Final Plan Vivo Validation Report:

Trees of Hope Project
Clinton Development Initiative



Ezra C. Neale
April 29, 2011

Contents

Final Plan Vivo Validation Report: Trees of Hope Project

Name of Reviewer: Ezra C. Neale
Date of Review: February 09, 2010 – February 15, 2010
Project Name: Trees of Hope project
Location: Dowa and Keno Districts, Malawi

Project Description
The Trees of Hope project supports small-scale farmers in the mitigation of greenhouse gas (GHG) emissions through afforestation/reforestation (A/R) activities in the Dowa and Keno Districts in Central and Southern Malawi. The project is being undertaken by the Clinton Hunter Development Initiative (CHDI). CHDI provides farmers with training and capacity building to facilitate tree planting activities that contribute to increased carbon sequestration in biomass as well as economic and social co-benefits for local producers. The land-use systems used are boundary planting, dispersed interplanting, mango and citrus fruit orchards and woodlots. CHDI is now working with over 1,200 producers (individuals and communities) and continues to register new participants on a regular basis. These producers collectively manage over 800,000 trees. Additional accomplishments include the creation of two nurseries which grow trees for local producers.

Scope of Validation
CHDI seeks to register this project with the Plan Vivo Foundation in order to begin selling Verified Emission Credits (VERs) and accessing carbon finance. The aim of the validation effort is to verify that the project documents accurately represent field conditions and ensure that the project is adequately addressing the requirements outlined in the Plan Vivo Standards. An independent expert, Ezra C. Neale, completed a Plan Vivo validation of the CHDI, Trees of Hope project. The validation consisted of a desk review of relevant documents and a field visit to Malawi where projects activities are being implemented. The desk review was completed between February 1, 2008 and February 8,' 2010 and the field visit was completed between February 9, 2010 and February 15, 2010.

Validation Opinion
The evidence presented in project documents and during the field visit indicates that CHDI has the capacity to plan, develop, and manage the Trees of Hope project. Based on the responses provided by CHDI on February, 2011 (Appendix II) the three (3) minor corrective actions identified in the Draft Validation Report have been addressed. If there are any further questions, please contact Ezra Neale at ezra.neale@gmail.com.

Table 1. Summary of major and minor Corrective Actions

Theme	Major CARs	Minor CARs	Observations
Governance	0	0	See recommendations
Carbon	0	0	See recommendations
Ecosystem	0	0	See recommendations
Livelihoods	0	0	See recommendations

List of Documents Reviewed

Baseline Study:

1. Assessment of Net Carbon Benefits for CHDI Malawi Land Use Activities
   Author: Emmanuel Ekakoro
   Consultancy: Energy for Sustainable Development (ESD)

Technical Specifications:

1. Woodlot Technical Specification
2. Dispersed Systematic Inter-planting Technical Specification
3. Boundary Planting Technical Specification
4. Citrus Orchard Technical Specification
5. Mango Orchard Technical Specification
   Author: ESD

Producer Agreement Template:

1. Trees of Hope Plan Vivo Agreement

Project Design Document:

1. Plan Vivo Project Design Document, Trees of Hope Project

Project Idea Note:

2. Plan Vivo Project Idea Note, Trees of Hope Project

Articles of Association:

1. Memorandum of Understanding between the Government of the Republic of Malawi and the Clinton Foundation
2. William J. Clinton Foundation Certificate of Membership for the Council for Non-Governmental Organizations of Malawi

Financial Reports:

1. Clinton Foundation independent accountant reports from 2005 -2008

Description of Field Visit

Meeting with CHDI Project Team

On Tuesday, February 9, 2010 the project team met with the validation expert at the regional headquarters in Lilongwe, Malawi. This day was used to clear up questions that arose during the desk review, review the database, and collect additional information required for the validation work.

Producer Site Visits

The Trees of Hope project operates over a broad geographic area that encompasses the Dowa and Neno Districts located in Central and Southern of Malawi. Project activities are further partitioned in the Neno District project into the Lower Neno District and the Upper Neno District. In order to cover each of these distinct geographic areas, four (4) producer site visits were completed in the Dowa District, two (2) producer site visits were completed in the Lower Neno District and two (2) producer site visits were completed in the Upper Neno District. Table 2 bellow details the producer site visits completed during the validation exercise. The site visits consisted of meeting the producer at the Plan Vivo site and asking a series of semi-structure questions. The questions were aimed at gauging the producer's understanding of the Plan Vivo project, the technical specifications, and his/her knowledge of the management and monitoring responsibilities.

Table 2. List of producer site visits completed during the Trees of Hope Plan Vivo validation exercise

Site Visit	Site Visit Date	Region	Landowner	Land Use System	Plan Vivo Area (ha)

1	10/02/2010	Dowa District	Gabina Gozende	Woodlot	1
2	10/02/2010	Dowa District	Fraswell Malaitcha	Woodlot	1
3	10/02/2010	Dowa District	Solomon Phiri	Boundary Planting	1.5
4	10/02/2010	Dowa District	Kingston Chatanga	Woodlot	2.5
5	11/02/2010	Lower Neno District	Madisoni Malirana	Woodlot	0.6
6	11/02/2010	Lower Neno District	John Moffat	Woodlot	1.2
7	12/02/2010	Upper Neno District	Hunter Kaynenga	Woodlot	1
8	12/02/2010	Upper Neno District	Titus Edwin Ntata	Citrus Orchard	0.6

Local Program Monitors
The Trees of Hope project relies on teams of volunteer Local Program Monitors (LPMs) stationed at each area where the program is operating (Dowa, Lower Neno, and Upper Neno Districts). LPMs promote the program and provide support and technical assistance to producers involved in the project. Group meetings were held with each of the three LPM groups on February 10, 11, and 12, 2010. At each meeting semi-structured interview questions were asked to assess the type of training received, the participation process utilized, and current roles and responsibilities of the LPMs. See Appendix I for sign-in sheets for these meetings.

Close-out meeting with CHDI staff
On February 13, 2010 a wrap-up meeting was held with the Project Manager and Project Associate to discuss the findings from the validation exercise. The validation exercise was discussed and any questions about the validation findings were examined in more detail.

