

PROCEEDINGS
OF THE
TECHNICAL MEETING OF THE NATIONAL
CORRESPONDENTS
GLOBAL FOREST RESOURCES ASSESSMENT 2010

ROME, ITALY, 3-7 MARCH 2008



April, 2008





The Global Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions which are important at the global, national and local scales, and they play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Global Forest Resources Assessment Programme. The Global Forest Resources Assessment 2010 (FRA 2010) has been requested by the FAO Committee on Forestry in 2007 and will be based on a comprehensive country reporting process, complemented by a global remote sensing survey. The assessment will cover all seven thematic elements of sustainable forest management, including variables related to the policy, legal and institutional framework. FRA 2010 is also aimed at providing information to facilitate the assessment of progress towards the Global Objectives on Forests of the United Nations Forum on Forests and the 2010 Biodiversity Target of the Convention on Biological Diversity. Results are expected to be published in 2010.

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Forestry Department
Food and Agriculture Organization of the United Nations

Forest Resources Assessment Working Paper

Proceedings
of the
Technical Meeting of the National
Correspondents
Global Forest Resources Assessment 2010

April, 2008

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Abbreviations

CBD	Convention on Biological Diversity
CGRFA	Commission on Genetic Resources for Food and Agriculture
CIFOR	Center for International Forestry Research
COFO	Committee on Forestry
COP	Conference of the Parties
CRF	Common Reporting Format
EFI	European Forest Institute
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FGR	Forest Genetic Resources
FRA	Global Forest Resources Assessment
FTE	Full time equivalent
GAFAG	German Air Force Assistance Group
GDP	Gross Domestic Product
GEF	Global Environment Facility
GEO	Group on Earth Observations
GHG	Greenhouse Gases
GOFC-GOLD	Global Observation of Forest and Land Cover Dynamics
IFF	Intergovernmental Forum on Forests
IPCC	Intergovernmental Panel on Climate Change
ITTO	International Tropical Timber Organization
IUCN	The World Conservation Union
JRC	EU Joint Research Centre
LADA	Land Degradation Assessment in Drylands
LFCC	Low Forest Cover Countries
LULUCF	Land Use, Land-Use Change and Forestry
MCPFE	Ministerial Conference for the Protection of Forest in Europe
NASA	National Aeronautics and Space Administration
NC	National Correspondent
NIR	National Inventory Report
NFMA	National Forest Monitoring Assessment
ODA	Overseas Development Assistance
OWL	Other Wooded Land
PFE	Permanent Forest Estate
REDD	Reducing Emission from Deforestation and Forest Degradation
RSS	Remote Sensing Survey
SDSU	South Dakota State University
SOFO	State of the World Forest
SBSTA	Subsidiary Body on Scientific and Technological Advice
SFM	Sustainable Forest Management
TBFRA	Temperate and Boreal Forest Resources Assessment
TOF	Trees Outside Forest
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNEP-WCMC	United Nations Environment Programme - World Conservation Monitoring Centre
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
USGS	US Geological Survey
WB	World Bank
WFC	World Forestry Congress
WRI	World Resources Institute
WSSD	World Summit on Sustainable Development
WWF	World Wide Fund for Nature

Introduction

The Technical Meeting of the National Correspondents to the Global Forest Resources Assessment 2010 (FRA 2010) took place at FAO HQ in Rome on 3-7 March 2008. It was organized by FAO and co-sponsored by the International Tropical Timber Organization (ITTO). All officially nominated National Correspondents to FRA 2010 and partner organizations were invited to the meeting, as were relevant FAO HQ and regional staff.

Background to FRA 2010

Global forest resources assessments have been carried out by FAO since 1946. The mandate to carry out these assessments stems both from the basic statutes of FAO and the Committee on Forestry (COFO). Global forest resources assessment reports have been published at periodic intervals of five to ten years. The latest of these reports, FRA 2005, was published in early 2006.

The Global Forest Resources Assessment 2010, or FRA 2010, was mandated by the eighteenth session of COFO (March 2007) and consists of two main components:

- A country reporting process, where countries are requested to submit country reports to FAO, following a standardized reporting format and methodology.
- A complementary remote sensing assessment, aiming at obtaining better information of forest change processes on global, regional and biome level.

Furthermore, there will be a number of special studies linked to FRA 2010, covering specific issues, and some data will be provided by partner organizations.

The key milestones of the country reporting process for FRA 2010 are outlined below to give an overview of the process and the deadlines.

Milestone / Activity	Tentative date	Comments
Global meeting of National Correspondents (Rome)	3-7 March 2008	Launch of the FRA 2010 country reporting process. Training of National Correspondents and work on national reporting tables.
Regional and sub-regional workshops	April 2008 – Early 2009	Further training of national correspondents, technical assistance and review of draft country reports.
Deadline for submission of country reports	March 2009	
Validation of final country reports	July-August 2009	Official request for validation of the final country reports will be sent to countries.
Launch of FRA 2010 Key Findings	April 2010	
Launch of FRA 2010 Main report	December 2010	
Final report of FRA 2010 Remote Sensing Survey	October 2011	

For more details regarding the Global Forest Resources Assessment Programme, please visit the FRA Website at: www.fao.org/forestry/fra.

Objectives of the meeting

- Officially launch FRA 2010;
- Provide information and knowledge to National Correspondents on the FRA 2010 process including country reporting, special studies and the Remote Sensing Survey;
- Provide an opportunity for the National Correspondents to review in detail the FRA 2010 reporting tables, to clarify technical issues and give feedback to FRA Secretariat on the support needed to fulfil the national reporting requirements for FRA 2010;
- Plan regional meetings and other activities to support the implementation of FRA 2010;
- Reinforce the National Correspondents Network as a dynamic network of experts on assessment, monitoring and reporting.

Key outcomes

- The Global Forest Resource Assessment 2010 was officially launched at a meeting in Rome from 3-7 March 2008, sixty years after the publication of the results of FAO's first Global Forest Resources Assessment.
- A total of 265 forest assessment specialists attended including representatives from 154 countries and 14 key forest related organizations: the Convention on Biological Diversity (CBD), the European Forest Institute (EFI), the EU Joint Research Centre (JRC), the Food and Agriculture Organization of the United Nations (FAO), German Air Force Assistance Group (GAFAG), the International Tropical Timber Organization (ITTO), Jena University Germany, South Dakota State University USA, the United Nations Economic Commission for Europe (UNECE), the United Nations Environment Programme – World Conservation Monitoring Centre (UNEP-WCMC), the United Nations Forum on Forest (UNFF), the United Nations Framework Convention on Climate Change (UNFCCC), World Bank (WB) and World Resources Institute (WRI).
- FRA 2010 will be the most comprehensive global forest resource assessment undertaken to date and will include a number of new initiatives including a remote sensing survey using satellite data to produce global and regional tree-cover maps and a more consistent and detailed assessment of changes in forest areas over time.
- To date, 175 countries have responded to FAO's request to officially nominate a National Correspondent to FRA 2010.
- The meeting provided countries with an opportunity to learn more about the FRA reporting tables and to ask questions about the tables and the reporting process.
- Follow-up meetings with countries on a regional basis will be done over the next 12 months to provide capacity building and further opportunities for clarifications and to conduct a review of countries' data.
- Ten proposed Special Studies were presented at the meeting as potential work to be done as part of the FRA process.
- The first meeting of a Remote Sensing Task Force, comprising around 20 large countries, was held.

Summary report

Organization of the technical meeting

The technical meeting consisted of 5 plenary sessions and two working group sessions on the main FRA reporting tables and a special 2-day Task-Force meeting on the Remote Sensing Survey (RSS). The summary report follows the agenda items in chronological order.

Monday 3 March

Opening session

Mr Jan Heino, Assistant Director-General, FAO Forestry Department, formally opened the Meeting (Annex 3.1). He welcomed participants and highlighted that forests are important for a variety of reasons and that their sustainable management require on-going monitoring and assessment of trends that can measure progress in protecting, conserving and using forest resources in a wise and sustainable manner. He expressed his gratitude to the large number of forest-related organizations that have helped shape FRA 2010 and who will either help FAO to implement FRA 2010, provide complementary data through their own efforts or help further disseminate the knowledge generated through this process. He noted that this year FAO celebrates the 60th anniversary of the publication of the results of its first Global Forest Resources Assessment. He further noted that the support offered to FAO for FRA 2010 has been overwhelming. He informed the meeting that to date, 175 countries have responded to FAO's request to nominate a National Correspondent to FRA 2010. He also thanked organizations and countries for the in-kind contributions and extra-budgetary funding provided to help carry out FRA 2010, with special thanks to Australia, Finland, National Aeronautics and Space Administration (NASA), European Union (EU), Global Environment Facility (GEF), the German Aerospace Centre and ITTO.

Presentation of key partner organizations and objective and agenda of the meeting

Mr Wulf Killmann, Director of the Forest Products and Industries Division, introduced representatives of the key partner organizations and outlined the agenda and objectives of the meeting (Annex 4.1) which included:

- The official launch of the FRA 2010 process;
- Provision of information and knowledge to National Correspondents on the FRA 2010 process including the country reporting, special studies and the Remote Sensing Survey;
- Provision of the opportunity for the National Correspondents to review in detail the FRA 2010 reporting tables and clarification on technical issues and provision of feed back to the FRA Secretariat on the support needed to fulfil the national reporting requirements for FRA 2010;

- Planning regional meetings and other activities to support the implementation of FRA 2010 and;
- Reinforcement of the National Correspondents Network as a dynamic network of experts on forest assessment, monitoring and reporting.

National views and expectations

Ten countries (The USA, The Republic of Congo, Argentina, Japan, Costa Rica, Benin, Panama, Nicaragua, Angola and Honduras) made comments and statements. They appreciated the initiative and thanked FAO for the opportunity to participate in the meeting, expressed their national views and reported on the forest situation in their countries. A number of countries highlighted the importance of conducting periodical assessments and of supporting national capacity building and emphasized the importance of having a network of National Correspondents. A general remark was related to the importance of reinforcing synergies for data collection, both at global level between FRA and other international reporting processes and at regional, sub-regional and national level between the countries and between different institutions within the countries. The creation of a team of national experts within the country was a common recommendation and at the same times a concern for countries where there is a lack of communication between the different institutions working with forest-related issues.

The linkages with other international reporting processes

The linkages between FRA and other international reporting processes were emphasized by statements and presentations made by six international organizations: ITTO, CBD, UNFCCC, UNFF, UNECE, the World Conservation Union (IUCN) and Jena University.

Mr Wulf Killmann read a statement from Mr Emmanuel Ze Meka, Executive Director, ITTO who recognized the importance of FRA to the global forest community. He also drew attention to the fact that the assessment of forests and forest management is a key issue in the global arena and that FRA will help to meet some of the international forest information needs (Annex 4.2).

Mr Tim Christophersen, from the CBD Secretariat informed the participants about the 2010 Biodiversity Target of the CBD. He underscored that the FRA 2010, including the global remote sensing survey, will be the main data source for assessing progress towards the 2010 target with regard to forest ecosystems (Annex 4.3).

Ms Maria Sanz-Sánchez from the UNFCCC Secretariat informed participants about the reporting requirements of the Land Use, Land-Use Change and Forestry (LULUCF) Sector under the UNFCCC and the Kyoto Protocol (Annex 4.4).

Ms Ghazal Badiozamani, Secretariat of the UNFF, briefed the participants on the reporting requirements related to the Global Objectives on Forests and existing and potential linkages with the FRA process (Annex 4.5).

Mr Christopher Prins, UNECE/FAO Timber Section, gave a presentation on the UNECE and the regional cooperation with FAO and recent FRA relevant actions in Europe (Annex 4.6).

Ms Mette Wilkie, FAO, read a statement from IUCN, which stressed that the information collected for FRA 2010 and FAO's contribution to the harmonization of reporting on forests as well as the network of National Correspondents are very important achievements (Annex 4.7).

Mr Martin Herold, Jena University, informed the participants on the Group on Earth Observations (GEO) and linkages with FRA 2010 (Annex 4.8).

Overview of the FRA 2010 process

Ms Mette Wilkie, FAO, provided an overview of the FRA 2010 process and its components, including the country reporting process, the remote sensing survey and the proposed special studies (Annex 4.9). She highlighted the indicators in FRA 2010 that are relevant for UNFF and CBD, and she also briefed the participants on the timeline for the FRA 2010 process and the partner organizations involved.

