

INTERNATIONAL TROPICAL TIMBER ORGANIZATION (ITTO)

Trade and Market Transparency (TMT)

PRE-PROJECT ACTIVITY DOCUMENT

TITLE	METHODOLOGICAL DEVELOPMENT FOR LIFE CYCLE ANALYSIS OF TROPICAL WOOD PRODUCTS TO IMPROVE THEIR COMPETITIVENESS IN INTERNATIONAL MARKETS
SERIAL NUMBER	TMT-PA 007/11 Rev.1 (I)
SUBMITTED BY	ITTO SECRETARIAT
ORIGINAL LANGUAGE	ENGLISH

SUMMARY

This proposal of the ITTO Secretariat to the Thematic Programme TMT focuses on the development of methodologies for life cycle analysis of tropical wood products. The proposal has been developed to address apparent problems in the figures used for tropical timber products in the approved voluntary market methodology for improved forest management, reducing emissions from deforestation and degradation and afforestation/reforestation.

The outcome of this work will be more accurate information on the estimation of carbon stocks in the long-term tropical wood products pool, which will improve the products' competitiveness in international markets, especially in the context of a voluntary carbon marketing scheme.

EXECUTING AGENCY ITTO Secretariat

COOPERATING GOVERNMENTS ---

DURATION 6 MONTHS

APPROXIMATE STARTING DATE TO BE DETERMINED

BUDGET AND PROPOSED SOURCES OF FINANCE	Source	Contribution in US\$	Local Currency Equivalent
	ITTO	60,116	
	TOTAL	60,116	

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LIST OF ABBREVIATIONS AND ACRONYMS

ACR	The American Carbon Registry
A/R	Afforestation/Reforestation
CSAG	Civil Society Advisory Group
IPCC	Intergovernmental Panel on Climate Change
IFM	Improved Forest Management
ITTO	International Tropical Timber Organization
LCA	Life Cycle Analysis
PES	Payments for Environmental Services
REDD	Reducing Emissions from Deforestation and Forest Degradation
REDDES	ITTO Thematic Programme on Reducing Deforestation and Forest Degradation and Enhancing Environmental Services
SFM	Sustainable Forest Management
TAG	Trade Advisory Group of ITTO
TCG	Task Coordination Group
TMT	ITTO Thematic Programme on Trade and Market Transparency
USD	United States Dollar
VCS	Verified Carbon Standard

Part 1 Pre-Project Context

1.1 Origin and justification

The idea behind this Activity originated from recent developments in the voluntary carbon market. Over the last year, the Verified Carbon Standard (VCS) published a series of methodologies to estimate carbon stocks including wood products. The amount of wood going into the long-term product pool (and therefore carbon sequestered in this pool) is relevant to almost all forest-related activities eligible for the voluntary market including Afforestation/Reforestation (AR), Improved Forest Management (IFM) and Reduced Emissions from Deforestation and Degradation (REDD). Thus as the voluntary market develops and more project types are included that are required to account for long-term wood products, it is important that the methodologies and emission factors used incorporate the most up-to-date understanding and scientific knowledge.

Under the voluntary market a single method dominates for wood products accounting. This method can be found in approved VCS REDD methodologies VM0006 and VM0007, approved VCS IFM methodologies VM0003, VM0005 and VM0010, and approved American Carbon Registry (ACR) AR methodology “Afforestation and Reforestation of Degraded Lands”. This method is based on a study by Winjum et al (1998) and several other papers cited therein, and estimate carbon stocks stored in wood products resulting from timber harvest occurring prior to or in the process of deforestation. The methods apply the simplifying (and conservative) assumption that all extracted biomass not retained in long-term wood products after 100 years is emitted to the atmosphere in the year harvested, rather than tracking annual emissions through retirement, burning and decomposition.

The methodologies compare the fraction of wood products that will be emitted to the atmosphere between 5 and 100 years after production by class of wood products for three regions (boreal, temperate and tropical). Data provided by Winjum et al. indicated that wood products from tropical regions are emitted to the atmosphere up to five times faster than wood products from other regions. This factor and all the factors in the Winjum et al. paper should be analyzed and updated. In particular, the Winjum et al. paper does not consider export of products from tropical regions to temperate or boreal regions, nor does the paper fully consider the issue of landfilled wood products and associated emissions or lack of emissions. ***It is in ITTO's and its member countries' interest to revise and up-date the methodologies in order to have accurate estimates of the carbon stocks stored in tropical wood products by species, product type, and end-use.***

The outcome of this pre-project is expected to be a methodology for revisions of wood product factors (carbon stored in the long-term) and of the associated voluntary carbon market methodologies.