Report Findings

Theme	**1. Effective and Transparent Project Governance**
Requirement	1.1 Administrative capabilities 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: 1.1.1 A legal entity (project coordinator) able to enter into sale agreements with multiple producers or producer groups for carbon services; 1.1.2 Standard sale agreement templates for the provision of carbon services; 1.1.3 Transparent and audited financial accounts able to the secure receipt, holding and disbursement of payments to producers; 1.1.4 All necessary legal permissions to carry out the intended activities; 1.1.5 Mechanisms for participants to discuss issues associated with the design and running of the project.
Findings	The review indicates that institutional arrangements and legal agreements are in place and CHDI has the capacity to manage the fiscal and programmatic elements of a Plan Vivo program. However, CHDI has not completed a final Project Design Document. Prior to registration this document should be completed and approved by the Plan Vivo Foundation. The project is managed and coordinated by CHDI based in Lilongwe, Malawi with administrative support provided by the Clinton Foundation based in the United States. A review of the Memorandum of Understanding between the

	Government of the Republic of Malawi and the Clinton Foundation and the Certificate of Membership for the Council for Non-Governmental Organizations of Malawi provide sufficient evidence that CHDI is a legal registered entity in Malawi and has the legal right to carry out the technical assistance and tree planting activities that are part of the Trees of Hope project. In 2008 the Clinton Foundation was operating in more than forty countries on six continents and all fifty states and its total assets were valued at $276,836,097. A review of independent accountant reports from 2005 -2008 indicates that the financial statements present fairly in all material respects the financial positions of the Clinton Foundation and the financial statements conform with accounting principles generally accepted in the United States of America. CHDI finances are managed through the Clinton Foundation headquarters with assistance from an accounting expert in the CHDI office in Malawi. Based on this evidence it is the opinion of the reviewer that that CHDI has the capacity to manage large quantities of funds from diverse public and private sources and to disburse and track carbon finance. The sales agreement template clearly lays out management, monitoring, and reporting responsibilities for the producer. The template provides a matrix for linking carbon payments to monitoring indicators articulating the amount of carbon finance that will be available to a producer. The agreement also includes a 20% risk buffer requirement for each producer. CHDI has done an excellent job building capacity with local technicians and creating a network of LPMs. The LPMs act as a representative group for producers involved in the program. Concerns and issues that arise can be vetted to the LPMs. If issues need higher level attention they can be brought to the table during regularly scheduled LPM meetings and discussed with technicians and administrative staff based in Lilongwe. These meetings and the regular presence of the local technicians provide an excellent medium for resolving project related issues.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	**Minor CAR:** 1. Finalize Trees of Hope PDD with all relevant statutes, articles and agreements and have approved by the Plan Vivo Foundation.		
	CHDI Response to CAR: Comments on the original PDD were provided to the project developer by a number of parties including this validator and the Plan Vivo Foundation. Additionally much of its content underwent extensive technical review by the Plan Vivo Foundation TAC. Since this time CHDI has made considerable alternations to the PDD with the assistance provided by Total Land Care (TLC) and has produced a new version with associated technical specifications and carbon modelling report that was approved by the Plan Vivo Foundation September 2011.		

Requirement	**1.2 Technical capabilities** 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.		
Findings	CHDI has the capacity to provide technical assistance to producers and overall technical support needed to implement the Trees of Hope project. The Trees of Hope project is being managed out of the Lilongwe headquarters of CHDI. Overall Administrative oversight is provided by Walker Morris, Country Executive. The administrative team consists of Commodious Nyirenda, Program Manager and a Project Associate. Field activities are managed by six field technicians; two each based in the Dowa, Lower Neno, and Upper Neno Districts. Field technicians oversee a group of volunteer Local Program Monitors (LPM) at each of these sites. The administrative team demonstrated knowledge of agroforestry and land management techniques as well as a competency administering the technical assistance activities occurring at the field sites. The field technicians had substantial technical knowledge in the areas of agriculture and forestry and the capability to work with local producers/farmers. LPMs exhibited a strong understanding of their role in the program and it was evident that they had gained a great deal from the training they received. They appeared to be capable of providing technical advice needed to establish and manage land-use systems with producers, identifying corrective actions to resolve technical issues at producer sites, and managing conflict or misunderstandings within producers groups. CHDI has done an excellent job putting in place a management structure and involving new producers but has not yet begun to enter into landowner agreements with producers. At this juncture it is critical to tighten the transfer of producer data to LPMs, field technicians and central administrative staff. Producer data should be collected in a systematic manner over regular time intervals and stored in a central location (the project database). At any given moment accurate data regarding the names and locations of producers, type of land use system, area planted, monitoring results, and payment data should be available. As CHDI transitions into the contracting and payment phase, it is recommended that they begin with a small pool of producers and tighten all management systems prior to scaling-up to the larger group.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	1. Strengthen information dissemination processes between LPMs, field technicians and central administrative staff to ensure all necessary data is available and stored accurately in the central database. 2. Select a small pool of producers and tighten all management systems prior to scaling up to the larger group.		

	3. Slow recruitment of new producers and divert attention to the testing and verification of producer contracting, monitoring, and management procedures.
	CHDI Response to Recommendations: 1. A system is already in place that allows participatory work planning, identification of information to be collected, designing of information collection tools, setting up of forums (*two meetings per month*) for dissemination of such information from LPMs through field technicians to the central database. 2. The internal producer screening exercise is underway to ascertain the current number of committed producers within the project, re-quantify not only the carbon credits but also the demand for trees to satisfy their existing plan vivos. This internal demand will be the focus in the short term before enrolling new farmers. (*See appendix 1. for the form used in the screening exercise*)
Requirement	**1.3 Social capabilities** 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 1.3.2. Able to establish land-tenure rights through engaging with producers and other relevant organisations 1.3.3. Able to consult producers effectively on a sustained basis
Findings	CHDI has successfully carried out a community engagement process and identified and developed long-term relationships with over 1,200 producers. Based on the evidence from the producer site visits and the LPM meetings, CHDI has an aptitude for site selection and technical training. All of the target groups are small holder farmers or groups of farmers that will benefit from A/R activities. Producers are voluntary project participants that are supportive of the project. Producers are also knowledgeable about the purpose and goals of the program and are able to discuss technical specifications, land use systems, and required management activities. The producers visited during the validation exercise provided documentation regarding land ownership as defined by the legal system in Malawi. For villagers this system is based on customary rights recognized by Malawian law. Most landowners receive land ownership rights through inheritance or by permission granted by traditional chiefs and village headmen. CHDI collects signatures from the these officials on all Plan Vivos to document that producers have appropriate permissions to cultivate and dispose of land within the limits of the customary law of the tribe or clan. This system of LPMs and field technicians allows CHDI to provide regular and sustained trainings and personalized consultations to producers. Both the field

	technicians as well as the LPMs demonstrated technical competencies in agriculture and forestry techniques and the capability to engage local producers.		
Conformance	Yes [x]	No [ ]	N/A [ ]
CAR/REC	Recommendations: 1. Continue to build capacity of LPMs through on-going trainings. 2. Develop a monitoring system to verify that the services being provided by LPMs are of high quality. 3. Devise an evaluation system to better assess the knowledge and competency of LPMs and the impact of training activities.		
	CHDI Response to Recommendations: 1. Capacity building of LPMs and producers is the main focus of the project currently and in the short and long term and features predominantly in the project's work plans and accounts for a bigger portion of the project's budget. To ensure that trainings that have taken place are well appraised, special forms have been designed to capture any training/meeting conducted at all levels (*see appendix 2*) 2. The mechanism is in place that involves the formulation of monthly activities for the LPMs assisted by field technicians through a planning meeting at the beginning of a month where indicators of success are also set. These indicators are monitored through the month and another meeting is set at the end of the month to assess performance. Their weekly progress of activities feed into a weekly report compiled by the Program Manager where quality is re-checked.		
Requirement	**1.4 Reporting** Projects must on an annual basis, according to the reporting schedule agreed with the Plan Vivo Foundation: 1.4.1 Accurately report progress, achievements and problems experienced; 1.4.2 Transparently report sales figures and demonstrate resource allocation in the interest of target groups.		
Findings	At the time of the validation, CHDI had not yet entered into agreements with producers, completed any VER sales, or had any evidence of reporting. They did, however, demonstrate their capacity to develop and manage complex fiscal and programmatic reporting requirements as well as the infrastructure (sales agreement and database) required to track Plan Vivo activities. Based on this evidence, it is conclusive that they are capable of maintaining accurate and transparent reporting procedures and producing and submitting annual reports to the Plan Vivo Foundation based on an agreed upon schedule.		