Introduction to the country reporting process and the national reporting tables

This plenary session started with two presentations. In the first presentation, Mr Lars Gunnar Marklund, FAO, informed the participants about the FRA 2010 country reporting process including an overview of the scope of the reporting tables, role of the National Correspondents and the process for elaborating and reviewing the country reports (Annex 4.11). In the second presentation, Mr Örjan Jonsson, FAO, introduced the methodology for country reporting to FRA 2010 including the necessary steps to compile the country reports for FRA 2010 (Annex 4.12). This was followed by more detailed technical presentations on the 17 reporting tables for FRA 2010 covering the rationale, contents, format, time series and any related issues (Annex 4.13). Each reporting table was introduced by an FAO member, responsible for the topic covered by the specific reporting table.

Ms Mette Wilkie, FAO, presented the national reporting table T1- Extent of forest and other wooded land. There were no interventions from the floor.

Ms Francesca Romano, FAO, introduced national reporting table T2 - Forest ownership. Seven countries commented on this reporting table (Mexico, Nicaragua, Pakistan, USA, Nigeria, France and South Africa). Most of the comments were related to the difficulties in gathering data to fill in this table, since many countries lack a cadastre or formal registration of ownership of forest resources and others may have complicated land tenure regimes which are difficult to categorize. Mr Christopher Prins representing the UNECE/FAO Timber Section acknowledged these difficulties but highlighted the importance of assessing the ownership and management of forest resources and urged countries to make a serious attempt to fill in at least the main categories of this table.

Mr Froylan Castañeda, FAO, presented the following tables: T3a - Primary designated functions and T3b - Special designation and management categories. The latter table include a number of new variables to meet the reporting requirements to CBD, UNFF and ITTO. Twelve countries made comments (France, Niger, Serbia, The Republic of Congo, Mali, Nigeria, Spain, Zimbabwe, Guinea, Lebanon, Zambia, and Swaziland). Most frequent issues were the difficulties in assessing the area under Permanent Forest Estate (PFE) and that the category “Other wooded land” was not covered in the table. Another general issue related to the possible overlap when defining different functions of forests.

The FRA secretariat stressed that very few countries were able to report on the designated functions of Other wooded land for FRA 2005 but that voluntary reporting on this would be most welcome. Further guidance on the reporting of PFE will be provided.

Mr Jim Carle, FAO, presented national reporting tables: T4a -Characteristics, T4b - Special categories and T5 - Forest establishment and reforestation. Nine countries commented on these tables (Spain, Senegal, Mongolia, France, Togo, Lebanon, Guinea, Uganda and Madagascar). The main issues related to guidance on the time scale to be applied for the interpretation of the definitions for: primary forest, afforestation and reforestation.

The FRA secretariat explained that with regard to the definition of reforestation, there is no fixed-time limit. However an indicator of the time scale is included in the definition of forest in table T1, where it is stated that forest also includes areas that are temporarily unstocked and which are expected to be regenerated within 5 years.

Mr Lars Gunnar Marklund, FAO, presented national reporting tables: T6a -Growing stock, T6b - Growing stock of the 10 most common species, T7 - Biomass stock and T8 - Carbon stock. Eight countries raised their concern (Ireland, India, The Republic of Congo, Burkina Faso, France, Nigeria, Zimbabwe and Guinea). Common issues were the lack of reliable data on growing stock, especially for the natural forests. Many countries also expressed the difficulties in estimating carbon in soil and litter and expressed their concern regarding the use of international default values, suggesting instead that FAO support national studies to derive national figures. Further, improved communication with the climate change focal points within the countries was also recommended.

Tuesday 4 March

The national reporting tables (continued)

Mr Petteri Vuorinen and Mr Lars Gunnar Marklund, FAO, presented the national reporting tables: T9a - Forest fires, T9b - Proportion of planned fires and wildfires in forest, T10a - Other disturbances affecting forest health and vitality, T10b - Major outbreaks of insects and diseases affecting forest health and vitality and T10c - Area of forest affected by woody invasive species. Ten countries made a comment on T9 and T10 (The Republic of Congo, Burkina Faso, Liberia, Ivory Coast, Pakistan, Madagascar, Rwanda, Argentina, St. Lucia and Nepal). Data availability was a common concern especially for fires occurring outside forests and clarifications on the definitions of invasive species and of planned fire were also sought. Other questions were whether “slash and burn” should be considered as a planned fire and whether a minimum threshold for accounting an area affected by fire existed. Participants

also asked if human encroachment should be considered a disturbance since it affects the health and vitality of the forests. The UNECE raised the issue of how to include and interpret defoliation data collected in Europe.

The FRA secretariat replied that it is up to the countries to decide the minimum size of area burnt by fire to be taken into account. Further, “slash and burn” should be considered “planned fire” unless they escape, in which case they should be considered wildfires. Human disturbances should not be reported on in table T10.

Mr Felice Padovani and Mr Paul Vantomme, FAO, presented national reporting tables: T11 - Wood removals and value of removals and T12 - Non-wood forest products removals and value of removals. Eighteen countries commented on T11 and T12 (Ireland, Malawi, Cap Verde, Australia, Nigeria, Mali, Niger, Tunisia, Philippines, Spain, Serbia, St. Lucia, Ivory Coast, Bangladesh, Lebanon, Swaziland, Bulgaria and Senegal). A main concern was the unrecorded removals of wood and non wood forest products. A question was raised on which point in the “value chain” the reported value should refer to as many countries do not have records on value at the border of the forest. Value expressed in national currency was also an issue for countries with uncertain and unstable economic and/or political situation. Countries also asked whether eco-tourism, non wood forest products coming from agroforestry systems and hunting occurring outside forest areas should be reported in T12.

The FRA secretariat replied that ecotourism should not be considered for the purposes of T12, but if a country considers it to be an important added value it can always be reported in the comments section.

Mr Arvydas Lebedys, Mr Jean-Louis Blanchet, Mr Pieter van Lierop and Mr Adrian Whiteman, FAO, introduced the national reporting tables T13 - Employment, T14 - Policy and legal framework, T15a - Institutions, T15b - Human resources, T16 - Education and research, T17a - Forest revenues and T17b - Public expenditure in forest sector by funding source. Time did not allow for questions from the floor but the participants were asked to take note of any questions or comments and bring these to the working group sessions.

Country experiences

Mr Paul Lane, National Correspondent of New Zealand, and Mr Souylemane Gueye National Correspondent of Senegal, presented their experiences –both in terms of compiling the country reports and in terms of how they organized their work (Annex 5.1 and 5.2). They concluded that it is important to identify early in the process the areas which pose the greatest challenges and to build networks of experts and key data providers and involve them in the process from the start.

The first working group session

Ms Laura Russo, FAO, introduced the first working group session on the national reporting tables. The objective of which was to ensure a proper understanding of how to compile the country reports. The tasks of the working groups were to identify and discuss issues/questions related to the general reporting methodology and the 17 national reporting tables. The composition of each group and main discussions and outcomes are summarized as group reports (Annex 8.2-8.10). These reports were then compiled by the FRA secretariat. The participants spent Tuesday afternoon and Wednesday morning in the working groups.

Wednesday 5 March

First working group session continued.

Thursday 6 March

Outcomes of the first working group session

Mr Lars Gunnar Marklund, FAO, presented a summary of the first group work session focusing on common questions and issues raised (Annex 6.1). A list of frequently asked questions will be compiled and made available on the FRA Website, addressing all questions and comments raised in the ten working groups.

Harmonizing international forest related reporting: ITTO and the FRA

Mr Steve Johnsson (ITTO) informed the participants on recent achievements regarding the harmonization of international forest related reporting (Annex 6.2). He mentioned the streamlining on forest reporting of the Collaborative Partnership on Forests and the role of FRA as a harmonization framework. He further presented the status of tropical forest management recently prepared by ITTO and its information base. He explained the relevance of FRA data to ITTO's indicators and elaborated on the possibility of increased collaboration between ITTO and FRA.

Support to National Forest Assessments

Mr Mohamed Saket, FAO, introduced the participants to how the Forestry Department of FAO assists member countries to set up national forest monitoring and assessment systems (Annex 6.3). He outlined the methodology applied and highlighted the advantages of carrying out this type of assessment.

The FRA 2010 Remote Sensing Survey

There were several presentations to the plenary meeting summarising the Remote Sensing Survey component of FRA 2010. These included summaries of the discussions held in the 2-day meeting of the Task Force that was held as a side-meeting to the main FRA meeting. A summary of the presentations to plenary is provided below and more details can be found in the Task Force report in Annex 9.

Mr Adam Gerrand, FAO, briefed the participants on the FRA 2010 Remote Sensing Survey, which is designed to complement the country reporting process to give a better picture of land use dynamics such as deforestation, afforestation and natural expansion of forests, together with useful information on the distribution of tree-cover and on changes in area over time at regional, biome and global levels (Annex 6.4).

Mr John Latham, FAO, made a presentation on the evaluation of methodologies for the FRA 2010 Remote Sensing Survey (Annex 6.5). He briefly informed the participants on the general methodology that will be applied for the survey and the activities which are planned to gather relevant data. He also informed the participants on the Information Gateway, an integrated Web based system to manage data and information related to the survey.

Mr Federic Achard from the Joint Research Centre of the European Commission, presented the activities that his organization is carrying out in support of the FRA 2010 Global Remote Sensing Survey (Annex 6.6).

Mr Matthew Hansen from the South Dakota State University, which is another partner supporting the Remote Sensing Survey for FRA 2010, informed the participants on the new technology for forest cover mapping developed by remote sensing scientists based on MODIS imagery at a resolution of 500 and 250 m (Annex 6.7).

Mr Ernesto Diaz, from Mexico, presented a summary report of the Remote Sensing Survey Task Force (Annex 6.8) which had taken place over the previous two days. He informed the participants that the Task Force consists of 20 countries with a wide range of geographical coverage (together accounting for 80 percent of the world's forests) and that the Task Force was established to provide country knowledge and expert information to guide the FRA 2010 Remote Sensing Survey and also to discuss related technical and implementation issues. He then briefed the participants on the main points raised and technical issues discussed in the 2-day Task Force side meeting.

World Forestry Congress

Mr Olman Serrano, FAO, presented the XIIIth World Forestry Congress (WFC), which will be held in Buenos Aires (Argentina) from 18 to 25 October 2009. The congress is being organized by the Government of Argentina in collaboration with the FAO Forestry Department and its main objective is to provide a forum for the exchange of experiences and for discussions on topics related to forestry activities, involving forestry professionals and other interested people from all over the world.

The second working group session

Ms Mette Wilkie, FAO, introduced the second working group the tasks of which were to: prepare a draft work plan for the elaboration and submission of country reports, suggest possible date(s) and place(s) for regional and sub-regional workshops aimed at reviewing draft country reports and to discuss the remote sensing survey.

Second working group session

The participants spent Thursday afternoon in the ten working groups.

Friday 7 March

Outcomes of the second working group session

Mr Lars Gunnar Marklund and Adam Gerrand, FAO, informed the participants about the outcomes from the second working group session. They presented suggested dates and places of regional/sub-regional workshops to be organized in 2008 (Annex 7.1). They further presented a range of general and technical issues raised related to the implementation of the FRA 2010 Remote Sensing Survey and provided clarifications (Annex 7.2).

Potential special studies related to FRA 2010

In this session a number of potential special studies were presented to the participants. The studies will be led by specialists within FAO or by other organizations and will need separate funding. The FRA National Correspondents are not expected to be the key focal point for these studies but rather to help identify national experts in the different fields covered by the special studies. Participants were asked to fill in a short questionnaire to help prioritize these and to indicate the availability of information relevant to these studies.

Mr Oudara Souvannavong, FAO, introduced the rationale, the content and the objectives of the FRA 2010 special study on Forest Genetic Resources (Annex 7.3).

Ms Michelle Gauthier, FAO, presented a proposed outline of the FRA 2010 Special Study on Trees Outside Forests (ToF) which will be carried out with the objective of assessing and monitoring of trees outside forests (Annex 7.4).