The beneficiaries are:

1. ITTO: valid information on tropical wood products durability will determine their competitiveness in international markets.
2. Member countries' governments, civil society organizations and local communities: new avenues for financing SFM and sustainable livelihoods in their countries will be identified.
3. Private sector: a mechanism for responding to their interest in carbon offsetting, and in complying with their Corporate Social Responsibility objectives will emerge.
4. International Donors: a new opportunity to contribute to field projects relating SFM with tropical wood products and carbon will arise.

The benefits generated in this Activity include:

- Updated data to that cited in Winjum et al. (1998), consequently providing strong justification to modify the approved voluntary market methodologies and policies.
- Promotion of fair and transparent markets for tropical wood products.
- Increased value of tropical wood products in comparison to wood products from other regions.
- Promotion of information sharing on REDD and PES schemes through the compilation of positive experiences.
- Access of additional financial resources to member countries to support their efforts in managing their forest resources sustainably to generate on-going income for socio-economic development including reducing poverty;
- Strengthening further the capacity of ITTO's producer member countries to benefit from the emerging market for emissions reductions credits.

1.2 Relevance

The proposed Activity is directly related to selected objectives of ITTA 2006 and to the implementation of ITTO Action Plan, as detailed below.

1.2.1 Conformity with ITTO's objectives and priorities

ITTA 2006:

Clause (e) Promoting improved understanding of the structural conditions in international markets, including long-term trends in consumption and production, factors affecting market access, consumer preferences and prices, and conditions leading to prices which reflect the costs of sustainable forest management: *the expected outcome is an up-dated methodology for to accurate estimated carbon stocks in tropical wood products, which may have direct impact not only in the voluntary carbon market, but also in the preference of consumers.*

Clause (f) Promoting and supporting research and development with a view to improving forest management and efficiency of wood utilization and the competitiveness of wood products relative to other materials, as well as increasing the capacity to conserve and enhance other forest values in timber producing tropical forests: *the methodology will also be used to compare the amount store in tropical wood products, versus other non-tropical wood products, and other materials. Such information could be used by ITTO's producer members in order to enhance the value and competitiveness of tropical timber in domestic and international markets.*

Clause (h) Improving market intelligence and encouraging information sharing on the international timber market with a view to ensuring greater transparency and better information on markets and market trends, including the gathering, compilation and dissemination of trade related data, including data related to species being traded: *it is expected that the methodology develop under this proposal will allow to indentify carbon stocks in tropical wood products, by specie, products, and end-uses. More accurate information implies greater market transparency.*

Clause (k) Improving marketing and distribution of tropical timber and timber product exports from sustainably managed and legally harvested sources and which are legally traded, including promoting consumer awareness: *accurate information on carbon stocks in tropical wood products, could further enhance marketing strategies for particular niches in which tropical wood products show competitive advantages.*

Clause (o) Encouraging information sharing for a better understanding of voluntary mechanisms such as, *inter alia*, certification, to promote sustainable management of tropical forests, and assisting members with their efforts

in this area: *the outcomes of this proposal will provide a better understanding of the performance of tropical wood products, which could enhance their competitiveness in the voluntary carbon market.*

Clause (s) Identifying and addressing relevant new and emerging issues: *this Activity will provide necessary inputs to enhance market information specifically in dealing with the issue of Life Cycle Analysis of tropical wood products.*

ITTO Action Plan 2008-2011

The objectives of the International Tropical Timber Agreement, 2006 are to promote the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests and to promote the sustainable management of tropical timber producing forests. The ITTO Action Plan has been devised in the context of wider concerns and interests that relate to and/or are likely to affect tropical timber and tropical timber-producing forests, as the many existing and potential roles of tropical forests in international markets and climate change issues have been receiving increasing recognition and attention at the international level.