CAR/REC	Recommendation: 1. Establish reporting schedule and implement data management protocol to ensure Quality Assurance/Quality Control for reporting activities.		
	CHDI Response to Recommendation: 1. Though neither sale agreements with producers have been entered into nor completed any VER sales, the ground is already set with the existence of the sales agreement template and a functioning database to warrant effective data management and reporting according to a yet-to-be-agreed-upon schedule with the plan vivo foundation.		
Conformance	Yes [x]	No [ ]	N/A [ ]

Theme	**2. Carbon Benefits**
Requirement	**2.1. Accounting methodology** Carbon benefits are calculated using **recognised carbon accounting methodologies** and conservative estimates of carbon uptake/storage that take into account risks of leakage and reversibility.
Findings	The carbon accounting methodology used to assess the potential carbon sequestration by the four land use systems is recognized as a credible in the industry and has been used in other registered Plan Vivo projects. The methods are described in more detail by Berry (2008). The methodology relied on field measurements of trees of a known age to determine annual (stem) volume increments (m3/yr). The methodology was sound but limited the number of trees in the technical specification due to the availability of field data. Also the number and type of trees included in the technical specifications do not match those presented in the carbon modeling document and one tree species planted at a producer site was not included in technical specifications. The accounting methodology accounted for leakage that may occur as a result of tree harvesting for construction poles, firewood needs, and charcoal production (displaced activities). Please note, under CDM protocols it is credible to assume no leakage for small scale A/R activities. The potential for leakage will be addressed by the following management measures: 1. All farmers should be assessed individually to demonstrate that they retain sufficient land to provide food for themselves and their families. 2. Signatories to Plan Vivo activities will be contractually obliged not to displace their activities as a result of the tree planting. 3. A plan to monitor leakage on specific other woodland areas to ensure leakage is not occurring.

	4. Formation of community based 'policing' to ensure that leakage resulting from displaced activities does not occur.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	Minor Corrective Action: 1. Ensure that all tree species that appear in the technical specifications and in the field are accurately modeled. 2. Expand the number of trees in the technical specification so that minimum of around 100 trees per species should be measured with a minimum of 10 trees in each 5 cm size class (i.e. 5-10cm, 10-15cm, 15-20cm, etc.).(Berry 2008).		
	CHDI received a number of similar comments during peer review and with the help of TLC have updated and strengthened their technical specifications. Based on a review of the technical specification documents, all tree species used in the current land-use systems have been included in the technical specifications and have all been modelled for their carbon sequestration potentials.		
Requirement	**2.2. Baseline** Carbon benefits are measured against a clear and credible **carbon baseline**.		
Findings	The methodologies for developing a baseline are clear and credible and sufficient for afforestation/reforestation projects as outlined under CDM protocols. The assumed static baseline is sufficient as long as projects are not developed in areas considered forest for Malawi under CDM rules. The sampling methodologies were clearly described and amount of data collected was sufficient to characterize the static baseline. The model, CO2FIX-V3 (Mohren et al 2004), used to calculate carbon storage is recognized within the industry and used to calculate carbon storage in other registered Plan Vivo projects. All of the parameters used (e.g. basic wood carbon content; timber production; total tree increment relative to timber production, product allocation for thinnings, expected lifetime of products etc.) for each land-use system were reasonable and/or conservative estimates.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	None		

Requirement	**2.3. Additionality** Carbon benefits are **additional**, 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: 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 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.		
Findings	The Plan Vivo activities are additional and meet all of the requirements listed above. No legislative decrees or economically viable land initiatives are involved in this program. All activities are funded by public dollars and private charitable contributions. Without the technical training and capacity building efforts, producers in the Neno and Dowa districts lack the knowledge and financial capacity to implement the agroforestry and tree planting activities. Carbon finance will help CHDI expand its efforts to include additional landowners, systematize agroforestry implementation methodologies, and achieve social, economic, and climate change benefits that would not be possible in the absence of project activities.		
Conformance	Yes [x]	No [ ]	N/A [ ]
CAR/REC	None		
Requirement	**2.4. Permanence** 2.4.1. 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. 2.4.2. 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. 2.4.3. 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.		

Findings	The PDD and the technical specifications clearly identify permanence issues that may arise from natural or man induced disasters such as forest fires, pests and diseases, and livestock damage. A list of management measures is summarized in the Final Trees of Hope PDD. Although these management measures meet the requirements of the Plan Vivo Standard it is recommended that they be developed into field documents so that they can be used to guide land management activities and further reduce the risk of permanence. At the time of this review, CHDI had not yet entered into sales agreements with producers. They do have a land-owner agreement template that will be used once the program has been registered with the Plan Vivo Foundation. The landowner agreement clearly outlines management and monitoring procedures and provides monitoring targets that producers must meet to be eligible for carbon payments. Monitoring targets include the survivorship of individual trees as well as the growth rates measured in dbh. When monitoring targets are not met, farmers will be directed to implement corrective measures (e.g. tree planting) until monitoring targets are achieved. Payments will be withheld until monitoring targets are met. Based on the discussions and field visits with producers they are knowledgeable about these requirements and their tree planting activities mirror the planting prescriptions. The PDD, technical specifications, and the landowner agreement indicate that producers will contribute 20% of the carbon finance generated by land use activities to a risk buffer. The 20% risk buffer far exceeds the 10% Plan Vivo requirement.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	Recommendations: 1. Further develop management measures and create field guidance materials so that they can be used guide land management activities and further reduce the risk of permanence. 2. Clearly articulate and provide examples of how the risk buffer will be used to compensate for forest cover lost as a result of unpredictable events.		
	CHDI Response to Recommendations: 1. Most risks to permanence have been identified and management measures for each one of them have been outlined in the PDD. The risk management activities are fed into the project's work plans and all players including the farmers are aware of them. Forms have been developed to assist LPMs to track permanence on all farmers' plan vivos in keeping with the monitoring protocol (*see annexes 1 and 2 to each of the technical specifications*) and attached to this document. 2. The project risk buffer is set at 20% which adequately covers the perceived level of risk within the project. This level will be monitored annually with the view of revision depending on the general performance of all the plan vivos in the project but individual assessments will also be made to reward producers who significantly and consistently keep the		