Mr Miguel Trossero, FAO, presented the FRA 2010 Special Study on Wood Energy, whose main objective is to carry out special wood energy surveys in selected countries to improve the reliability of wood energy statistics, which currently are often affected by discrepancies in reported values, inconsistencies in terminology and definitions and differences in measurement units (Annex 7.5).

Mr Jean-Louis Blanchet, FAO, presented the FRA 2010 Special Study on Forest Policy, Legal and Institutional Framework, which is aiming at improving the understanding of the relationship between the national and sub national level in terms of forest policy formulation and implementation, legal and institutional frameworks (Annex 7.6).

Ms Rosalie Mc Connell, FAO, presented two FRA 2010 Special Studies: one on Forests and Poverty and the other on Forestry and Livelihoods (Annex 7.7). The first aims to link information on population and household expenses with data on ecosystems and their services to show how land, people and prosperity are connected. This knowledge can be used to make better use of natural resources when developing programmes to reduce poverty and designing policies to improve water resource management, agriculture production, conservation of biological diversity, and charcoal production, for example. The second study is based on findings from the FAO study on linkages between forestry and poverty reduction in Africa which confirmed that gaps in information on the importance of forestry to national development and rural livelihoods place the sector at a serious disadvantage when negotiating budget levels (Annex 7.8). It therefore aims to strengthen collaboration with national statistics offices to collect and analyze better data to build a case for more financial and technical support.

Ms Mette Wilkie, FAO, presented the rationale of the proposed FRA 2010 Special Study on Forest degradation, which is designed to identify different parameters of forest degradation and best practices for assessing these (Annex 7.9).

Mr Matt Walpole, UNEP-WCMC, informed the participants about three special studies being undertaken by UNEP-WCMC (Annex 7.10). These include studies to develop indicators of forest fragmentation and sustainable use, the latter focusing on the extent of forest certification. A third study, in collaboration with WWF and WRI, is exploring the extent of protection of different forest types and gaps in global forest protected area coverage. All three studies are helping to track progress towards the CBD target of achieving a significant reduction of the current rate of biodiversity loss by 2010.

Mr Simon Gillam, National Correspondent for United Kingdom, proposed a special study on Forests and climate change (Annex 7.11). It would include a review of the interactions identified in literature and other studies, establishment of an analytical framework including economic valuation of costs and benefits, assessing the feasibility of compiling country data and demonstrating the analysis through country case studies.

UNECE, welcomed and supported the proposed FRA special studies on: policies and institutions, wood energy statistics and forests and climate change and noted that the proposed special study on forest policies and institutions builds on the work initiated in the framework of the Inter-Secretariat Coordination Group on Policies and Institutions where global and regional information is being exchanged. Further, the UNECE encouraged other organizations and networks involved in the monitoring of forest policies and institutions to join this initiative.

Senegal commented that the forest sector contribution to GDP is an important issue in Africa and that its contribution is often underestimated.

Closing of the meeting

Mr Wulf Killmann, Director of the Forest Products and Industries Division, FAO, concluded the meeting with words of support and appreciation. He recognized that the technical meeting had been very productive and thanked all participants for their hard work and dedication. He informed the participants that a total of 265 participants from 154 countries and 14 forest related organizations had participated in this meeting and noted that this provides the FRA process with very strong links to countries and forest related organizations. He further explained that FAO stands ready to provide any technical assistance needed to fulfil the important tasks ahead. He thanked ITTO for co-sponsoring the meeting and the presenters, chairs of the plenary sessions and the working groups, facilitators, note takers and rapporteurs for their work during the week.

Questionnaires and evaluation of the meeting

The participants were asked to complete four questionnaires with information on:

1. Data availability for for FRA 2010 reporting and status of national data.
2. Draft national work plan for the elaboration and submission of the country reports to FRA 2010.
3. Evaluation questionnaire of the meeting.
4. Priority ranking for the potential FRA 2010 special studies.

The evaluation questionnaire showed that in general the meeting was rated to be “good” or “very good” by 99% of the respondents (50% and 49% of the responses respectively), and 88% of the respondents found that, on balance, the meeting objectives were fully achieved and 11% that they were partially achieved.

The questionnaire on the priority rating for the potential FRA 2010 special studies showed that the five highest ranked special studies were: Forest and Climate Change, Forest degradation, Wood energy, Forests and poverty, Forests and livelihoods. These results however, need to be balanced with considerations related to data availability in the countries. The overall results of this questionnaire are as follows (102 replies in all):

Name of Study	Votes	%
Forest and Climate Change	68	67%
Forest degradation	58	57%
Wood energy	42	41%
Forests and poverty	41	40%
Forests and livelihoods	40	39%
Trees outside forests	38	37%
Forest fragmentation	33	32%
Forest policy, legal and institutional framework	32	31%
Forest in protected area (maps)	29	28%
Forest and medicinal plants	27	26%
Forest certification	25	25%
Forest genetic resources	24	24%

Annexes

Annex 1: Meeting Agenda



INTERNATIONAL TROPICAL TIMBER ORGANIZATION

Technical Meeting of the National Correspondents

Global Forest Resources Assessment 2010

Rome, Italy, 3 -7 March 2008

TIMETABLE

Monday, 3 March Morning	Plenary Session <i>Chair: Mr W. Killmann</i>	<i>Red Room</i> Building A, 1st Floor
08.00 - 9.30	Registration of Participants	<i>Turkish Registration Centre</i> Building A, Main Entrance
	Coffee	<i>Belgian Lounge</i> Building A, 3rd floor
09.30 - 10.15	Opening Session Welcoming remarks by <i>Mr J. Heino, ADG FAO Forestry Department</i> Presentation of key partner organizations	
10.15 - 10.30	Objectives and agenda of the meeting	
10.30 - 10.45	National views and expectations	
10.45 - 11.45	Linkages with other international reporting processes <i>Statement from ITTO</i> <i>Mr T. Christophersen, Secretariat of the Convention on Biological Diversity</i> <i>Ms M. Sanz-Sanchez, Secretariat of the United Nations Framework Convention on Climate Change</i> <i>Ms G. Badiozamani, Secretariat of the United Nations Forum on Forests</i> <i>Mr C. Prins, United Nations Economic</i>	

	<i>Commission for Europe- Timber Section Statement from IUCN Mr M. Herold, Jena University</i>	
11.45 - 12.15	Overview of the FRA 2010 process <i>Ms M. Wilkie</i>	
12.15 – 12.30	Information to participants on practical and administrative matters <i>Ms L. Russo, FAO</i>	
12.30 – 14.00	Lunch break	
Monday, 3 March Afternoon	Plenary Session <i>Chair: Ms M. Wilkie</i>	Red Room Building A, 1st Floor
14.00 – 17.00	Introduction to the country reporting process and the national reporting tables <i>Mr L. G. Marklund and other FAO staff</i>	
15.15- 15.45	Coffee break	Belgian Lounge Building A, 3rd floor
Monday, 3 March Evening		
18.00	Cocktail hosted by <i>Mr J. Heino, ADG FAO Forestry Department</i>	Aventino Room 8th floor
Tuesday, 4 March Morning	Plenary Session <i>Chair: Mr L. G. Marklund</i>	Red Room Building A, 1st Floor
09.00 - 11.15	National reporting tables (cont'd)	
10.00 – 10.30	Coffee break	Belgian Lounge Building A, 3rd floor
11.15 - 11.45	Country experience <i>Mr P. Lane, New Zealand Mr S. Gueye, Senegal</i>	
11.45 – 12.00	Introduction to the Working Group Session <i>Ms L. Russo, FAO</i>	
12.00 – 14.00	Lunch break	
Tuesday, 4 March Afternoon	Working group Session	Various meeting rooms
14.00 – 17.00	Regional working groups on national reporting tables	
15.15- 15.45	Coffee break	Belgian Lounge Building A, 3rd floor

Wednesday, 5 March Morning	Working group Session	Various meeting rooms
09.00 - 12.00	Regional working groups on national reporting tables	
10.00 – 10.30	Coffee break	Belgian Lounge Building A, 3rd floor
Wednesday, 5 March Afternoon		
	Free time for participants, compilation of notes by working group rapporteurs	
Thursday, 6 March Morning	Plenary Session Chair: Ms M. Wilkie	Red Room Building A, 1st Floor
09.00 - 10.15	Short presentation of the outcome of the working group sessions and discussion on main issues arising from regional groups <i>Mr L.G. Marklund, FAO</i> Harmonizing international forest related reporting: ITTO and FRA <i>Mr S. Johnson, International Tropical Timber Organisation</i>	
10.15 – 10.45	Coffee break	Belgian Lounge Building A, 3rd floor
10.45 – 11.00	Support to National Forest Assessments <i>Mr M. Saket</i>	
11.00– 11.50	The FRA 2010 Remote Sensing Survey <i>Mr A. Gerrand, FAO</i> <i>Mr J. Latham, FAO</i> <i>Mr F. Achard, JRC</i> <i>Mr M. Hansen, SDSU</i> <i>Ernesto Diaz, Mexico</i>	
11.50 – 12.00	XIII World Forestry Congress <i>Mr O. Serrano, FAO</i>	
12.00 – 14.00	Lunch break	
Thursday, 6 March Afternoon	Working group Session	Various meeting rooms
14.00 – 17.00	Regional working groups: Workplanning including implementation of the remote sensing survey	
15.15- 15.45	Coffee break	Belgian Lounge Building A, 3rd floor

Friday, 7 March Morning	Plenary Session <i>Chair: Ms M. Wilkie</i>	Red Room Building A, 1st Floor
09.00 - 10.00	Short presentation of the outcome of the working group session Dates of regional and sub-regional workshops <i>Mr L.G. Marklund, FAO</i> <i>Mr A. Gerrand, FAO</i> 2010 Biodiversity Indicators Partnership <i>Mr M. Walpole, UNEP- World Conservation Monitoring Centre</i>	
10.00 – 10.30	Coffee break	Belgian Lounge Building A, 3rd floor
10.30 - 11.30	Potential special studies related to FRA 2010 State of the World Forest Genetic Resources: <i>Mr O. Souvannavong, FAO</i> Trees outside forests: <i>Ms M.. Gauthier, FAO</i> Wood Energy: <i>Mr Trossero, FAO</i> Forest policy, legal and institutional framework: <i>Mr J-L. Blanchez, FAO</i> Forests and poverty: <i>Ms R. McConnell, FAO</i> Forests and livelihoods: <i>Ms R. McConnell, FAO</i> Forest degradation: <i>Ms M. Wilkie, FAO</i> Forest certification, forest fragmentation and forests in protected areas: <i>Mr M. Walpole, UNEP- World Conservation Monitoring Centre</i> Forests and climate change: <i>Mr S. Gillam, United Kingdom</i>	
11.30 – 12.00	Concluding discussion Closing of the meeting <i>Mr W. Killmann</i>	
Friday, 7 March Afternoon		
14.00 – 17.00	7th Meeting of the FRA Advisory Group	Canada Room Building A, 3rd floor – A356

Annex 2: List of Participants

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Annex 3: Plenary presentations and statements (Monday 3 March)

Annex 3.1: Opening remarks

Mr Jan Heino

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Mr Chair, Excellencies, Distinguished Permanent Representatives to the FAO, Dear participants, colleagues, Good morning!

It is my pleasure and privilege to welcome you all to FAO and to this Technical Meeting of the National Correspondents to the Global Forest Resources Assessment 2010. I am very pleased to see so many familiar faces, but above all to see so many new ones. I hope to be able to talk with many of you during the week ahead of us.

No doubt, all of us in this meeting have high expectations of the world's forests. For us forests are important for a number of reasons. They are to provide raw materials and energy, maintain biological diversity, mitigate climate change, protect land and water resources, provide recreational facilities, improve air quality and help alleviate poverty.

At the same time, forests are affected by fire, air pollution, pest and invasive species – and are the primary targets in many countries for agricultural and urban expansion. Competing interests in the benefits offered by forest resources and forest lands are omnipresent and the need for a sound basis for analysis and conflict resolution has never been greater.

This requires on-going monitoring and assessment of trends that can measure progress in protecting, conserving and using forest resources in a wise and sustainable manner. FAO's Member Countries have entrusted the Forestry Department with the organization and promotion of this important task.