This multipurpose function of forests is clearly spelled out in Expected outcome 3 of the ITTO Action Plan 2008-2011: *Improved data and knowledge, projections and competitiveness on trade in timber and timber products in international markets*; Expected outcome 5: *Tropical forest resources better secured*. Action (G) proposes for ITTO to “*Support an understanding of the impact of emerging issues such as carbon sequestration and reduced emissions from deforestation and forest degradation (REDD) on tropical forest development*”. It calls for “*conducting analytical work, piloting activities and capacity building on [avoiding] deforestation, forest degradation and enhancement of carbon sinks*”; Cross cutting action (Strengthen databases and information systems): *Support the sharing of information, knowledge and technology with a view to improving SFM, product processing and utilization, and understanding of the marketplace as related to ITTO's priorities.*

The current proposal will directly contribute to the achievement of above mentioned outputs and activities, by developing and up-date methodology to assess the carbon stocks in tropical wood products in the long term under the criteria of the VCS. The research could further be used to determine the competitiveness of tropical wood in the voluntary carbon market and type of activities eligible under the Afforestation/Reforestation (AR), Improved Forest Management (IFM) and Reduced Emissions from Deforestation and Degradation (REDD) schemes.

TMT THEMATIC PROGRAMME

In the area of facilitating market access and improving the competitiveness of tropical timber, the Programme can support monitoring of factors affecting tropical timber markets (e.g. tariffs, product standards and technical regulations, non-tariff barriers, macroeconomic changes in the international markets, and other emerging factors), competitiveness of tropical timber, comparative life-cycle analyses on tropical timber products vis-à-vis their substitutes including their carbon credentials, benchmarking of cost-competitiveness, and other relevant topics.

This Activity will study the existing information on Life Cycle Analysis of tropical timber products and develop a methodology to carry out Life Cycle Analysis to improve competitiveness of the products in international markets. This Activity will particularly serve the fulfilment of the TMT Monitoring Protocol outputs: improved quality of data and analysis; periodic systematic information and research on the life cycle impacts of tropical timber vs. substitutes; and market promotion activities for tropical timber.

1.2.2 Relevance to ITTO's policies

ITTO member countries have been committed to SFM and ITTO has been promoting SFM through its policy and project work. It has funded more than 940 projects, pre-projects and activities valued at more than US\$340 million, mainly to support efforts in tropical countries for the conservation and sustainable utilization of their forest resources; train the forest, industry and conservation workforces; promote further efficiency in tropical

timber processing; improve market transparency; and promote trade of tropical timber from sustainable and legal sources.

New strategies are needed to generate additional benefits and new financial resources are required to promote the efficient progress of SFM in the tropics. Projects related to REDD, IFM, and other voluntary forest carbon schemes are one way to generate such additional benefits but accurate data on how to estimate the long term storage of carbon and emissions of carbon of tropical timber products is required for such products to take advantage of the potential of forest carbon funding mechanisms.

This activity aims at undertaking life cycle analysis to allow for ex-ante estimation of carbon stocks in the long-term wood products pool. The results of the analysis will benefit the member countries in strengthening their wood-based industry sector to enable tropical wood products improve their competitiveness in international markets.

Part 2 Justification of Pre-Project

2.1 Objectives

2.1.1 Development objective

To propose an approach to revise, as needed, the factors used in estimating the carbon emissions and removals from tropical wood products in the long-term in comparison to wood products from other regions (boreal and temperate), and to develop a more up-to-date and accurate LCA methodology for wood products for carbon markets.

The expected impact indicators of the scheme to be proposed are:

- i) Enhanced value of tropical wood products in the context of carbon markets.
- ii) Contribution to the establishment of fair trade and market transparency for tropical wood products.
- iii) ***Contribution to the reduction of carbon emissions generated due to climate change mitigation activities preventing deforestation and degradation of tropical forests.***

2.1.2 Specific objective

To investigate and update existing information and methodologies for studying the LCA of tropical wood products in the context of their carbon emissions.