	risk as low as possible by revising their risk buffer downwards. A decision might be taken in due course regarding when the accrued risk buffer could be offered for sale.		
Requirement	**2.5 Leakage** Potential sources of **leakage** have been identified and effective mitigation measures implemented.		
Findings	Each of the technical specifications considers the displacement of activities and plans to minimise the risk of negative leakage through the following management measures: 1. Formation of community based 'policing' to ensure that leakage resulting from displaced activities does not occur. 2. All farmers should be assessed individually to demonstrate that they retain sufficient land to provide food for themselves and their families. 3. Signatories to Plan Vivo activities will be contractually obliged not to displace their activities as a result of the tree planting. 4. A plan to monitor leakage on specific other woodland areas to ensure leakage is not occurring.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	None		
Requirement	**2.6. Traceability and double-counting** Carbon sales are **traceable** and recorded in a database.		
Findings	A Plan Vivo Access database was developed by Energy for Sustainable Development (ESD) to track, store, and manage carbon sales. The database can adequately manage data related to monitoring, management, and carbon sales. It should be noted that at the time of the field evaluation the database was not yet in use. As data is incorporated into the database, CHDI should closely monitor database functionalities to ensure that it performs as anticipated. It is recommended to establish a coherent and thorough data management protocol. This protocol will help ensure that all of the monitoring data collected from the field is stored in hard and electronic copy and data entered into the database is cross checked by at least two people to ensure data Quality Assurance and Quality Control.		
Conformance	Yes [X]	No [ ]	N/A [ ]

CAR/REC	Recommendations: 1. Closely monitor database functionalities to ensure that it performs as anticipated. 2. Establish a coherent and thorough data management protocol for storing field data and entering information related to carbon sales.
	CHDI Response to Recommendations: 1. So far pilot data is being entered into the database which has not yet posted serious technical problems and the project feels the database is robust enough to take care of all of the project's data needs. Nevertheless, in the event that technical hiccups arise requiring advice, we will timely seek it from the Plan Vivo Foundation. 2. All important data is stored in hard copy form at three levels: the LPM keeps a copy as does the field technicians and the program Manager at the head office where soft copies are also kept in the database and other supporting program files. As such there is enough back up in case a copy goes missing.
Requirement	**2.7. Monitoring** Project has an effective process for **monitoring** 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.
Findings	The technical specifications outline a clear and comprehensible approach to monitoring that includes specific targets and corrective measures. Monitoring targets include the percentage survival of individual trees as well as the growth rates measured in dbh. In the case that tree survival does not meet the targets outlined in the technical specification, farmers will be directed to implement corrective measures (e.g. replanting trees) until monitoring targets are met. Payments will be withheld until monitoring targets are met. At the time of validation, CHDI had not undergone any monitoring activities and there was no monitoring evidence available. Most of the producers interviewed had some sense of the purpose of monitoring but few of them knew what or how they would carry out the monitoring activities. Prior to entering into agreements with producers, CHDI must ensure that all producers receive adequate monitoring training and have the competency to draw the connection between monitoring results and carbon payments.

Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	Recommendation: 1. Ensure that all producers receive adequate monitoring training and have the competency to draw the connection between monitoring results and carbon payments prior to entering into agreements with producers.		
	CHDI Response to Recommendation: 1. Producers constantly undergo capacity-building training on various project aspects including the crucial component of monitoring and the corresponding aspect of payment of carbon finance. The producers will continue being trained to enhance their understanding of the sale agreement, the monitoring and payment protocol (see annex 2 of PDD and annex 4 of this document) and more importantly the monitoring targets that determine the producers eligibility for carbon finance payment. A special monitoring field data collection form has been designed (*see annexes 1 and 2 to each technical specification and annex 3a and 3b of this document*).		
Requirement	**2.8. Plan Vivos** Producers **draw up Plan Vivos** as part of a participatory process that ensures proposed land-use activities: — Are clear, appropriate and consistent with approved technical specifications for the project; — Will not cause producers' overall agricultural production or revenue potential to become unsustainable or unviable.		
Findings	Plan Vivos were drawn up as part of a participatory process and on site consultations with field technicians. Sample Plan Vivos are clear, easy to understand, and consistent with project technical specifications. At the time of the validation exercise, not all producers had Plan Vivos. Prior to entering into land-owner agreements all producers must have a Plan Vivo in place. Also, in some cases, producers as well as LPMs had a difficult time articulating the purpose of a Plan Vivo. It is recommended that the purpose and utility of Plan Vivos be emphasized in upcoming training activities. At each of the eight producer sites, tree planting activities are situated on land set aside from primary food and cash crop production. The producers indicated that they are able to manage the responsibilities of both systems and that the land-use systems are not having negative impacts on local livelihoods.		
Conformance	Yes [X]	No [ ]	N/A [ ]

CAR/REC	Recommendation: 1. Ensure that all producers have Plan Vivos in place prior to entering into landowner agreements. 2. Emphasize the purpose and utility of Plan Vivos in upcoming training activities.
	CHDI Response to Recommendations: All producers in the project have plan vivos drawn but following the just-completed producer screening exercise mentioned on CAR number 3 above, all plan vivos are being re-examined to reflect the current ground realities ahead of entering into sale agreements. Most efforts in the project are currently being directed towards general capacity building (technical, institutional, social) and plan vivos is one of the key components that will be stressed repeatedly. It is one of the most important modules since plan vivos form the building blocks of the project. Any training done within the project is appraised and recorded on specially designed forms (see annex 2 of this document) and training on plan vivos will be similarly and closely followed.

Theme	**3. Ecosystem Benefits**		
Requirement	**3.1. Planting native and naturalised species** **3.1.1.** Planting activities are restricted to **native and naturalised species**. **3.1.2.** Naturalised (i.e. non-invasive) species are eligible only where they can be shown to have compelling livelihood benefits and: — Producers have clearly expressed a wish to use this species; — The areas involve are not in immediate proximity to conservation areas or likely to have any significant negative effect on biodiversity; — 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; — The activity will have no harmful effects on the water-table.		
Findings	The technical specifications used use only native and naturalized species and project activities are in conformance with the requirements listed above.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	None		
Requirement	**3.2. Ecological impacts**		

	Wider **ecological impacts** have been identified and considered expressly including impacts on local and regional biodiversity and impacts on watersheds.		
Findings	Wider ecological impacts have been generally considered in the project documents; see Table 8, page 32 of the Draft PDD. At most sites tree planting activities are expected to have a positive impact on biodiversity and watershed processes due to increased forest cover. At a few sites, tree planting activities had occurred on ridge tops and steep slopes without any erosion control measures. Under heavy rains these conditions will result in substantial loss of top soil and increased sedimentation in local waterways. It is recommended that landowners be provided with guidance on low-cost erosion control measures such as mulching to avoid unnecessary watershed impacts.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	Recommendation: 1. Provide landowners with guidance on low-cost erosion control measures such as mulching to avoid unnecessary watershed impacts.		
	CHDI Response to Recommendation: 1. In addition to mainstream silvicultural and project management trainings being offered to producers, guidance will also be provided in low-cost soil and water conservation practices. These will include plant residue retention in situ and establishment of vetiver grass (*Vetiveria zizanioides*) hedges on steep slopes to check runoff velocity and encourage infiltration.		