This year FAO celebrates the 60th anniversary of the publication of the results of its first Global Forest Resources Assessment – the Forest Resources of the World. This survey, which was started in 1946, was based on a questionnaire sent to all countries of which 101 responded, representing 66 percent of the world's forests.

As stated in the report, “a comprehensive inventory of the world's forests requires a truly international approach, entailing international acceptance of definitions as well as concerted and sustained efforts to encourage completion of adequate surveys of those forested areas for which reliable data are lacking.” I think we can all subscribe to these words today, 60 years later.

The Global Forest Resources Assessment 2010 - or FRA 2010 as we call it - will be the most comprehensive and reliable assessment yet. Most comprehensive because it will cover 235 countries and territories and will provide the basis for reporting on progress towards:

1. The Millennium Development Goals;
2. The Convention of Biological Diversity's target of achieving a “*significant reduction of the current rate of biodiversity loss at the global, regional and national level*” by 2010;

3. The Global Objectives on Forests of the Non-legally Binding Instrument on forests recently adopted by members of the United Nations Forum on Forests; and
4. The International Tropical Timber Organizations' Objective 2000.

It will also help countries report on land use and land use change for the United Nations Framework Convention on Climate Change and the Kyoto Protocol.

It will be the most reliable assessment ever, thanks to advances in technology and expanding global communications and to stronger support from countries and forest-related organizations. Within FAO, FRA 2010 will indeed be a cross-divisional and cross-departmental effort.

One of the innovative components of FRA 2010 is a new and ambitious global remote sensing survey which takes advantage of the latest technologies to provide better information on global forest change and the land uses that are replacing forests. You will hear more about this later today and on Thursday.

The support offered to FAO for FRA 2010 has been overwhelming.

One hundred and seventy five countries have responded to our request to nominate a National Correspondent to FRA 2010. I am very pleased to note that most of you, the National Correspondents, are here today. We have more than 220 registered participants from 165 countries and over 10 major forest-related organizations. This provides the FRA process with very strong links to countries and their national efforts to assess and monitor their forests and other wooded land.

We are all very much aware that the requests for information keep increasing. FAO is making strong efforts to help harmonize forest-related reporting with other organizations to avoid duplication of efforts and to reduce the reporting burden on countries. You will hear more about these efforts later today and during the rest of the week. However, we are also fully aware that the task laying ahead for the National Correspondents is not an easy one and we very, very much appreciate the substantial efforts and contributions made by each and everyone of you.

We recently completed a joint meeting of two of the FAO Regional Forestry Commissions: the Near East Forestry Commission and the African Forest and Wildlife Commission. One of the conclusions of this meeting was the following, and I quote:

“The Commissions agreed to provide their national correspondents to FRA 2010 and their teams with the support they needed to prepare the country reports and to participate in the remote sensing survey and any special studies that may cover their countries.”

I am sure the National Correspondents from these two regions are pleased to learn this. I hope we will receive similar commitments from the Heads of Forestry at the meetings of the remaining Regional Forestry Commissions this year. We, at FAO stand ready to provide any technical assistance needed to fulfil your important tasks.

I would also like to extend our gratitude to the large number of forest-related organizations who have helped shape FRA 2010 and who will either help FAO implement FRA 2010, provide complementary data through their own efforts or help further disseminate the knowledge generated through this process. In this respect, allow me to give recognition to the Expert Consultation held in Kotka, Finland in June 2006, to the many bilateral consultations and to the FRA Advisory group. The FRA process is a truly international partnership of individuals, countries and

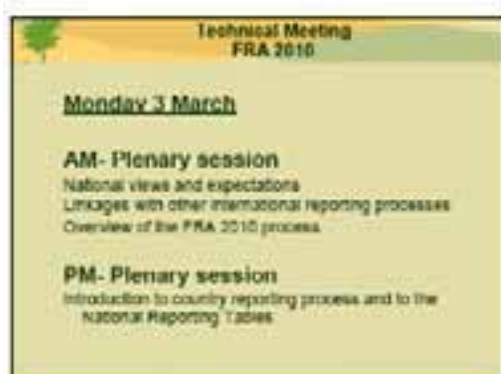
organizations. We express our gratitude to all of those participating in and contributing to this effort.

Last, but certainly not least, I would like to thank for the extra-budgetary funding provided to help carry out FRA 2010. Special thanks go to Australia, Finland, NASA, EU, GEF, the German Aerospace Centre and ITTO. We hope that even more partners and donors will join this process.

Colleagues, you have a challenging programme in front of you this week and over the next couple of years. However, I am personally convinced that given the strong support and the excellent collaboration which is already evident, FRA 2010 will be the best assessment ever.

Thank you.

Annex 3.2: Objective of the meeting and Agenda



Technical Meeting
FRA 2010

Wednesday 5 March

AM- Working groups
National Reporting Tables

PM- Free time (for most participants)
Compilation and analysis of working group reports

Technical Meeting
FRA 2010

Thursday 6 March

AM- Plenary session
Outcomes of the working groups
The FRA 2010 Remote Sensing Survey
Support to National Forest Assessments
XIII World Forestry Congress

PM- Working groups
Regional work planning

Technical Meeting
FRA 2010

Friday 7 March

AM- Plenary session
Short presentation on the outcomes of the Working groups

Potential special studies related to FRA 2010
Closing of the meeting

Annex 3.3: Statement from ITTO



Executive Director, ITTO Technical Meeting of the National Correspondents to the Global Forest Resources Assessment 2010

Mr. Jan Heino, FAO colleagues, ladies and gentlemen,

First of all, I very much regret not being able to present this statement in person to such an important meeting due to ITTO's heavy workload. ITTO will be represented at this meeting later in the week but I sincerely apologize for not being present for the opening session. I appreciate the kind offer of our friends in the FAO Forestry Department to have a brief written statement read on my behalf during the opening session of your meeting.

ITTO appreciates as much as anyone the huge amount of work that goes into the FRA and the importance to the global forest community of such a vital database on all types of forests. We have been users of the FRAs since ITTO came into existence in the late 1980s, and have been more closely involved in the process during the past decade as members of the FRA advisory group and (in a modest manner) as co-sponsors of some FRA related activities such as these meetings of national correspondents. We are pleased once again to be providing a small contribution to an FRA correspondents' meeting and hope that ITTO can further increase its involvement in the FRA 2010 process over the next few years.

The assessment of forests and forest management is a key issue in the global arena today. Fora like CBD, UNFCCC, UNFF (not to mention national governments and our own organizations) are all clamoring for better, more comprehensive information on forests to help them meet their assorted mandates. The international community has been seeking a key, core set of forestry information for assessing forests and their management for almost as long as ITTO has existed. The evolving FRA is helping to meet these and other international forest information needs.

ITTO recently became familiar with the difficulties and costs involved in carrying out large-scale forest surveys, having assessed the status of tropical forest management in 2005. We are pleased to see that the proposals for the data tables for FRA 2010 include criteria and aspects for assessing SFM used in the ITTO study which should allow for greater synergies. ITTO has been asked to carry out a second such assessment for 2010 and preliminary funds have been pledged for this in our 2008-2009 Work Programme. We believe that the most effective way to carry out this work is in close collaboration with FAO and the FRA, and we will be consulting closely with our colleagues in the Forestry Department and interested participants at this meeting to further develop areas for collaboration.

ITTO and the FAO Forestry Department have developed an excellent collaborative relationship in recent years with a range of partnerships and cooperative activities that is too long to list here. A key factor in the establishment of this relationship has been the trust and goodwill that have built up at all levels of both Organizations. ITTO is extremely grateful to all of our colleagues in FAO for facilitating this, and to Mr. Jan Heino for actively promoting such collaboration.

Thank you again for the opportunity to address this important meeting. I wish you every success over the next week.

Annex 3.4: The 2010 Biodiversity Target: CBD Indicators and FRA 2010



2010 Headline Indicators related to forests

- Trends in extent of selected biomes, ecosystems, and habitats
- Trends in abundance and distribution of selected species
- Coverage of protected areas
- Change in status of threatened species
- Area of forest, agricultural and aquaculture ecosystems under sustainable management
- Ecological footprint and related concepts



2010 Headline Indicators related to forests (contd.)

- Trends in invasive alien species
- Connectivity / fragmentation of ecosystems
- Incidence of human-induced ecosystem failure
- Health and well-being of communities who depend directly on local ecosystem goods and services
- Biodiversity for food and medicine
- Indicator of the status of indigenous and traditional knowledge
- Importance of working with ILCs and UNWIS



FRA 2010, including the global remote sensing survey, will be the main data source for the 2010 target with regard to forest ecosystems



The CBD National Reporting Process

3rd National Report: 15 May 2005, 137 received

4th National Report: March 30, 2009
Format: Narrative (with graphics, figures, tables, boxes and pictures)

Broad stakeholder participation at national level in development of national report.



Further information:

www.cbd.int

R.B.T.

Unit for CBD National Reporting Process

• Write National Report (covering national forest biodiversity)

• CBD Decisions, e.g. Programme of Work on Forest Biodiversity and Programmes of Work on Protected Areas

• Publications: cross-sectional tool-kit for forest biodiversity, Rio Convention how-to guides, etc.



Thank you. Gracias. Merci.



Annex 3.5: Reporting requirements of the LULUCF Sector under the UNFCCC and Kyoto Protocol



Reporting Requirements – Cropland

- Pools to report as C stock changes: SOC and living biomass (herennial woody biomass). DOM not required for cropland remaining cropland
- CO₂ emissions from firing
- N₂O emissions from disturbance due to land converted to cropland
- Non-CO₂ emissions from biomass burning on land converted to cropland
- Biomass burning (field burning of agriculture residues) on cropland remaining cropland reported in Agriculture sector



UNITED NATIONS ENVIRONMENTAL PROGRAM

Reporting Requirements – Grassland

- Pools to report as C stock changes: SOC and living biomass. DOM not required for grassland remaining grassland
- CO₂ emissions from firing
- CO₂ and non-CO₂ emissions from burning of grasslands outside the tropics
- CO₂ and non-CO₂ emissions from burning on land converted to grasslands



UNITED NATIONS ENVIRONMENTAL PROGRAM

Reporting Requirements – Cropland and Grassland

- Methodologies, AD and parameters under development for many countries
- If emissions or removals are significant, development of area specific activity data on management activities and land-use changes important for more accurate estimates
- Methodologies for mineral soils need data for period of 20 years or more



UNITED NATIONS ENVIRONMENTAL PROGRAM

Reporting LULUCF activities under the Kyoto Protocol

- Report emissions and removals of CO₂ and other GHG resulting from:
 - Article 3.2 activities – Afforestation, Reforestation and Deforestation
 - Article 3.4 activities – Forest management, Grazing management, Cropping land management and Revegetation
 - Debitors of these activities to assess to Decision 15/CP.1
- Information reported is supplementary to that reported under the Convention
- Parties to report annually during the commitment period. But annual reporting does not imply need for annual measurements



UNITED NATIONS ENVIRONMENTAL PROGRAM

Reporting LULUCF activities under the Kyoto Protocol

- Decision 15/CP.10 adopted a set of CRF tables for reporting of LULUCF activities under Articles 3.2 and 3.4
- Parties submitted on voluntary basis this supplementary information (15 April 2007)
- Based on experiences of use, these CRF tables reviewed at SBSTA-27.