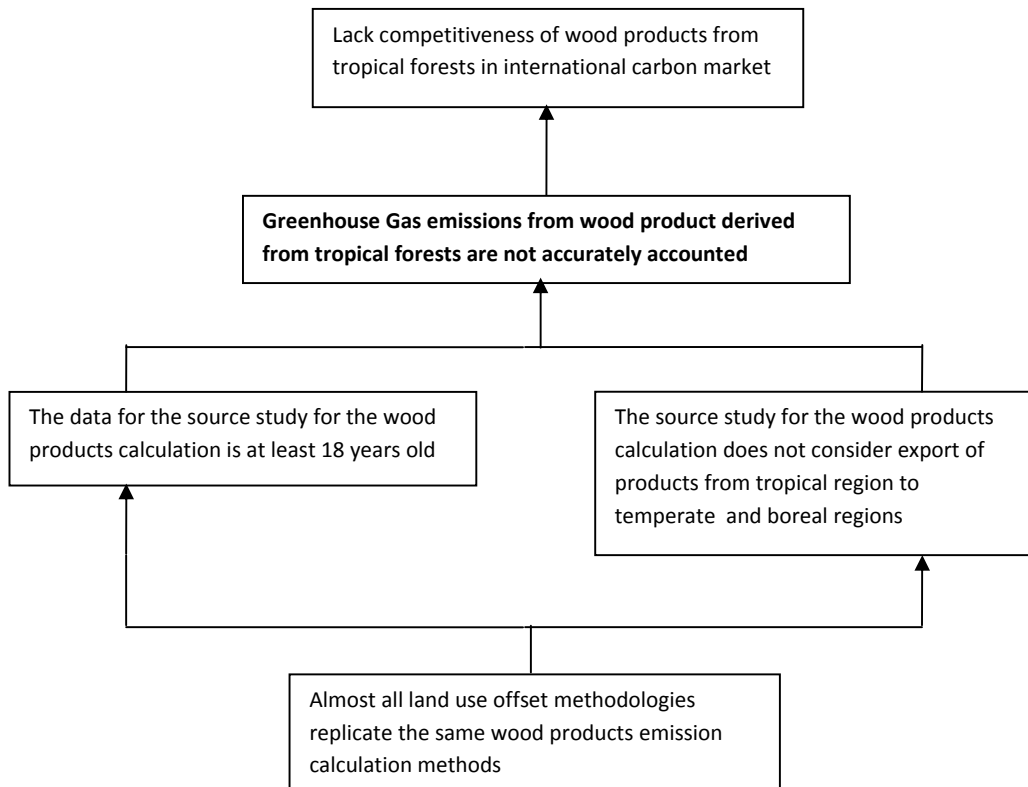
Outcome indicators are as follow:

- i) ***Accurate data and information of LCA of tropical wood products.***
- ii) ***Well defined LCA Methodology for tropical wood products.***
- iii) ***Modified approved voluntary market methodologies.***

2.2 Preliminary problem identification

The Verified Carbon Standard (VCS) published a series of methodologies to estimate carbon stocks including wood products. Under the voluntary market a single method dominates for wood products accounting. This method can be found in approved VCS REDD methodologies VM0006 and VM0007, approved VCS IFM methodologies VM0003, VM0005 and VM0010, and approved American Carbon Registry (ACR) AR methodology “Afforestation and Reforestation of Degraded Lands”. The methodologies compare the fraction of wood products that will be emitted to the atmosphere between 5 and 100 years after production by class of wood products for three regions (boreal, temperate and tropical). Data provided by Winjum et al. indicated that wood products from tropical regions are emitted to the atmosphere up to five times faster than wood products from other regions. This factor and all the factors in the Winjum et al. paper should be analyzed and updated. In particular, the Winjum et al. paper does not consider export of products from tropical regions to temperate or boreal regions, nor does the paper fully consider the issue of landfilled wood products and associated emissions or lack of emissions

Figure 1. The problem tree of the proposal



Part 3 Pre-Project Interventions

3.1 Outputs

The pre-project will lead to three outputs:

1. Literature review on harvested wood products and harvested wood product accounting methods

This output will be an in-depth review of the methods and data sources behind the Winjum et al. approach, which is the source for the voluntary carbon market methods. The output will also examine a variety of other approaches and literature sources, such as other LCA of wood products (tropical and non-tropical); studies on decomposition of wood products in landfills; market of tropical wood products by species/category of products/end-use conditions; among others to ensure the most up to date science on harvested wood products is included.

2. Proposed plan for analysis of data, formulation of an adapted methodology and approach to updating the registered voluntary carbon market accounting methodologies.

Building from the literature review, the second output will describe a plan for the analysis needed to develop new defaults and parameters for emissions from harvested wood products. The plan will also detail the required steps for updating the methods as they stand under the VCS and the ACR.