Theme	**4. Livelihood Benefits**		
Requirement	**3.3. Community-led planning** Project has undergone a **producer/community-led planning process** aimed at identifying and defining sustainable land-use activities that serve the community's needs and priorities.		
Findings	CHDI has actively engaged producer and the local community in project planning and identifying land-use activities that serve the community's needs. When the project began CHDI underwent a broad sensitization effort to explain the goals and purpose of the program in the Dowa and Neno Districts. Participants are selected based on their interest and commitment to the long-term management of project activities. LPMs now provide a continuous presence in the local communities and actively recruit new participants. The selection of land-use systems was completed in direct consultation with local communities.		
Conformance	Yes [X]	No [ ]	N/A [ ]

CAR/REC	None		
Requirement	**3.4. Continued participation and training** Mechanisms are in place for **continued training** of producers and participation by producers in project development.		
Findings	CHDI has an excellent system in place to provide continued training and ensure participation by producers in project development. Field technicians and LPMs regularly engage producers in one-on-one consultations to assist them in the establishment and management of land-use systems. Field technicians provide continued technical training activities with participants to ensure that they are gaining knowledge of silvicultural and land management techniques.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	None		
Requirement	**3.5. Sale agreements** Project has procedures for entering into **sale agreements** with producers based on saleable carbon from Plan Vivos, where: 3.5.1. Producers have recognised carbon ownership via tenure or land-use rights; 3.5.2. Agreements specify quantity, price, buyer, payment conditions, risk buffer, and monitoring milestones; 3.5.3. An equitable system is in place to determine the share of the total price which is allocated to the producer; 3.5.4. Producers enter into sale agreements voluntarily.		
Findings	The producers visited during the validation exercise were able to provide documentation regarding land ownership as defined by the legal system in Malawi. For villagers this system is based on customary rights recognized by Malawian law. Most landowners received land ownership rights through inheritance or by permission granted by traditional chiefs and village headmen. CHDI collects signatures from these officials on all Plan Vivos to document that producers have acquired appropriate permissions to cultivate and dispose of land within the limits of the customary law of the tribe or clan. At the time of this review, CHDI had not yet entered into sales agreements with producers. They do have a land-owner agreement template that will be used once the program has been registered with the Plan Vivo Foundation. The land-owner agreement clearly outlines management and monitoring procedures and provides monitoring targets that producers must meet to be eligible for carbon payments. Monitoring targets include the survivorship of individual trees as well as the growth rates measured in dbh. When monitoring targets are not met, farmers will be directed to implement corrective measures (e.g. tree planting) until monitoring targets are achieved. Payments will be withheld until monitoring		

	targets are met. Based on the discussions and field visits with producers they are knowledgeable about these requirements and their tree planting activities mirror the planting prescriptions. The template provides a matrix for calculating the carbon benefit for each producer as well as a requirement for a 20% producer contribution to a Risk Buffer fund. All landowner agreement will be entered into on a voluntary basis. The PDD indicates that 40% of carbon finance will be used for central program operations and administration, 55% for farmer payments, and 5% will support the farmer-owned monitoring mechanism. Since CHDI has not yet entered into landowner agreements with producers it has not discussed the share of carbon finance that will be available to them. It is recommended that a participatory process be carried out with all producers to reach a decision on the payment scheme.		
Conformance	Yes [x]	No [ ]	N/A [ ]
CAR/REC	Minor Corrective Actions: 1. Carry out a participatory process with producers to reach a decision on the carbon payment scheme. 2. Update the sales agreement to include the agreed upon financial structure as well as the price of carbon that will be paid to the producer.		
	CHDI Response to CAR: 1. Much as the producers are aware that carbon finance that might be realized will support different roles in the entire management process including their payments in varying proportions. Efforts have been taken during participatory meetings to present and collect comments on the proposed payment scheme as indicated in the PDD. The payment scheme is now agreed upon by producers enrolled in the project. 2. Following the consultative process with producers on the proposed financial structure, the agreed upon sales agreement was recorded in the PDD. CHDI does however leave room to adjust to the financial structure depending on context specific circumstances. If a change is required a consultative and inclusive process will always be used to make amendment to the sales agreement and the price of carbon secured with a buyer will be timely and transparently communicated to the producers.		
Requirement	**3.6. Payments to producers** Project has an effective and transparent process for the timely administration and recording of **payments to producers**, where: 3.6.1. Payments are delivered in full when monitoring is successfully completed against targets in sale agreements; 3.6.2. Payments are recorded in the project database to ensure traceability of sales.		

Findings	At the time of the validation CHDI had not yet entered into agreements with producers, completed any VER sales, or had any evidence of reporting. They did however demonstrate their capacity to develop and manage complex fiscal and programmatic reporting requirements as well as the infrastructure (sales agreements and database) required to track Plan Vivo activities and producer payments. Based on this evidence, it is conclusive that they are capable of collecting and storing monitoring information and delivering payments based on this information.		
Conformance	Yes [X]	No [ ]	N/A [ ]
CAR/REC	Recommendation: 1. Establish monitoring reporting plan with producers and data management protocol for storing data and dispersing payments.		
	CHDI Response to CAR: The producers continue being trained to increase their understanding of the existing monitoring and payment protocol, the monitoring data that will be collected and use of the field monitoring data collection form and more importantly the determining factor for eligibility for carbon finance at a particular monitoring period.		

References

Berry, N (2008). Carbon modelling for reforestation and afforestation projects. Unpublished but available at ECCM (part of the Camco Group), UK.