UNITED NATIONS ENVIRONMENTAL PROGRAM

Reporting LULUCF activities under the Kyoto Protocol

- Supplementary information required:
- General information – definitions, descriptions of land definitions such as national communications and related consistency
 - Land-related information – clearly lands subject to 3.2 and 3.4 activities since 1990, spatial assessment and use, maps/databases to identify geographical locations
 - Activity-specific information – methodologies used, uncertainty estimates, size of area of activity
 - Other information – key category analysis
 - Information related to Article 6 (Joint Implementation)



UNITED NATIONS ENVIRONMENTAL PROGRAM

Reporting LULUCF activities under the Kyoto Protocol

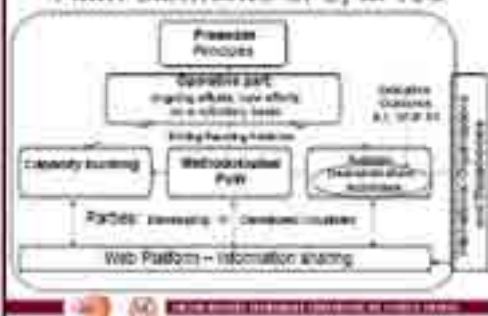
(3 tables of the CRF for LULUCF under the Kyoto Protocol)

- Report on C stock changes in A&B, B&G, H&I; direct and indirect (MRD)
- Report on C stock changes in other pools for each of the selected A&B&G 3.1 activity
- H<D emissions from IF fertilizers (A, B, F&I, I&J) (change of organic/ mineral pools (F&I), disturbance associated with land use conversion to cropland)
- C emissions from land application (at 3.1 and selected 3.2 activities)
- GHG emissions from biomass burning

RED: beyond Bali



Main elements of 2/CP.13



Methodological Programme of Work

REDD

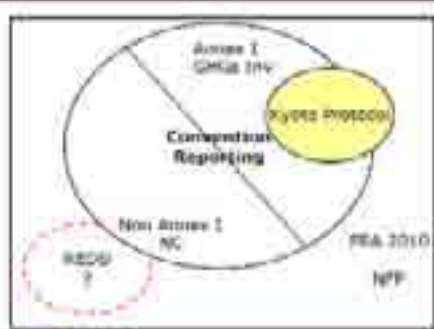
Submission by 21 March 2008, Parties agree on methodological issues, after that:

- assessments of impacts on forest cover and associated carbon stocks and greenhouse gas emissions
- measurement changes due to sustainable management of the forest, demonstration of reductions in emissions from deforestation, including reference emissions levels
- estimation and measurement of reduction in emissions from forest degradation
- estimation of national and subnational opportunities involving deployment of emissions
- criteria for assessing the effectiveness of actions, and criteria for evaluating actions

workshop on methodological issues after SBTAZE

Indicative guidelines for demonstration activities (4/CP.13)

Indicators or systems of measures should be flexible based on demonstration, management, and available, and adjusted consistently over time. Use of the methodology described in IPCC Good Practice Guidelines and the Inventory Reporting Guidelines for Non-Annex I is encouraged as a basis for assessing and accounting activities. Country measures from national demonstration activities should be assessed on the basis of national estimates from demonstration and forest degradation. National demonstration activities should be assessed after the inventory used for the demonstration, and assessed for consistent deployment of emissions. Indicators to determine or measure standing from the demonstration activity should be based on national estimates, taking into account national circumstances. Demonstration activities, where applied, should contribute to a step towards the development of a national approach, national levels and national demonstration systems, and in consistent with sustainable forest management. Type/level of demonstration activities should be reported and made available by the Parties to. Reporting on demonstration activities should include a description of the activities and their effectiveness, and may include other information. Evaluation reports should be encouraged.



Annex 3.6: Reporting on SFM implementation: Existing & potential linkages between UNFF and the FRA Process



Potential steps to enhance linkages



- Selection of indicators from existing parameters
- Proposing indicators for areas not covered yet
- Fine-tuning reporting processes to fit emerging needs

Global Objective on Forests

1. Reverse the loss of forest cover worldwide through SFM, including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation.



Global Objective 1

Possible indicators:

- Reverse the loss of forest cover.
 - area, area change for forest and OVR, (T1), primary forest, planted forests (T4)
 - growing stock (T6), biomass (T7) and carbon stock (T8) and change
- Increase efforts to prevent forest degradation
 - characteristics of forest, change of characteristics (T4)
 - area of degraded forests (Special study)

Global Objectives on Forests

2. Enhance forest-based economic, social and environmental benefits, including by improving the livelihoods of forest dependent people.



Global Objective 2

- Economic
 - Area of forest designated for production (T6)
 - Species and change of removal of wood products (T11)
 - Removal of NWFP (T12)
 - Value and change of value of wood and NWFP removals (T11, T12)
- Social
 - Area of forest designated for social services (T8)
 - Employment in forestry (T18)
- Environmental
 - Area of forest designated for soil and water conservation (T3)
 - Area of forest designated for conservation of biodiversity (T3)

Global Objectives on Forests

2. Increase significantly the area of protected forests worldwide & other areas of sustainably managed forests, as well as the proportion of forest products from sustainably managed forests.



Global Objective 3

Very few globally available indicators for this goal, some possible indicators:

- area of sustainably managed forests (T3)
- area of forests with designated functions (T3)
- Area of protected forests (T3)
- Proportion of products from sustainably managed forests (T7)

Global Objectives on Forests

4. Reverse the decline in ODA for SFM and mobilize significantly increased new and additional financial resources from all sources for the implementation of sustainable forest management.



Global Objective 4

- There are no globally available indicators for this goal
- Indicators needed for
 - Amount of ODA for forestry
 - Amount of new and additional resources for SFM

Possible Strategies

- Consider which of current FRA indicators could be used for Global Objectives
- Consider whether existing indicators used by other processes (ie MCPFE or Montreal Process) might be appropriate to use at global level

Challenges



Issue of qualitative assessment, description of "voluntary national measures policies, actions or specific goals" related to the GOFs

- hyperlegal source (is it a policy, law, mp, strategy, Dp)
- time frame (if applicable)
- short description (general description, provisions relevant to GOFs)
- experiences with implementation

Key messages

- No new additional reporting structures/processes/mechanisms
- National correspondents are invited to consider these issues in their work – these challenges are also opportunities
- An opportunity for the forest resources community to build on the political commitment embodied in the GOFs and NABs – by showcasing progress in these areas

Annex 3.7: UNECE and FRA: half a century of global-regional cooperation

UNECE and FRA: half a century of global-regional cooperation

Dr Peter, Chief
UNECE/FAO Timber Section
UN Economic Commission for Europe

Topics of presentation

- Overview of UNECE/FAO Timber Section
- Recent FRA relevant actions in Europe
- Why should there be global-regional cooperation?
- Next steps

UNECE/FAO Timber and Forestry

- Cooperation between a UN regional commission and the FAO (industry department) since 1950s
- Based on active country participation, and inter-agency partnerships (esp. with MCPFE, forest statistics, joint programmes)
- Five interlinked work areas:
 - Markets and statistics
 - Forest resource assessment
 - Sector multi-stakeholder
 - Socio-cultural aspects
 - Policy and cost studies
- European Forest Week, 20-24 November 2006 (ECE, FAO, ECU, etc.) - a long time since last one!

Recent FRA relevant actions in Europe

- From 1950, regular regional inventories (timber focus)
- 1990: MCPFE criteria and indicators of sustainable forest management: a target set by policy makers
- Regular reporting to Ministerial Conferences
- UNEFA 2000 showed it was possible to report on SPM
- Strengthening institutions for cooperation and consensus: team of specialists, Kofu process, national correspondents ...
- ECE/FAO leads regional work for FRA
- *State of Europe's Forests 2007: the best yet!*

Advantages of global-regional cooperation

- Avoids double reporting, more efficient use of resources
- Coherence of regional and global contextual frameworks (billion-dollar)
- Addresses regional specificity in a global framework
- Global level can get closer to national correspondents and other regional resources
- Regional level can safely ignore areas where the global level takes the lead (e.g. remote sensing)
- Global level has easier access to policymakers (RAC persons)
- Ideas & migrate & from regional to global and vice versa



Disadvantages of global-regional cooperation

- More need for communication and compromise
- Defining the global minimum structure
- Timetabling for regional and global events of equal importance (esp. FRA 2005, MCPFE 2007, FRA 2010)
- None of these outweigh the advantages

Joint Forest Sector Questionnaire

- An example of excellent global/regional cooperation for forest products markets (annual)
- Four organisations: ECE, FAO, Eurostat, ITTO
- One questionnaire and definitions
- Contacts and validation by one organisation only for each country
- Data shared (global level is FAOSTAT)
- Intersessional Working Group meets twice a year: absolutely necessary!




www.ece.org/forestry


Next steps in Europe

- Learn from experience with State of Europe's Forests 2007, especially in policies and institutions, and monitoring GPM (x traffic lights x)
- Train of specialists meets in Vienna in May
- Seek consensus on emerging issues, (e.g. forest types) in good time
- Collect and validate data for European countries in 2004-2005
- Propose relevant information for bioenergy/climate change policy debate (potential wood supply)
- Ask Komarov report: successor being chosen




www.ece.org/forestry


Questions, discussion?

JRL Pirou
 Chief, ECE/FAO Timber Section
 Palais des Nations, Geneva
 Tel: +4122 917 2274
jrl.pirou@unece.org
<http://www.unece.org/trade/forestry>




www.ece.org/forestry


Annex 3.8: Statement from IUCN to launch of FRA 2010



IUCN welcomes this important and ambitious undertaking.

FRA 2010 will provide forest and other land-use practitioners and policy makers at the national and international levels with invaluable information on the distribution and extent of forests and on changes in forest area over time at regional, biome and global levels.

We particularly welcome the extent to which countries have been involved in the design and carrying out of the FRA programme.

The network of national correspondents, which is being brought together in support of this initiative, will if maintained and strengthened carry benefits beyond the FRA programme itself.

IUCN also appreciates the efforts of the FRA programme to take account of and contribute to the harmonization of reporting on forests with other organizations, work on which the FAO has demonstrated leadership within a joint initiative of the Collaborative Partnership on Forests.

Also welcome is the attention being given to making the FRA as relevant and useful as possible to important forest policy arenas such as the CBD and the UNFF.

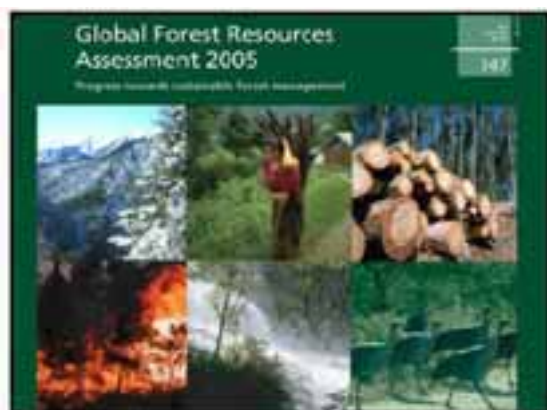
IUCN looks forward to ongoing collaboration with the FAO and wishes the FAO and its many partners great success with this endeavour.

Stewart Maginnis
Head
Forest Conservation Programme
IUCN

Annex 3.9: FRA 2010 and GEO



Annex 3.10: Overview of the FRA 2010 process



FRA 2010

Guidance from Kotka V:

- Thematic elements of SFM
- Inputs to CBD Target 2010
- Global remote sensing survey
- National correspondents
- Harmonization of reporting

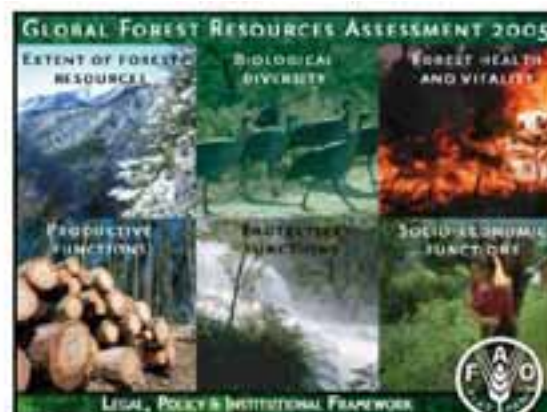
Guidance from COFO:

- Endorsement of Kotka V
- UNFF Global Objectives

Kotka V




GLOBAL FOREST RESOURCES ASSESSMENT 2005



Meeting the needs of CBD (1)

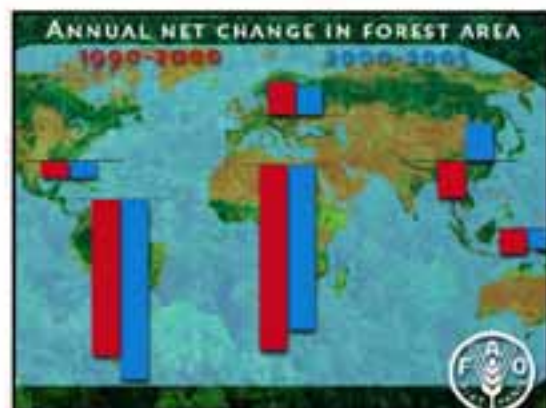
Trends in:

1. The extent of selected biomes, ecosystems and habitats
2. Coverage of protected areas
3. Abundance & distribution of selected species
4. Status of threatened species