3. A concept to implement the proposed methodology through a full project proposal if necessary.

3.2 Activities, inputs and unit costs

Table 1. The Activities, inputs and unit costs for the pre-project

Activity	Required Inputs	Corresponding Unit Costs	Output
Task 1.1 - Review of literature behind Winjum et al 1998	Literature and expert consultation	Salary costs for consultants	Literature review on harvested wood products and harvesting wood product accounting methods
Task 1.2 - Review of alternate literature sources on wood product emissions	Literature and expert consultation	Salary costs for consultants	
Task 2: Assessment of landfilling of wood products and emissions associated with landfilled products	Literature and expert consultation	Salary costs for consultants	
Task 3: Evaluation of export of tropical wood products	Literature and expert consultation	Salary costs for consultants	
Task 4: Plan for the analysis of wood product emission rates and for the update of the emissions methodology	Outputs from Tasks 1, 2, and 3, and consultant assessment of needs and steps to achieve needs	Salary costs for consultants	Proposed plan for analysis of data, formulation of an adapted methodology and approach to updating the registered voluntary

			carbon market accounting methodologies
Task 5: Elaborate a concept to test the revised and up-dated methodology, through a full project proposal if necessary.	Outputs from Tasks 1, 2, 3, and 4, and consultant time	Salary costs for consultants	A comprehensive document, describing the necessary steps, inputs, technology, and cost to test the up-dated methodology.

3.3 Approaches and methods

The activity will engage qualified consultant/s who have extensive experiences in LCA of tropical wood products and climate change issues. The outputs of the project will be achieved through intensive literature reviews and comprehensive consultations with key stakeholders. In addition, the ITTO climate change task coordination group (TCG), ITTO Forest Industry Division, and ITTO Economic Information and Market Intelligence Division will be involved in the development and implementation of the proposal.

The following represent the tasks that will be undertaken:

Task 1: Literature of harvested wood products and harvested wood product greenhouse gas emission accounting

Task 1.1 – Review of literature behind Winjum et al. 1998

The source of the greenhouse gas accounting of tropical wood products is Winjum et al (1998)¹ so the emphasis of this sub-task will be to examine the literature behind their analysis. The literature on which the Winjum et al. analysis is based essentially consists of six papers that inform both the proportion of products assumed to be emitted immediately (<5 years life) and the annual subsequent emitted proportion (through burning and decay). An example of one issue that will be examined in depth will be the Winjum et al. assumption of a linear rate of emissions through time.

Task 1.2 – Review of alternate literature sources on wood product emissions

1.2A – Review of IPCC 2006 wood product accounting methods and data sources

An alternative accounting method is proposed in the IPCC Guidelines for National Greenhouse Gas Inventories. The approach and source literature are given in Chapter 12 of Volume 4. Both the approach and source literature will be studied and evaluated with regard to updating the existing voluntary market approach.

1.2B – Review of US Government’s approach to wood product accounting and data sources

The US Forest Service has a methodology for tracking wood product production, use, rate of retirement to landfill, and emission to the atmosphere. This methodology resulted in the default tables in Smith et al (2006)². The

¹ Winjum, J.K., Brown, S. and Schlamadinger, B. 1998. Forest harvests and wood products: sources and sinks of atmospheric carbon dioxide. *Forest Science* 44: 272-284

² Smith, J.E., Heath, L.S., Skog, K.E. and Birdsey, R.A. 2006. Methods for calculating forest ecosystem and harvested carbon with standard estimates for forest types of the United States. Gen. Tech. Rep. NE-243. Newtown Sq, PA. USDA Forest Service, Northeastern Research Station. 216 p.

methods will be examined including assumptions and scientific justifications. Where necessary the US Government scientists who developed the methods will be consulted directly.

1.2C – Review recent wood products literature

The literature behind Winjum et al (1998) is at least 17 years old, and the literature behind the IPCC approach is at least 6 years old. New literature has been published in the intervening years, including the ITTO Review of information on life cycle analysis of tropical timber products (August 2004). A search will be conducted and new findings will be incorporated in the literature study.