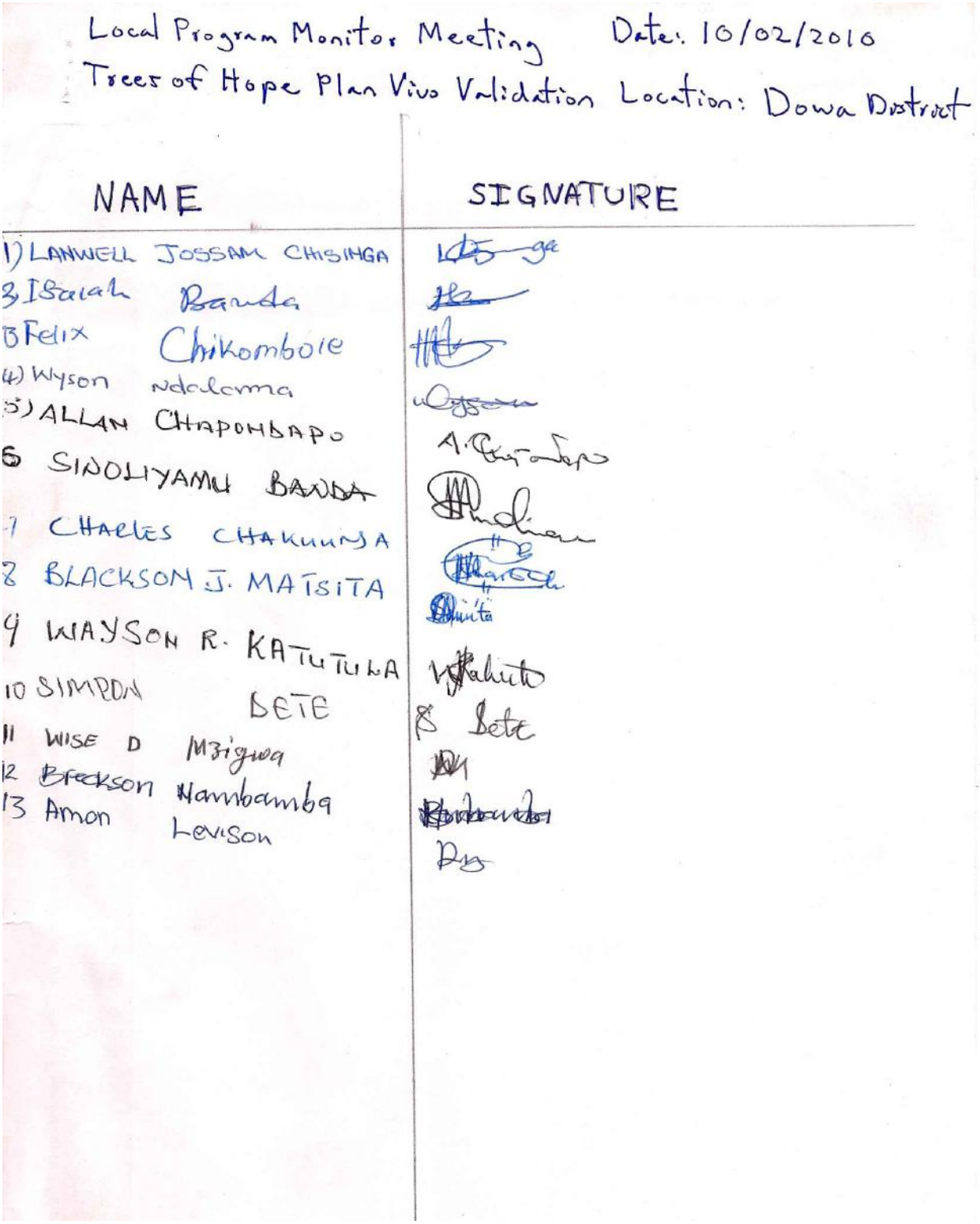
Berry, N (2008). Estimating growth characteristics of agroforestry trees. Unpublished but available at ECCM (part of the Camco Group), UK.

Berry, N (2008). Protocol baseline survey for agroforestry projects. Unpublished but available at ECCM (part of the Camco Group), UK.

Mohren, F., van Esch, P., Vodde, F., Knippers, T., Schelhaas, M., Nabuurs, G., Masera, O., de Jong, B., Pedroni, L., Vallejo, A.., Kanninen, M., Lindner, M., Karjalainen, T., Liski, J., Vilen, T., Palosuo, T. (2004). CO2FIX-V3

Appendices

Appendix I – Sign-in sheets for participants of Local Program Monitor meetings held on February 10, 11, and 12 in the Dowa and Neno Districts, Malawi.



Local Program Monitor Meeting Date: 10/02/2010
Trees of Hope Plan Vivo Validation Location: Dowa District

NAME	SIGNATURE
1) LANWELL JOSSAM CHISINGA	
2) Isaiah Banda	
3) Felix Chikomboie	
4) Wyson ndalama	
5) ALLAN CHAPOMBAPO	
6 SIBOLIYAMU BANDA	
7 CHARLES CHAKHUMSA	
8 BLACKSON J. MATSITA	
9 WAYSON R. KATUTULA	
10 SIMPSON DETE	
11 WISE D Mzigwa	
12 Brekson Nambamba	
13 Amon Levison	

Trees of Hope Plan Vivo Validation Date: 11/02/2010
Local Program Monitor Meeting Location: Lower Neno

	NAME	SIGNATURE
1.	HENRY MALIKI	
2.	INESS SOSOLA	
3.	VICTOR MKAKA	
4	RICHARD STEPHANO	
5	DUNCAN GULAN	
6	DENNIS S. NJOKA	
7		
8	CARLOS MSAMBI	
	ANTHONY JOSEPHY	
9	FRACKSON C. ANDREYA	
10	KENNETH CHABUSHA	
11	WICKER MKWEZALAMBA	
12	HEIESS JOSIA	
13	Chikondi George Kanengo	
14	HENRY KALIZA	
15	WILSON CHIGWIYA	

Trees of Hope Plan Vivo Validation Date: 12/02/2016
Local Program Monitor Meeting Location: Upper Neno

No.	NAME	SIGNATURE
1	JAILOSI KUNGADE	
2	BRUNO KATEMA	
3	Mosted Chifumbi	
4	Feston Fauria	
5	Denis Sulumu	
6	Andrew Mbawa	
7	Rex Chiwaya	
8	George Kadzombe	
9	ALEXANDER MUSSA	
10	VENANCIO LUKER	
11	JOSEPH MGOGODO	
12	Peter Zigwa	
13	BERNARD MAMIKUNGULU	
14	Enock Chingana	
15	Albert A. CHAKUDA	
16	RHODRECK RAM KANZONDENI	
17	Bizret Chinkwita	

Appendix II – Summary of comments provided by the Technical Advisory Committee (TAC) to and the Plan Vivo Foundation.

Plan Vivo Technical specification review feedback

Title(s) of technical specification(s): Citrus orchard, Mango orchard, Dispersed Inter-planting, Boundary planting, Woodlot, Assessment of Net Carbon Benefit of CHDI Malawi Land Use Activities

Project name: Trees of Hope

Project coordinator: Clinton Hunter Development Initiative

Date: 24/05/2010

<table>
<tr><th colspan="3">Description of activities</th><th>Response from project</th></tr>
<tr><td>Requirement</td><td colspan="2">Suitability and scope of activity described, including geography, ecosystem type and climatic conditions where the technical specifications are applicable.</td><td></td></tr>
<tr><td>Requirement met?</td><td colspan="2">N</td><td></td></tr>
<tr><td>Feedback from Plan Vivo Foundation</td><td colspan="2">The technical specification requires a more clear description of its scope and applicability. e.g. in what conditions (area and ecosystem type, socio-political situation) is the technical specification applicable, in what conditions could it be used. As the tech specs are for a Plan Vivo project i.e. a project that that can gradually grow and spread across a landscape in a programmatic way, the parameters within which the tech spec applies need to be clear.

For example, the mango tech spec states that "The most suitable areas for this system are neglected / degraded lands." – this needs to go a bit further by defining the characteristics of degraded land plus stating the areas where the tech spec should not be used. For example, it is assumed that woodlots and orchards will not be planted on cultivated land, as this would displace crops, but rather on degraded land only. This needs to be specified to demonstrate that the project activities are not displacing or endangering food production.