CONVENTION ON BIOLOGICAL DIVERSITY





UNFF Global Objectives (1)

1. Reverse the **loss of forest cover** through sustainable forest management, protection, restoration, **afforestation** and **reforestation** and increase efforts to prevent **forest degradation**
2. Enhance **forest-based economic, social and environmental benefits**



UNFF Global Objectives (2)

3. Increase the **area of protected forests** and **other areas of sustainably managed forests**, as well as the **proportion of forest products from sustainably managed forests**
4. Reverse the decline in **official development assistance** and mobilize **new and additional financial resources**



FRA 2010

- Country reports
- Remote sensing survey
- Special studies
- External data providers




Country Reports

T 1	Extent of forest and other wooded land	T 10	Other disturbances affecting forest health and vitality
T 2	Forest ownership and management rights	T 11	Wood removal and value of removal
T 3	Forest designation and management	T 12	WFP removal and value of removal
T 4	Forest characteristics	T 13	Employment
T 5	Forest establishment and regeneration	T 14	Policy and legal framework
T 6	Growing stock	T 15	Institutional framework
T 7	Biomass stock	T 16	Education and research
T 8	Carbon stock	T 17	Public revenue collection and expenditure
T 9	Forest fires		

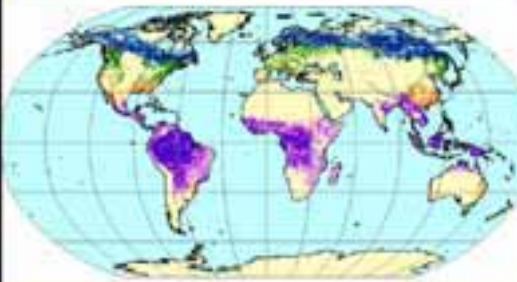



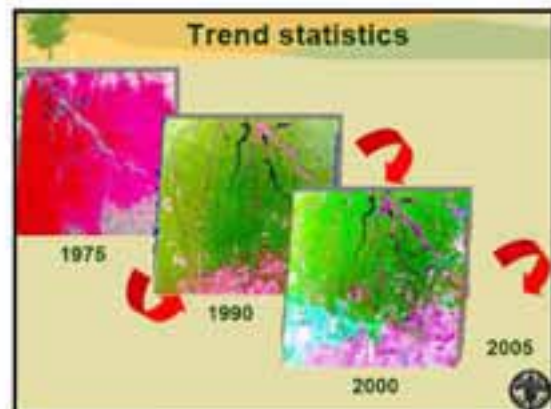
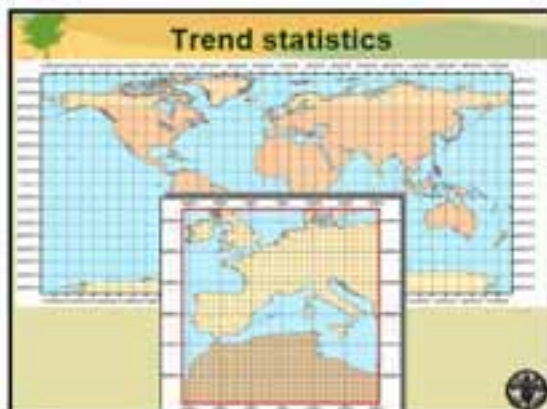
Remote sensing survey

- Distribution of forests
 - Trend statistics
- Regional, biome & global level

Distribution of forests



- ## Special studies
- Forest fragmentation and degradation
 - Forest genetic resources
 - Trees outside forests
 - Forest policies and institutions
 - Non-wood forest products
 - Forest employment and livelihoods

- ## Partners
- 235 countries and territories
 - 175 National Correspondents
 - Regular contacts
 - Regional networks
- 



- ### Next steps
- 2008: Launch FRA 2010 (3-7 March)
 - 2008-2009: Regional workshops (country reports and remote sensing) and bulk of work for countries
 - 2010: Release of Key Findings; Report preparation & dissemination
 - 2011: Final report from global remote sensing survey

Conclusions

1. Long tradition
2. Strong mandate
3. Global network of dedicated experts
4. 2010 and 2011: Important dates
5. Many challenges = many opportunities

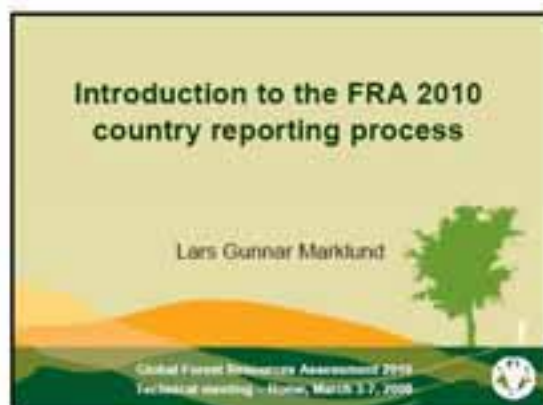


THANK YOU!

www.fao.org/forestry/fra2010



Annex 3.11: Introduction to the FRA 2010 Reporting Process



National Correspondents

- Coordinate elaboration of the country report and responsible for ensuring a timely delivery of the report
- Focal point for communications with FAO on FRA related matters
- Participate in workshops related to FRA
- Disseminate information within your country

FRA focal points

Africa	Laura Russo
Asia	Monica Garzuglia
Latin America and the Caribbean	Lars Gunnar Marklund
Europe	UNECE / Orjan Jonsson
the Pacific	Orjan Jonsson
Russian-speaking countries	Arvydas Lebedys

Review process



Getting started...

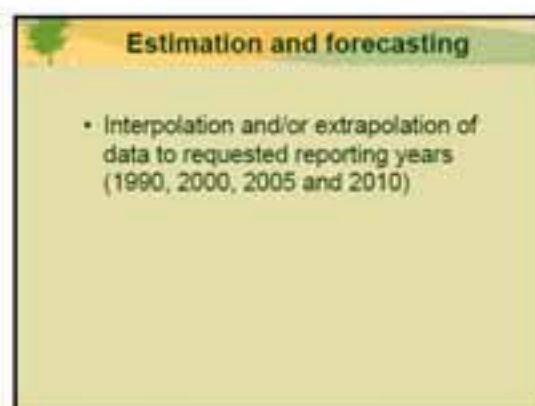
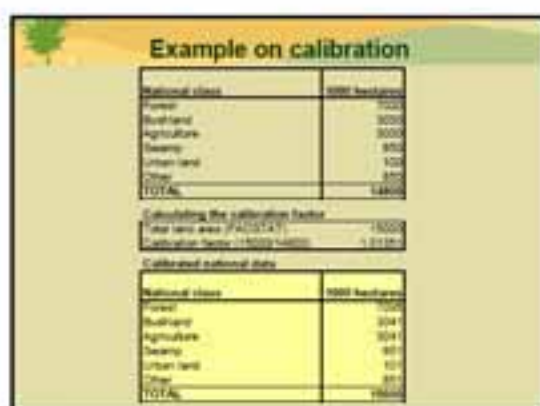
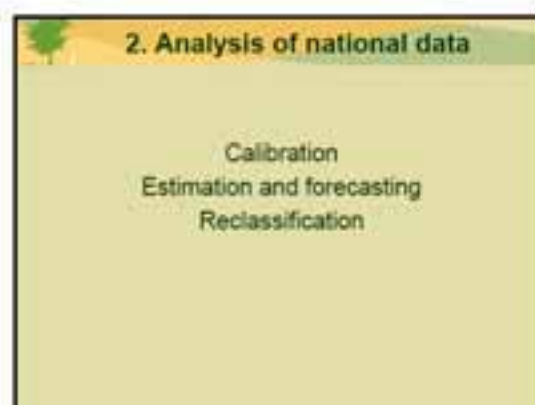
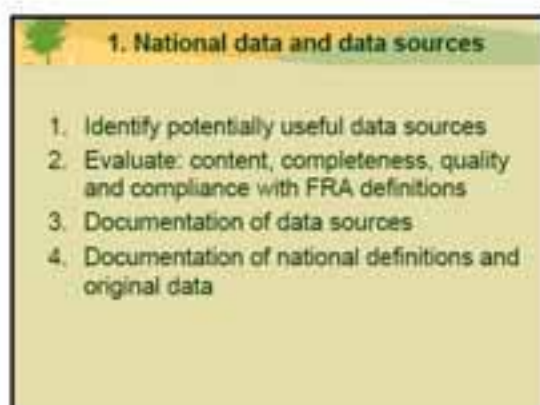
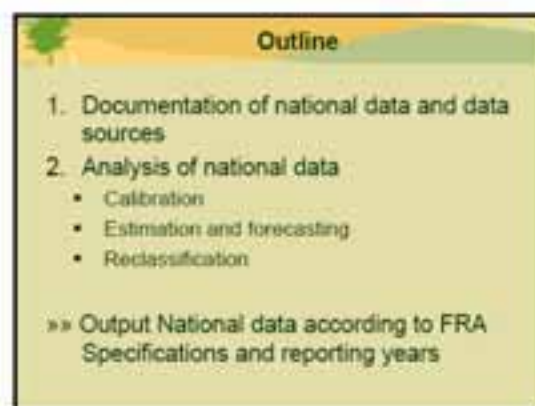
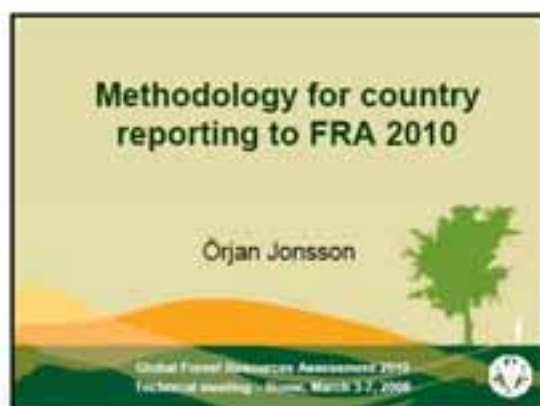
- Start early
- Organize the team
- Identify and locate focal points for other reporting processes
- Start with the key tables (T1, T3a, T4a, T6) and send in a draft report with these tables as soon as possible
- Consult with FRA focal point if in doubt or if you need advice

Time schedule for country reporting

- Launch – beginning of March 2008
- Regional workshops – remainder of 2008
- Deadline for submission of country reports – end of March 2009
- Validation request – mid 2009
- 2010 – country reports published on the Web

Thank you!

Annex 3.12: Methodology for country reporting



Example estimation and forecasting

National class	National data		Estimated / forecasted data			
	1987	1990	1990	2000	2005	2010
Forest	7048	8623	7048	8354	8825	8721
Bushland	3047	3108	3048	3125	3130	3154
Agriculture	3047	3108	3048	3125	3205	3250
Swamp	441	485	452	540	645	640
Urban land	121	150	113	154	175	189
Other	881	895	895	943	945	943
TOTAL	15405	16069	15405	16005	16595	16593

In this example:
linear interpolation for 1990 and linear extrapolation for 2000, 2005 and 2010

Reclassification

- Transform data according to national classes to correspond to FRA 2010 categories
- Reclassification matrix

Example on reclassification

National class	FRA 2010 Categories			Total
	Forest	OWL	Other land	
Forest	100%			100%
Bushland	20%	80%		100%
Agriculture			100%	100%
Swamp			100%	100%
Urban land			100%	100%
Other			100%	100%

Analysis of national data

Suggested order of application

1. Calibration
2. Estimation and forecasting
3. Reclassification

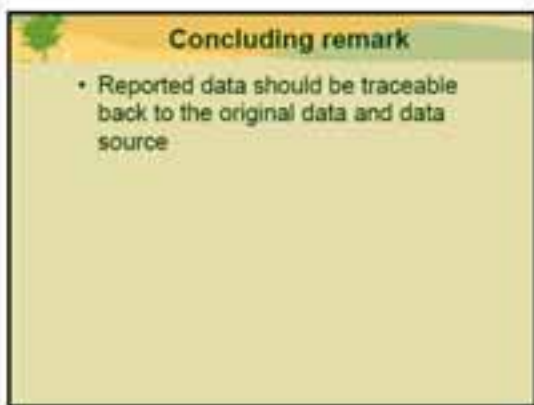
» Ensures documentation of trends according to the national classes

Missing or incomplete data

No field must be left blank
Expert estimates
Use "n.a." not available

Comment fields

1. Comments related to data and definitions
2. Comments on reported trend
3. Other general comments



Concluding remark

- Reported data should be traceable back to the original data and data source

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Thank you!