Task 2: Assessment of landfilling of wood products and emissions associated with landfilled products

Where wood products are not burned or left to decompose it is likely they are landfilled. This will be especially true for products exported to developed countries. Emissions associated with landfills are the subject of some controversy between the extremes of there being zero emissions from products in landfills and associating the stored products and the substantive emissions with landfill methane. Under this task we will review the literature for the current status of knowledge and understanding on emissions from landfilled wood products.

Task 3: Evaluation of export of tropical wood products

It is our belief at this time that the single most important issue missing from the existing emissions methodology, with regard to consideration of wood products derived from timber harvested in the tropics, is the export proportion. The methodology used by the voluntary market today assumes that all products remain within the region in which they originated. The Winjum et al. analysis (with justification) shows faster retirement with accompanying emissions from products in the tropics than in other regions. Exported tropical timber and exported products originating in the tropics will be retired and emitted at the rate appropriate to the region they were exported to.

Under this task we shall review available evidence on the export and import of timber and timber products.

Task 4: Plan for the analysis of wood product emission rates and for the update of the emissions methodology

This task will develop the key output of this pre-project - the plan for emissions rate analysis and emissions methodology update.

Based on the output of Tasks 1, 2, and 3 the analysis plan will describe how wood product emission rates will be analyzed including consideration of changing rates of emissions through time after production, export proportion and landfill emissions.

The methodology update plan will describe how the existing emissions methodology will most effectively be updated. This activity will require discussions with the VCS and ACR to determine whether the update will require a full methodology revision process for each applicable methodology or if and how a universal change could be possible.

Task 5: Elaborate a concept note to test the revised and up-dated methodology

Based on the methodology updated in task 4, a comprehensive document, describing the necessary steps, inputs, technology, cost, etc. to test the up-dated methodology, through a full project proposal, will be elaborated for further consideration of ITTO, VCS and ACR.

3.4 Work plan

Table2 Tentative Schedule

Activity/ Month	1	2	3	4	5	6
Task 1.1 - Review of literature behind Winjum et al 1998	■	■				
Task 1.2 - Review of alternate literature sources on wood product emissions	■	■	■			
Task 2: Assessment of landfilling of wood products and emissions associated with landfilled products		■	■			
Task 3: Evaluation of export of tropical wood products		■	■			
Task 4: Plan for the analysis of wood product emission rates and for the update of the emissions methodology				■	■	
Task 5: Elaborate a concept to test the revised and up-dated methodology, through a full project proposal if necessary.						■

3.5 Budget

Table 3 ITTO budget by component

Category	Description	Total in US\$
20	Sub-contracts	
21	Sub Contract to Consulting Team	31,000
22	Sub Contract for national expert	1,000
29	Subtotal	32,000
30	Duty travel	
31	DSA	5,000
32	International Travel	5,000
33	Domestic travel	600
34	Domestic DSA	600
39	Subtotal	11,200
60	Miscellaneous	
61	Publication	10,000
62		
69	Subtotal	10,000
80		
81	ITTO monitoring & review	0
82	ITTO mid-term evaluation	0
84	ITTO ex-post evaluation	0
	Subtotal (11-82)	53,200
85	ITTO program support (13% of 11-84)	6,916
100	GRAND TOTAL	60,116

Part 4 Implementation Arrangements

4.1 Executing agency and organizational structure

ITTO Secretariat will execute the proposed activity and will hire the necessary services of a consultant/s to provide technical assistance. The services of the international consultancy will include comprehensive consultations with the stakeholders with the aim of obtaining relevant information for the activity.

4.2 Pre-project management

The consultant/consultancy team to be hired will require the following knowledge:

1. Wood products and REDD/climate change policy and practice
2. Carbon estimation
3. LCA methodology

The activity will be led by the ITTO Forest Industry Division in collaboration with TCG on Climate Change. Major works of the activity will be carried out by consultant/consultancy team.

4.3 Monitoring and reporting

In general, the proposal will be monitored and evaluated in accordance with ITTO operational regulations. All activities will be carried out on the basis of the objectives, outputs, activities and indicators, work plan and in the implementation guidelines.

Annex 1 Profile of the executing agency

ITTO is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its members represent about 80% of the world's tropical forests and 90% of the global tropical timber trade.

