBC Systems and Procedures.	2
Management representative	
Gus Hellier is apparently responsible for the development and implementation of the PVS in new projects by ECCM. The PVS does not specify the need for a management representative within the host organisation although in practice this may be the Director or a senior manager within the host organisation. The involvement and understanding of the Management Representative in Scolel Té was found to be good.	2
Management review	
No records of management reviews were located. It would seem that the PVS has not been subjected to a review by ECCM at any stage and the success of the initiative has been judged on the projects' ability to supply carbon. The PVS Manual does not require any form of internal review. The quantity of carbon being supplied by producers can be readily assessed by the FBC through the database..	1

Provision of resources	Score
It would appear that the level of resourcing at ECCM is currently adequate for the level of activities. However, the team at ECCM is small and if the number of projects increases, the amount of international travelling could start to impact upon activities. The PVS Manual does not provide any guidance as to what level of resourcing may be required. Provision of resources for field staff in Scolel Té was sufficient for the current level of activities but as the project expands, more resources will be required.	3
Human resources – general	
As the number of projects increase, ECCM will need to recruit more staff. In this case, roles and responsibilities will need to be documented and person specifications and job descriptions will be required (these were not assessed during the site visit to ECCM). The PVS Manual does not provide any guidance as to the level of human resources that may be required.	3
Competence, training and awareness	
Competence, training and awareness of staff at ECCM was considered sufficient on the basis of experience and qualifications, however if new staff are to be employed or existing staff replaced, further training might be required.	1

The Plan Vivo System – verification status review

<p>The PVS Manual refers to training of, for example, technicians for preparing and reviewing Plan Vivos and training of community based technicians. However, there is no reference as to what constitutes adequate competence, training and awareness. Training or competence requirements for key participants such as the host organisation, persons carrying out the feasibility studies and specialists defining the technical specifications are not defined. FBC Systems and Procedures have an Annex 8 of trained staff. There were no training records for technicians within FBC.</p> <p>Infrastructure and Work Environment</p>	
<p>Facilities at both ECCM and Scolel Té appear to be adequate for the tasks required.</p>	3
<p>Planning of product realisation</p>	Score
<p>There was little evidence of planning to realise the product within ECCM. Activities appear to be managed on a project by project basis, guided by funding milestones. Under the current level of activity, this approach may be sufficient.</p> <p>The PVS Manual is a plan for creating the product. Within the PVS there are guidelines and instructions as to how to go about setting up and running a carbon sequestration project in a rural community. Criteria exist within the Manual that define the product that is to be produced. The PVS describes some of the processes needed to create the product, the monitoring requirements to demonstrate that the product has been created and the records to support the monitoring reports.</p> <p>FBC Systems and Procedures are the product of the implementation of the PVS.</p>	2
<p>Determination of the requirements related to the product: ECCM is aware that while the PVS Manual provides useful advise certain specifications, particularly those relating to the feasibility study, are not universally appropriate. In practice, the feasibility study is very different from that described in the Manual.</p> <p>The quality criteria for the carbon product at the project level have also changed. The elaboration of guidelines for CDM Eligibility have for some time indicated that issues such as national acceptability, additionality etc must be addressed within the project design, yet the PVS Manual does not address such requirements.</p>	1
<p>Review of requirements related to the product: No review has taken place at any level to date. This assessment could be seen as the first such review.</p>	1
<p>CUSTOMER COMMUNICATION</p>	
<p>ECCM should be fully aware of the purchasing customer requirements.</p> <p>The PVS Manual provides guidance as to how to ensure that the farmers' requirements are taken into consideration.</p> <p>No consideration appears to be given to the expectations of the host organisation.</p>	2
<p>Design and development review: If the PVS Manual is seen as the design and development document, then there is no evidence of an explicit review of design and development activities.</p>	1
<p>Purchasing Process</p>	
<p>Purchasing information: ECCM "purchases" input from external organisations such as the host country organisation and possibly consultants or advisers. There is no evidence of Terms of Reference or other documentation specifying what the service provider is expected to deliver. There appears to be no formal assessment of a supplier's ability to provide the service specified. However, Terms of Reference were prepared for this assessment and the contract was awarded on the basis of a competitive tender.</p> <p>The PVS Manual does not provide any guidance on purchasing procedures.</p>	1
<p>Verification of purchased product: There appear to be no mechanisms to review the information that is provided by "suppliers". For example, the output of the feasibility study will determine whether or not a project proceeds; the technical specifications will determine how successful a project may be. Technical information is reviewed by ECCM but has not been formally documented. There appear to be no checks in place that ensure the quality of the information is adequate to justify the decisions for which it is used.</p>	1
<p>Identification and traceability of product</p>	
<p>The PVS Manual describes how FBC must be operated and monitoring utilised to ensure that products are traceable.</p>	3

Annex 5: Specific comments on FBC technical specifications

ECCM has added further comments and clarifications to SGS comments.

AF-CERVI-SUBT1: Conditions for *Juniperus lucitanica* are not described. Is this a suitable species for live fencing? The rainfall for optimal growth of site productivity is listed as 1000 – 2000 mm/yr whilst *Pinus oocarpa* is reported to grow best with 1000 – 1500 mm/yr. All yields and benefits are based on the assumption that plots are of 1 ha in size and square. Is this realistic? If the plot size is smaller then carbon benefits are underestimated, but impact on the crop will also be underestimated. No guidance on how to minimise impacts on crop is given, nor what those impacts might be. The calculation of the baseline and with project carbon storage is NOT transparent. Although the technical specifications gave references for all carbon figures used the information in these references was not sufficiently detailed to create adequate transparency. The reference De Jong et al, 1998 does not give details of parameters used. The contribution of the relative components of biomass, necromass, wood products, soil carbon etc is not shown. Outputs of models used should be included in an annex to the specifications and the source of all parameters used in the model should be stated. It is not clear what assumptions are required to make this system economically viable. The analyses do not present form of analysis such as internal rate of return or net present value. How does site productivity affect economic viability? What is the justification for choosing a time horizon of 150 years? Carbon sequestration should be based on the number of trees planted or length of boundary, not area of plot.

FOR-ACME-SUBT1: This intervention is designed for areas that are periodically cleared for crops or used for grazing and fuelwood collection. The Specification does NOT address the issue of activity shifting and how farmers replace the loss of access to periodic crop cultivation or grazing, although this is addressed to some extent in the FBC evaluation form in the (annex 6). Site productivity is based on maize yields but the lands may only be used for grazing or fuelwood collection so how is site productivity assessed? Planting density of 7*2 or 7*3 is different from the specifications in De Jong, 1998 where planting is 5*2. Maintenance is expected to be continued until canopy closure. Is this realistic in at this spacing and in pine / oak forests? What additional information is under development? Is this relevant to the decision to use this specification and if so, it should be made available before implementation.

AF-CAFÉ-TROP1: *Cordia alliodora* is not mentioned in the specification. Economic viability is unclear; impact of the shade on coffee yield and how to minimise that impact is not discussed.

FOR-REST-SUBT1: No allowance is made for the costs of firebreaks (unless this is included in maintenance costs).