This slide features a header with a stylized landscape of a tree and hills. The main content area is a solid light yellow color.

Annex 3.13: National Reporting Tables for FRA 2010



Reporting tables			
T 1	Extent of forest and other wooded land	T 10	Other disturbances affecting forest health and vitality
T 2	Forest ownership and management rights	T 11	Wood resources and value of products
T 3	Forest designation and management	T 12	WFPF resources and value of products
T 4	Forest characteristics	T 13	Employment
T 5	Forest establishment and reforestation	T 14	Policy and legal framework
T 6	Growing stock	T 15	Institutional framework
T 7	Biomass stock	T 16	Education and research
T 8	Carbon stock	T 17	Public revenue collection and expenditure
T 9	Forest fires		

T1 Extent of Forest and Other wooded land

Rationale:

- Core table for FRA 2010
- Important for assessing state and trends of forest resources
- Widely used in various international reporting processes and conventions

Reporting

- No changes in relation to FRA 2005
- Pre-filled country reports 1990, 2000 & 2005
- Data sources
 - National forest inventory data
 - Forest maps
 - Vegetations and land use maps

T1 Extent of Forest and Other wooded land				
FRA categories	Area (1000 hectares)			
	1990	2000	2005	2010
Forest				
Other wooded land				
Other land				
...of which with tree cover				
Inland water bodies				
TOTAL				

T2 Forest ownership and management rights

Rationale:

- Control over and rights to use the forest resources
- Policy, institutional and management issues

Reporting

- **Changes in relation to FRA 2005**
 - Ownership now refers to the forest resource (the trees) and not the land
 - Private ownership has been further sub-divided into several sub-categories
 - Information on management rights of public forests has been added
- **Two parts**
 - ownership
 - management rights

T2a Forest ownership

FRA 2010 Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public ownership			
Private ownership			
...of which owned by individuals			
...of which owned by private business entities and institutions			
...of which owned by local communities			
...of which owned by indigenous / tribal communities			
Other types of ownership			
TOTAL			

T2b Holder of management rights of public forests

FRA Categories	Forest area (1000 hectares)		
	1990	2000	2005
Public Administration			
Individuals			
Private corporations and institutions			
Communities			
Other			
TOTAL			

T3 Forest designation and management

Rationale:

- Information on how the forests are intended to be managed
- Relates to reporting to other organizations and arrangements (CBD, UNFF, MCPFE, ITTO, etc.)
- Essential for planning and monitoring of impacts of policy measures

Reporting

- **Changes in relation to FRA 2005**
 - Only covers forest area
 - "Total area with function" has been removed
 - A table on "special categories of designation and management" has been added (T3b)
- **T3a – Primary Designated Function** is prefilled for 1990, 2000 and 2005.

T3a Primary designated function

FRA categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Production				
Protection of soil and water				
Conservation of biodiversity				
Social services				
Multiple use				
Other (specify)				
Na / Unknown				
TOTAL				

T3b Designation and management

FRA categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Area of permanent forest estate				
Forest area within protected areas				
Forest area under sustainable forest management				
Forest area with management plan				

T4 Forest characteristics

Rationale:

- Degree of human impact
- Monitor forest ecosystems

Reporting

- Changes in relation to FRA 2005
 - Planted forest instead of Plantations
 - Modified natural and Semi-natural merged into Other naturally regenerated forest
 - A table with specific categories of forest types added (T4b)
- T4a – Characteristics – area of primary forest is prefilled for 1990, 2000 and 2005

T4a Characteristics

FRA categories	Forest area (1000 hectares)			
	1990	2000	2005	2010
Primary forest				
Other naturally regenerated forest				
...of which of introduced species				
Planted forest				
...of which of introduced species				
TOTAL				

T4b Special categories

FRA categories	Area (1000 hectares)			
	1990	2000	2005	2010
Rubber plantations (Forest)				
Mangroves (Forest and GVL)				
Bamboo (Forest and GVL)				

T5 Forest establishment and reforestation

Rationale:

- Monitor progress towards SFM
- Global objectives on forests (UNFF)

T5 Forest establishment and reforestation

FRA categories	Annual forest establishment (ha/year)			...of which of introduced species (ha/year)		
	1990	2000	2005	1990	2000	2005
Afforestation						
Reforestation						
...of which on areas previously planted						
Net annual expansion of forest						

**T6 Growing stock
T7 Biomass stock
T8 Carbon stock**

- Strongly interrelated
- Consistence between tables
- Consistence between reporting to FRA and to UNFCCC and the Kyoto Protocol

T6 Growing stock

Rationale:

- Productive capacity of the forests
- Planning and monitoring sustainable use
- Basis for biomass and carbon estimates

Reporting

- Commercial Growing stock replaced with Growing stock of commercial species
- Three parts
 - Total growing stock and growing stock of commercial species
 - Composition of growing stock
 - Specification of thresholds
- Trends – need for better information on growing stock per hectare

T6a Growing stock

FRA categories	Volume (million cubic metres over bark)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Total growing stock								
...of which commercial								
...of which broadleaved								
Growing stock of commercial species								

T6b Growing stock of the 10 most common species

FRA category/Species name			Growing stock in forest (million m³ over bark)		
Rank	Scientific name	Common name	1990	2000	2005
1 st					
2 nd					
3 rd					
...					
10 th					
Remaining					
TOTAL					

T6c Specification of threshold values

Item	Value	Complementary information
Minimum diameter (cm) or breast height of trees included in growing stock (G)		
Minimum diameter (cm) at the top end of stems for calculation of growing stock (Y)		
Minimum diameter (cm) of branches included in growing stock (W)		
Volume refers to "above ground" (AG) or "above canopy" (AC)		

T7 Biomass stock

Rationale:

- Basis for estimating carbon and emissions
- Wood energy

Reporting

- Same categories and definitions as IPCC
- Default conversion factors from 2006 IPCC Guidelines – improved since FRA 2005
- General methodological aspects
 - Biomass conversion and expansion factors
 - No default values for dead wood

T7 Biomass stock

FRA categories	Biomass (million metric tonnes oven-dry weight)							
	Forest				Other wooded land			
	1990	2000	2005	2010	1990	2000	2005	2010
Above-ground biomass								
Below-ground biomass								
Dead wood								
TOTAL								

T8 Carbon stock

Rationale:

- Monitor greenhouse gas emissions
- REDD

Reporting

- National data, when available
- Apply default carbon fraction from 2006 IPCC Guidelines (0.47)

T8 Carbon stock

FRA Categories	Carbon (Million metric tonnes)				
	Forest				OWL
	1990	2000	2005	2010	...
Carbon in above-ground biomass					
Carbon in below-ground biomass					
Sub-total: Living biomass					
Carbon in dead wood					
Carbon in litter					
Sub-total: Dead wood and litter					
Soil carbon					
TOTAL					

T9 (Forest) fires

Rationale:

- Planning & monitoring of fire management measures
- Climate change & carbon emission calculations

Reporting

- New table
- Two parts
 - area and number of fires
 - proportion wildfire / planned fire
- Thematic study "Fire management – global assessment 2006"
- Five-year average for reporting

T9a Area and number of fires

FRA category	Annual average for 5-year period					
	1990		2000		2005	
	1000 ha	# of fires	1000 ha	# of fires	1000 ha	# of fires
Total area affected by fire						
... of which on forest						
... of which on other wooded land						
... of which on other land						

T9b Proportion of planned fires and wildfires in forest

FRA category	Proportion of forest area affected by fire (%)		
	1990	2000	2005
Wildfire			
Planned fire			

T10 Other disturbances affecting forest health and vitality

Rationale:

- Forest health and vitality
- Control and mitigate impact

Reporting

- Three parts
 - Disturbances
 - Major outbreaks of insects and diseases
 - Woody invasive species

T10a Disturbances

FRA categories	Affected forest area (1000 hectares)		
	1990	2000	2008
Disturbance by insects			
Disturbance by diseases			
Disturbance by other biotic agents			
Disturbance caused by abiotic factors			
Total area affected by disturbances			

T10b Major outbreaks of insects and diseases affecting forest health and vitality

Description / name	Tree species or groups affected (scientific name)	Year(s) of latest outbreak	Area affected (1000 ha)	Biotic, abiotic, cyclic (years)
Disturbance 1				
Disturbance 2				
Disturbance 3				
...				
Disturbance 10				

T10c Area of forest affected by woody invasive species

Scientific name of woody invasive species	Forest area affected 2005 (1000 hectares)
Sp. 1	
Sp. 2	
Sp. 3	
Sp. 4	
Sp. 5	
Total forest area affected by woody invasive species	

T11 Wood removals and value of removals

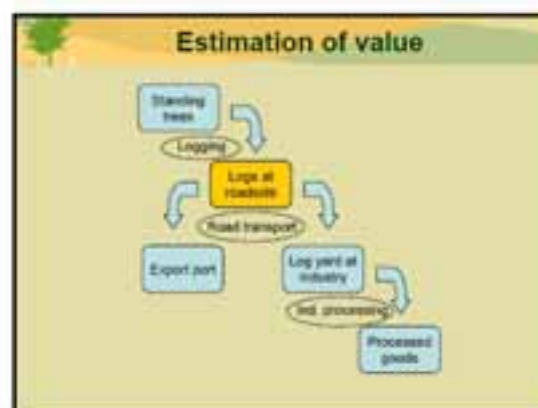
Rationale:

- Contribution of forest sector to the national economy

Reporting

- Removals ≠ felling
- Joint Forest Sector Questionnaire (JFSQ) (EUROSTAT / FAO / ITTO / UNECE)
- Volume over bark (o.b.)
- Five-year average

T11 Wood removals						
FRA category	Industrial roundwood removals			Woodfuel removals		
	1990	2000	2005	1990	2000	2005
Total volume (1000 m ³ o.b.)						
... of which from forest						
Unit value (local currency / m ³ o.b.)						
Total value (1000 local currency)						
Name of local currency: 1990, 2000 & 2005						



T12 Non-wood forest products removals and value of removals	
Rationale:	
➤ Show the importance of NWFPs, both for economy and livelihood of rural people	

Reporting	
➤ FRA 2005 table redesigned (Quantity and value of 10 most important NWFPs)	
➤ Data availability an issue	
➤ Focus on commercial products	
➤ Only removals from forest	

T12 Non-wood forest products removals and value of removals					
Rank	Name of product / Key species	Unit	NWFP removals 2005		NWFP category
			Quantity	Value (1990 local currency)	
1 st					
2 nd					
...					
10 th					
All other plant products					
All other animal products					
TOTAL					

T13 Employment	
Rationale:	
➤ Socio-economic importance	
➤ Government policies	
➤ Industry development	
➤ etc.	