ITTO develops internationally agreed policy documents to promote sustainable forest management and forest conservation and assists tropical member countries to adapt such policies to local circumstances and to implement them in the field through projects. In addition, ITTO collects, analyses and disseminates data on the production and trade of tropical timber and funds projects and other actions aimed at developing industries at both community and industrial scales. All projects are funded by voluntary contributions, mostly from consumer member countries. Since it became operational in 1987, ITTO has funded more than 940 projects, pre-projects and activities valued at more than US\$340 million.

The governing body of the ITTO is the International Tropical Timber Council, which is composed of all the Organization's members. ITTO has two categories of membership: producing and consuming. The Council is supported by four committees, which are open to all members and observers and provide advice and assistance to the Council on policy and project issues. Three of the committees deal with key areas of policy and project work: economic information and market intelligence; reforestation and forest management; and forest industry. These committees are supported by the Expert Panel for the Technical Appraisal of Projects and Pre-projects, which reviews project proposals for technical merit and relevance to ITTO objectives. The fourth committee, on Finance and Administration, advises the Council on matters related to the budget and other funding and administrative issues concerning the management of the Organization.

Non-member stakeholders have established two advisory groups to facilitate their participation in the Council and to provide input to the Council's decision-making process. These are the Trade Advisory Group (TAG) and the Civil Society Advisory Group (CSAG).

ITTO's small secretariat of about 35 staff is based in Yokohama, Japan. It is headed by an Executive Director, who is responsible to the Council for the administration and operation of the Agreement in accordance with decisions made by the Council. The Headquarters of ITTO is located in Yokohama, Japan. There are two (2) regional offices based in Libreville, Gabon for the African Region and Brasilia, Brazil for the Latin American and Caribbean Regions.

Annex 2 Terms of reference of personnel and consultants funded by ITTO

Over the last year, the Verified Carbon Standard (VCS) published a series of methodologies to estimate carbon stocks including wood products. As the voluntary market develops and more project types are included that are required to account for long-term wood products, it is important that the methodologies and emission factors used incorporate the most up-to-date understanding and scientific knowledge.

Under the voluntary market a single method dominates for wood products accounting. This method can be found in approved VCS REDD methodologies VM0006 and VM0007, approved VCS IFM methodologies VM0003, VM0005 and VM0010, and approved American Carbon Registry (ACR) AR methodology "Afforestation and Reforestation of Degraded Lands". The methods apply the simplifying (and conservative) assumption that all extracted biomass not retained in long-term wood products after 100 years is emitted to the atmosphere in the year harvested, rather than tracking annual emissions through retirement, burning and decomposition. The methodologies compare the fraction of wood products that will be emitted to the atmosphere between 5 and 100 years after production by class of wood products for three regions (boreal, temperate and tropical). Data provided by Winjum et al. indicated that wood products from tropical regions are emitted to the atmosphere up to five times faster than wood products from other regions. This factor and all the factors in the Winjum et al. paper should be analyzed and updated. It is in ITTO's and its member countries' interest to revise and up-date the methodologies in order to have accurate estimates of the carbon stocks stored in tropical wood products by species, product type, and end-use.

Qualifications:

The selected consultancy team will have the following experience, skills and expertise:

- Demonstrate in-depth and long-term expertise in the field of climate change in relation to land use, land-use change and forestry with proven professional knowledge/experience in compliance and voluntary carbon markets. Including:
 - Demonstrated experience writing standards and methodologies for the compliance and voluntary market in the land use sector.
 - Demonstrated experience accounting wood products and wood product emissions in land use offset projects including the design of accounting approaches.
- Evidence of existing relationships with the Verified Carbon Standard and the American Carbon Registry.
- Excellent interpersonal and communication skills, as well as fluency in the English language are required.

Activities:

Task 1: Literature of harvested wood products and harvested wood product greenhouse gas emission accounting

Task 1.1 – Review of literature behind Winjum et al 1998

Task 1.2 – Review of alternate literature sources on wood product emissions

1.2A – Review of IPCC 2006 wood product accounting methods and data sources

1.2B – Review of US Government’s approach to wood product accounting and data sources

1.2C – Review recent wood products literature

Task 2: Assessment of landfilling of wood products and emissions associated with landfilled products

Task 3: Evaluation of export of tropical wood products

Task 4: Plan for the analysis of wood product emission rates and for the update of the emissions methodology

Task 5: Elaborate a concept note to test the revised and up-dated methodology, through a full project proposal