This could be summarised in a table as follows (adding or deleting land-uses as relevant):

<table>
<tr><th>Land-use</th><th>Basic characteristics</th><th>Eligible/not eligible/eligible wit conditions</th></tr>
<tr><td>Natural forest</td><td></td><td>not eligible (i.e. farr not allowed to clear forest to plant orcha</td></tr>
<tr><td>Cropland/cultivated land</td><td></td><td></td></tr>
<tr><td>Degraded land</td><td></td><td></td></tr>
<tr><td>Wetland</td><td></td><td></td></tr>
<tr><td>Riparian areas</td><td></td><td></td></tr>
<tr><td>Grassland</td><td></td><td></td></tr>
<tr><td>Other</td><td></td><td></td></tr>
</table>
</td><td></td></tr>
</table>

Actions Required	1. Please clearly define under what conditions the technical specifications apply to as described above.	Enter response (if you have made changes to the technical specifications as a result, please summarise and provide relevant page number(s))
Baseline		
Requirement	Credible and comprehensive baseline scenario defined clearly using appropriate indicators	
Requirement met?	N	
Summary of Feedback from Reviewers	**Mango orchards** *Considering the need to remove competing woody plants, **0.42 tons C / Ha would be on the low side even for land that is regularly cultivated**. Farmers [should be] encouraged to retain some soil improving natural trees on cultivated land at a density that does not compete with crops for light, water and nutrients.*	
Feedback from Plan Vivo Foundation	It is not clear why the baseline for woodlots (7.6tC/ha) should be so different from the other technical specifications (0.42tC/ha).	
Actions Required	2. The spread of baseline results is still to be added to the carbon modelling report to enable an assessment of whether the overall figure proposed is reasonable 3. Does the project encourage producers to retain some natural trees on cultivated land, or is total clearing encouraged? NB/ The project coordinator should ensure plan vivos are not registered where producers have deforested in order to join the project	Enter response (if you have made changes to the technical specifications as a result, please summarise and provide relevant page number(s))
Guidance	• Natural regeneration should be promoted in sites where there is good potential.	
Carbon Accounting		
Requirement	**Assumptions and factors used are reasonable, transparent and conservative**	
Requirement met	N	
Feedback from Reviewers	**General** *Some project actions include "**land or bush clearing**". Are the emissions associated with "land and bush clearing" accounted for?*	
Feedback from Plan Vivo Foundation	**Boundary planting** 1. Figure 12.1 in the boundary planting technical specification seems to be incorrect – if there is 50% thinning at year 10, but not a significant impact on total carbon – presumably carbon in retained in products? Yet there is no visible products line in the graph.	
Actions Required	4. Check boundary planting graph (figure 12.1) and the same in carbon modelling report. 5. Clarify impact of initial land clearing on carbon benefit	Enter response

Requirement	**Crediting period defined and appropriate to activity**	
Requirement met	**Y**	
Actions Required	none	Enter response
Permanence		
Requirement	Risks to permanence of carbon stocks properly identified and assessed, expressly including consideration of: · Risks from natural disturbance such as fire, drought or hurricanes; · Risks of pests and diseases; · Security of tenure; · Risks from political or social instability Measures to mitigate those risks are identified and practicable.	
Requirement met?	N	
Feedback from Reviewers	*No risk assessments included*	
Feedback from Plan Vivo Foundation		
Actions Required	6. The determination of the 20% risk buffer should be teamed with a risk assessment which includes a description of the different risks to permanence of the land-use system, level of risk (low/medium/high) and mitigation measures to reduce risks.	Enter response
Requirement	Risk buffer recommendation included and appropriate in light of any potential risks of reversal.	
Requirement met?	Y	
Actions Required	**none**	
Monitoring		
Requirement	Monitoring indicators are clear, cost-effective (e.g. live tree biomass monitoring capable of being carried out be community technicians) and provide a sound basis for evaluating progress towards targets/	
Requirement met	N	
Feedback from Reviewers	**General** *It is unlikely that there will be 100% survival of survival of seedlings. A more precise monitoring indicator may be that a given plot has reached a desired planting density*	
	Mango and citrus • *DBH at 1.3m is hard to apply to grafted mango trees and the targets of DBH > 8cm after 4 years, > 15cm after 7 tears and > 20cm after 10 years are unrealistic.* • *DBH is hard to apply to citrus trees and the targets of DBH > 8cm after 4 years, > 15cm after 7 tears and > 15cm after 10 years are unrealistic.*	
	Woodlots • *The average DBH figures are possible for some species, but not for others.* • *Sample measurements of trees should be taken on the monitoring form.*	
	Boundary planting • *The average DBH figures are possible for some species, but not for others. If the species I recommend are used (Pterocarpus, Grevillea robusta and Markhamia lutea), the figures cited are more realistic.*	
Actions Required	7. Check reasonableness of DBH figures for monitoring. Is there no available data to improve the figures? It may be necessary to assess field measurements taken in year 3 to determine average figures, and modify monitoring targets on the basis of this information.	Enter response

	8. Consider whether requiring producers to reach 100% survival to receive payment is realistic. Reaching a given planting density may be a more appropriate target.	
Ecosystem impacts		
Requirement	Biodiversity impacts considered and likely to be positive	
Requirement met?	**N**	
Feedback from Reviewers	**General** *Biodiversity benefits would be limited by initial land clearance and species specific blocks of planted trees. The best option to secure and enhance biodiversity is to reduce pressure on the natural woodlands (by planting trees for different uses) combined with management practices that promote natural regeneration in areas that have been degraded or deforested.* **Mango and citrus orchards** • *How will mango production increase biodiversity? This needs a clear explanation. How is biodiversity enhanced and wildlife habitat protected when the land is cleared and habitat replaced with mango trees?* • *The removal of competing vegetation reduces biodiversity, it does not enhance it as claimed*	
Actions Required	**Mango and citrus** 9. Explain how the creation of mango and citrus orchards increases biodiversity **General** 10. Promote limited initial land clearing where possible and management activities that promote natural regeneration.	
Requirement	Evidence that there will be no negative impact on water quality or water-tables	
Requirement met?	**Y**	
Actions Required	**none**	
Community-led design		
Requirement	Evidence that activities designed to meet the needs of target groups and are likely to have livelihood benefits over and above carbon payments.	
Requirement met?	**Y**	
Actions Required	**none**	
Requirement	Evidence of participatory design (meetings).	
Requirement met?	**Y**	
Actions Required	none	Enter response
Guidance		
Management system		
Requirement	Management objectives and species defined and appropriate to activity.	
Requirement met?	**N**	
Feedback from Reviewers	**Mango** • *Item 5.0 mentions spacing of 5m x 5m which gives you 400/ha. 200 trees/ha = 7m x 7m. I would recommend at least 7m x 7m.* • *Spacing of 6 x 6m or less for mangoes would require thinning after a short time. If the site is high potential, one should use even 8 x 8m. Mangoes and other tropical fruits require sufficient light exposure for fruiting. If the trees are close say at 5 x5m, they will greatly shade each other after 4 – 6 years, making flowering to fail from some sides.*	

	Woodlots • *Other suitable fast-growing species include indigenous fast growing Acacias which are excellent fuelwood species – Acacia polyacantha and A. galpinii. Melia azedarach a naturalized exotic, is also fast growing and easier to raise than Neem its cousin.* • ***Neem:** The seed for this species is difficult to obtain and available only for a short window in end of November & December from the lower Shire Valley. The seed is viable for only 3 weeks unless properly handled and dried under cool dry conditions. This is generally not possible in Malawi, which means planting the seeds in a nursery December which will have to remain in the nursery for 10-11 months till the next rains come – not a practical option for smallholder farmers.* • *The technical specification needs to specify which trees are used for firewood. Khaya and Afzelia are more suited to high value timber/furniture, flooring etc not firewood. These species will also not reach a harvestable size in 6 years.* • *The growth form of these species is not suitable for long straight poles of any significant diameter. Short poles for roofing material on mud huts or tobacco barns are possible from these species.* • *The project could benefit from exploring enrichment planting with valuable trees for timber or good quality poles, promoting bamboo as a cash crop, and perimeter planting with timber trees to assist in land demarcation.*	
	Boundary planting • *The list of species could be improved and expanded upon. I recommend adding Senna siamea, Senna spectabilis, Albizia lebbeck, and Faidherbia albida because these are fast growing, widely adaptable species well known and planted by farmers. They also possess excellent abilities to coppice and pollard* • *I recommend removing Pterocarpus, Grevillea robusta and Markhamia lutea* o *Grevillea robusta highly prone to termite attack in most parts of Malawi unless treated with pesticides* o Markhamia lutea not indigenous as claimed; seed not available unless sourced from Kenya where it is also difficult to find. The seed is also small and needs careful handing and storage for good germination. o *Pterocarpus is very slow growing and the seed is difficult to obtain.*	
	Dispersed interplanting *See above comments on Pterocarpus, Grevillea robusta and Markhamia lutea (recommend removal and using other soil improving trees such as Acacia polyacantha, A. galpinii and Albizia lebbeck*	
Foundation feedback	**Woodlots** • Toona ciliata is included in the initial list of species (section 1.1) but missing from all further tables (ecology, growth habit, habitat requirement etc). • Afzelia quanzensis is included in the technical specification but is not listed as one of the species measured in the carbon modelling report. This needs to be justified. • Khaya anthoteca (red mahogany) is included in the technical specification, and is listed in the carbon modelling report (section 4.1) as a species that was measured, but then it does not appear in the modelling report (p.29 Appendix II in the list of species) • The technical specification and carbon modelling report do not describe what assumptions have been made about the composition of the woodlot	

	(i.e. proportions of different species). They both should state what the assumption is and what degree of flexibility should be allowed to farmers (i.e. can they plant any combination of the species?). **Boundary planting** 1. The species described in section 1.1 are different from those described in section 5.3, and those that have been used in the carbon modelling report to determine the carbon benefit	
Actions Required	**Mango** 11. Consider increasing spacing to at least 7x7m (which would entail an amendment to the carbon benefit based on less trees per hectare) **Woodlots** 12. Add information on Toona ciliata (Australian red cedar/toon tree) to woodlot technical specification if it is being planted in the project 13. Specify which species should be used for firewood 14. Justify use of species for poles 15. Add description of assumption on composition of woodlots (i.e. what proportion of the different species are the calculations based on) and what composition farmers are allowed to plant. **Boundary planting** 16. Clarify and justify species chosen (responding to reviewer's comments) and consider inclusion of suggested species for future planting. Are the species to be used in the boundary planting system those listed at the beginning of the technical specification, or those listed in the carbon modelling report.	Enter response
Guidance	Encouraging mulching will promote maximum soil quality benefits	
Requirement	Management requirements described properly and capacity to meet them is evident.	
Requirement met?	**N**	
Feedback from Reviewers	**Mango** • *The spec does not specify what the recommended procedures for pest and disease management are* • *The spec does not specify what practices will be used to ensure soil conservation* • *Section 4.1 [establishment costs], bullet 1 mentions: "cost of seed" while bullet 8 mentions "the purchase of scions and mango stones for rootstocks". This is double counting.* • *Section 5.0 mentions: "The average yield per hectare of a mango orchard is estimated at 80kg per year". This should read 80kg **per tree** per year.* • *Varieties Kent and Tommy Atkin are badly attacked by weevils that destroy the fruit before maturity. They require intensive spraying to combat this attack.*	
	Woodlots • *Many of the tree species mentioned coppice or pollard very well for at least 3 times so there is no need to replant. Species which do not coppice well include Khaya anthotheca, Afzelia quanzensis and Pterocarpus angolensis*	

Feedback from Foundation	**Mango:** • The spacing requirement is not clear. Section 4.1 mentions 200 seedlings at $ 600. Section 5.0, however, specifies a plant density of 400 trees /ha. NB/ 200/ha = a spacing of 7x7 m. 400/ha = a spacing of 5x5m	
Actions Required	**Mango** 17. Please provide an appendix or supporting document describing what the pest and disease management practices are that will be recommended to producers 18. Please describe what management practices will be employed to ensure soil conservation 19. Clarify spacing requirement (check consistency throughout document) 20. Remove 'cost of seed' bullet from section 4 establishment costs/justify its being there 21. Clarify in section 5 that yield is expected to be 80kg per tree per year, not 80kg per hectare per year. **Woodlots** 22. Clarify whether all species need to be re-planted after harvesting or if some will coppice/pollard.	Enter response
Guidance	**General** **Total LandCare** have developed a reference manual entitled **"LandCare Practices in Malawi" by Bunderson et al 2000.** It includes details on seed collection, nursery management and outplanting/management in the field. The manual is available from Total LandCare and the Land Resource Center in Lilongwe	
Requirement	Good practice measures identified.	
Requirement met?	**N**	
Feedback from Reviewers	**Mango tech spec** • **Regarding use of orchards for hanging hives:** *This is possible but what is proposed to reduce attack from African honey bees when picking the fruit? And how will farmers be trained in bee keeping and supplied with the necessary bee keeping hives, kits & protective clothing?* • **Regarding planting techniques:** *Avoid waste material touching the stem but be sure to cover the root zone. Starting mango trees from seed then grafting has a long lead in period where follow up actions are necessary with no return to the farmer. Successful grafting of Mangos requires special skills. If not available among the targeted farmers, buying established, grafted seedlings from local producers is recommended where a crop can be expected in 3 - 4 years. Grafted trees are available at MK 250 / US$ 1,66. Nursery cost of $ 600 vs. purchase cost of $ 332.* • *When planting, it is recommended to apply a bucket of rotted compost / manure to the planting station.* • *Ensure that all precautions are taken to prevent fire in the orchard.*	
	Woodlots *Identify where to obtain seed – the best source is from the Land Resource Center, bottom floor of the Dept of Land Resources & Conservation opposite Land & Lake Safaris, Old Town Lilongwe*	

Actions Required	• It is recommended that CHDI seek local support e.g. from Total Land Care or other body with expertise in afforestation and agroforestry systems, to ensure that good practice measures and appropriate species are being promoted.	Enter response