Expected outputs:

- 1) Literature review on harvested wood products and harvested wood product accounting methods;**
- 2) Proposed plan for analysis of data, formulation of an adapted methodology and approach to updating the registered voluntary carbon market accounting methodologies; and**
- 3) A concept to implement the proposed methodology through a full project proposal if necessary.**

Annex 3 Responses to reviewer comments

Reviewer Comment	Amendment(s) made	Page #
Comment 1: Revise - as it is not complete. Many abbreviations used but not included	Has been amended.	iii
Comment 2: (Origin and justification) Clear and well justified. The clarification and actualization of the issue addressed is not only in the interest of ITTO, but particularly of its producer member countries, as it will directly impact the competitiveness of their products and make it more attractive to consumers. The section needs some English editing.	Has been amended: <i>“It is in ITTO’s and its member countries’ interest to revise and update the methodologies in order to have accurate estimates of the carbon stocks stored in tropical wood products by species, product type, and end-use.”</i>	1

<p>However, it is not indicated what additional information will be collected to aid identification and formulation of the full project. Furthermore it is not explained how the full project to be developed will create new avenues for financing SFM and sustainable livelihoods in producer countries.</p>		
<p>Comment 3:</p> <p>(Development Objective) Good, but needs English needs editing, problems with sentence construction and grammar. The section needs to be well written to ease comprehension. Reconsider the use of " to investigate".</p> <p>Not clearly understandable: "iii) does deforestation and degradations creates carbon reduction?"</p>	<p>Has been amended: <i>"To propose an approach to revise, as needed, the factors used in estimating the carbon emissions and removals from tropical wood products in the long-term in comparison to wood products from other regions (boreal and temperate), and to develop a more up-to-date and accurate LCA methodology for wood products for carbon markets"</i></p> <p><i>iii) Contribution to the reduction of carbon emissions generated due to climate change mitigation activities preventing deforestation and degradation of tropical forests.</i></p>	4
<p>Comment 4:</p> <p>(Specific Objective) Outcome indicators iii) is not clear, explain. It is not clear what the ultimate goal of the project is. Is it to contribute to developing a methodology for LCA or an accounting method for HWP (harvested wood products)? Need clarification.</p> <p>iv) a new project is not necessarily an outcome - clarify</p>	<p>Has been amended: <i>Outcome indicators are as follow:</i></p> <p><i>i) Accurate data and information of LCA of tropical wood products.</i></p> <p><i>ii) Well defined LCA Methodology for tropical wood products.</i></p> <p><i>iii) Modified approved voluntary market methodologies.</i></p>	4
<p>Comment 5:</p> <p>(Preliminary problem identification) While the tree makes reference to disadvantages concerning 'CC mitigation projects', the aim of the proposal is to strengthen competitiveness of tropical wood products in international markets - this is</p>	<p>Has been amended.</p>	5

<p>inconsistent. Text should be added to describe the problem (although this had already been done in other parts of the pre-proposal). The text in the box "The Source Study for the Wood Products or Boreal Zones" is incorrect - please revise. The tree has no clear connection with TMT objectives. Add brief text explaining the problem, its causes and effects, groups affected by the problem and indicate how they will benefit from the intended project (page 69 of project formulation manual)</p>		
<p>Comment 6: (Outputs) Good, but three outputs are clearly indicated not 4 as indicated in the text</p>	<p>Has been amended.</p>	<p>6</p>
<p>Comment 7: Budget modest. Needs to follow Manual and provide more detail (breakdown into unit costs etc.)</p>	<p>This activity will be sub-contracted. Therefore, detail break-down into unit costs is not applicable</p>	<p>9</p>
<p>Comment 8: (Project Management) Could be improved by describing the arrangements for the implementation of the pre-project</p>	<p>Has been amended: <i>"The activity will be led by the ITTO Forest Industry Division in collaboration with TCG on Climate Change. Major works of the activity will be carried out by consultant/consultancy team"</i></p>	<p>10</p>
<p>Comment 9: (TORs) The task "elaboration of a concept note" should include details on that note as under 3.3 Approaches and Methods (Task 5) TOR incomplete. Brief concept on background/key problem, activities to be performed, expected output and qualification of experts/consultants eligibility, skills and experience needed</p>	<p>Has been amended.</p>	<p>11-12</p>

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