Reporting

- Changes in relation to FRA 2005
 - Self-employment included in primary production of goods
 - "Management of protected areas" has replaced "Provision of services"
- Compatible with national labour statistics

T13 Employment

FRA categories	Employment (1000 years FTE)		
	1990	2000	2005
Employment in primary production of goods			
... of which paid employment			
... of which self-employment			
Employment in management of protected areas			

T14 Policy and legal framework

Rationale:

- Fundamental basis for SFM
- Integration of forest sector into society

Reporting

- New table in FRA 2010
- Yes/No questions with some complementary information
- nfp-updates
- FAOLEX (<http://faolex.fao.org>)

T14a Policies and Laws (2008)


Forest policy statement with national scope	Yes/No
If Yes above, provide: <u>Year of endorsement</u> and <u>Reference to document</u>	
National forest programme (nfp)	Yes/No
If Yes above, provide: <u>Name of nfp</u> , <u>Current status</u> , and <u>Reference to document</u>	
Law (act or code) on forest with national scope	Yes/No
If Yes above, provide: <u>Year of enactment</u> , <u>Year of latest amendment</u> and <u>Reference to document</u>	
Sub-national forest policy statement	Yes/No
If Yes above, indicate: <u>number of regions/states/provinces with forest policy statements</u>	
Sub-national laws (acts or codes) on forest	Yes/No
If Yes above, indicate: <u>number of regions/states/provinces with laws on forests</u>	

T15 Institutional framework

Rationale:

- Institutions responsible for
 - Policy formulation and implementation
 - Law enforcement
- Technical capacities of institutions

T15a Institutions	
FRA categories	2008
Ministry responsible for forest policy formulation	
Level of subordination of Head of Forestry with in the Ministry	Subordination to Minister 1 st level 2 nd level 3 rd or lower level
Other public forest agencies at national level	
Institution(s) responsible for forest law enforcement	



T15b Human resources

FRA categories	Human resources within public forest institutions					
	2000		2005		2008	
	#	% Female	#	% Female	#	% Female
Total staff						
...of which with university degree or equivalent						

T16 Education and research	
<p><u>Rationale:</u></p> <ul style="list-style-type: none"> ➤ Capacity for education and research ➤ Capacity to implement SFM 	

T16 Education and research

FRA categories	Graduation of students in forest-related education					
	2000		2005		2008	
	#	% Female	#	% Female	#	% Female
Master's degree (MSc) or equivalent						
Bachelor's degree (BSc) or equivalent						
Technical institutions' diplomas						
FRA categories	Professionals working in publicly funded forest research centres					
	2000		2005		2008	
	#	% Female	#	% Female	#	% Female
Doctor's degree (PhD)						
Master's degree (MSc) or equivalent						
Bachelor's degree (BSc) or equivalent						

T17 Public revenue collection and expenditure	
<p><u>Rationale:</u></p> <ul style="list-style-type: none"> ➤ Forest sector contribution to government finances ➤ Government support to the forest sector 	

Reporting	
<ul style="list-style-type: none"> ➤ New table in FRA 2010 ➤ Two parts <ul style="list-style-type: none"> • government revenues • government expenditures 	

T17 Public revenues and expenditures

TRA category	Revenues (1000 local currency)	
	2005	2006
Forest revenue		

TRA category	Expenditures 1000 local currency		
	Domestic	External	Total
Operational expenditure			
Transfer payments			
Total public expenditure			

☐ Reforestation
☐ Afforestation
☐ Forest inventory and its planning
☐ Conservation of forest biodiversity
☐ Protection of soil and water
☐ Forest stand improvement
☐ Establishment or maintenance of protected areas
☐ Other, specify below:

Thank you for your attention!

Annex 4: Plenary presentations (Tuesday 4 March)

Annex 4.1: New Zealand-Pilot Study





2010 FRA Planning

- Started planning in late 2007
- Employed a research assistant
- Prioritised tables and identified areas of greatest challenge
- Now working through tables in order of priority
- Made early contact with key holders of data

Pre-filled report

- Useful to have 2010 report populated with 2005 data
- Should assist with consistency of data
- Creates two way process with FAO staff
- Helpful to have comments and definitions from FAO staff pointing to priority areas to update (e.g. NZ country area, growing stock estimates)

Most relevant tables

- Tables 1, 2, 4, 5, 6-8
- T1 – Forest and land areas fundamental
- T2 (forest ownership) – public / private split straight forward
- T6-8: Indigenous forest growing stock analysis needs to be completed (CMS data)

Most relevant tables - cont

- T10 – Invasive species – both weeds and introduced browsing mammals, also wind
- T11 and 13 – forestry is a significant business and NZ has good economic data

Lesser relevance

- T9 – forest fires not significant for NZ
- T12 – value of non-wood forest products currently insignificant.

Challenges

- Only limited new mapping completed since 2005 report
- Rapid changes in forest ownership
- Growing stock, biomass and carbon for indigenous forests. Until very recently no national scale inventory undertaken
- Patchy national level data on biotic & abiotic disturbance

Summary

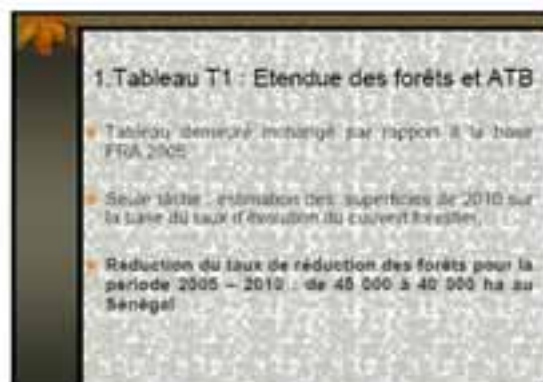
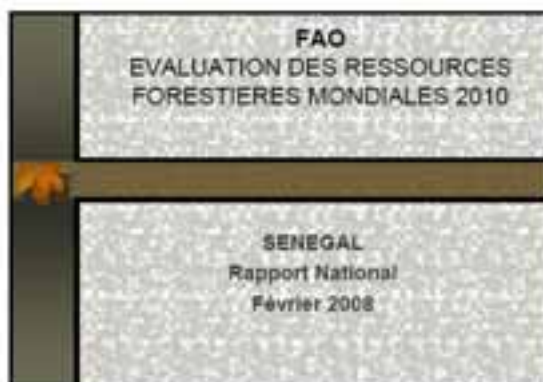
- New Zealand strongly supports the FRA process and approach
- 2010 questionnaire has been simplified and streamlined
- Good planning and liaison with FAO is required
- Start early
- Build networks of experts and involve them early in the process
- Identify priorities, gaps/challenges early

Summary

- The FRA process is assessing New Zealand domesticity by
 - Focusing attention on data interpretation
 - Assisting in building inter-agency cooperation/connections
- Ultimately we would like to produce periodic 'State of the Forests' reports that encourage greater debate on the role of forest, forest policy and sustainable land management policies.

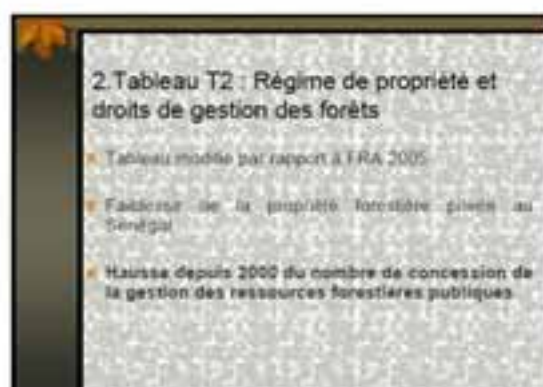
Thank you

Annex 5.2: Senegal-Pilot Study



1. Tab 1 : Etendue des Forêts et des ATB
Données du Tableau T1 (x 1000 ha)

Catégorie de FRA 2005	1990	2000	2005	2010
Forêts	9 340	8 898	8 673	8 673
Autres terres bois	5 301	5 101	5 001	4 911
Autres terres	4 604	5 254	5 579	5 959
dont isolées				
Caux minimes	419	419	419	419
TOTAL	19 672	19 672	19 672	19 672



2. Tab 2 : Régime de propriété et droits de gestion des forêts
Données du Tableau T2a – Propriété des forêts
Superficie forestière (x 1000 ha)

Catégorie de FRA 2005	1990	2000	2005
Propriété publique	9 347	8 898	8 671
Propriété privée	1	2	2
dont			
Autres terres	0	0	0
TOTAL	9 348	8 898	8 673

2. Tab 2 : Régime de propriété et droits de gestion des forêts
Données du Tableau T2b – Détenteur des droits de gestion des forêts publics
Superficie forestière (x 1000 ha)

Catégorie de FRA 2005	1990	2000	2005
Administration Publique	9 347,8	8 898	8 640
Sociétés privées	0,4	0,5	0,5
Collectivités		0,5	18,5
Autre	0	0	0
TOTAL	9 348	8 898	8 673

3. Tableau T3 : Désignation et gestion des forêts

- Tableau modifié par rapport à FRA 2005
- Tâche ardue que celle de distinguer avec précision les diverses catégories.
- Hausse sensible depuis 2005 des superficies forestières sous aménagement participatif

3 Tableau T3 : Désignation et gestion des forêts

Tableau 3a – Fonction principale désignée (x 1000 ha)

Catégorie de FRA 2010	1990	2000	2005	2010
Production	8 610	8 318	8 540	8 985
Protection du sol et de l'eau	40	38	37	36
Conservation BD	1 575	1 591	1 569	1 602
Services sociaux	0 914	0 867	0 843	0 821
Usages multiples	2 121	1 881	1 887	1 839
Autre fonction	0	0	0	0
TOTAL	8 348	8 898	8 873	8 473

3 Tableau T3 : Désignation et gestion des forêts

Tableau 3b – Catégories spéciales de désignation et de gestion (x 1000 ha)

Catégorie de FRA 2010	1990	2000	2005	2010
Superficie de DFP	4 689	4 649	4 524	4 424
Superficie forest (sans protégées)				36
Superficie forest (gestion durable)			1	1 602
Superficie forest avec un plan d'aménagement	21	56	384	300

4 Tableau T4 : Caractéristiques des forêts

- Tableau modifié et enrichi par rapport à FRA 2005
- Catégorie « Autre forêt naturellement régénérée » correspond à la classe nationale « Forêt résistante »
- « Forêt plantée » → Plantations forestières
- Mangrove : données de l'étude spécifique de FRA 2005
- Ramblou : données de l'inventaire national de 2004

4 Tableau T4 : Caractéristiques des forêts

Tableau 4a (x 1000 ha)

Catégorie de FRA 2010	1990	2000	2005	2010
Planture	1 759	1 653	1 568	1 553
Autres forêts natu régénérées	7 353	6 889	6 665	6 450
dont espèces introduites	ND	ND	ND	ND
Forêt plantée	230	348	410	470
TOTAL	9 348	8 898	8 673	8 473

4 Tableau T4 : Caractéristiques des forêts

Tableau 4b (x 1000 ha)

Catégorie de FRA 2010	1990	2000	2005	2010
Plantation d'hect (Forêt)	0	0	0	0
Mangroves (F & AFB)	140	127	115	105
Ramblou (F & AFB)	724	691	675	661

5. Tableau T5 : Etablissement des forêts et reboisement

- Tableau nouveau par rapport à FRA 2005
- Difficultés pour distinguer la classe « Boisement » de celle « Reboisement »
- « Expansion naturelle de la forêt » → « mise en défens »

5. Tableau T5 : Etablissement des forêts et reboisement

Tableau 5 (ha)

Caractéristique de l'UEA 2005	1990	2000	2005
Boisement (+ Reboisement)	236 575	345 840	409 719
Reboisement			
Expansion naturelle de la forêt	96 056	176 802	251 734

6. Tableau T6 : Matériel sur pied

- Tableau remis par rapport à FRA 2005
- Pas de difficultés particulières pour le remplissage du tableau

6. Tableau T6 : Matériel sur pied

Tableau 6a – Matériel sur pied (x millions de mc sur)

Caractéristique de l'UEA 2005	1990	2000	2005	2010
Total matériel sur pied	349	332	324	316
dont conifères				
dont feuillus				
Matériel sur pied d'us commerciaux	155	148	144	140

6. Tableau T6 : Matériel sur pied : les 10 espèces les plus répandues (x millions de mc)

Spécies	Abbréviations	1990	2000	2005
<i>Betula pubescens</i>	Mbep	27	25	34
<i>Conifer glauca</i>	Rat	34	33	32,5
<i>Conifer pinnata</i>	Onir	30	29	28,5
<i>Pinus sylvestris</i>	Venn	27	26	24,5
<i>Quercus robur</i>	Sertan	18	17	16,5
<i>Taxus baccata</i>	Wocou	14	14	14
<i>Larix laricina</i>	Sann	13	12	11,5
<i>Alnus incana</i>	Calidral	10	10	9,5
<i>Erythronium gl.</i>	Tal	4	3	3
<i>Conifer nigra</i>	Tap	4	3	3
Restantes		157	150	147
Total		349	332	324

6. Tableau T6 : Matériel sur pied

- Tableau 6G – Spécifications des valeurs « sur »

Indicateurs	Valeur	Indicateurs complémentaires
Diamètre minimal de peç-comptage (X)	10 cm	
Diamètre minimal de découpe à la cime (Y)	5 cm	
Diamètre minimal de découpe des branches	3 cm	

7 Tableau T7 : Biomasse

- Tableau demeure inchangé par rapport à FRA 2005
- Pas de difficultés particulières pour le remplissage du tableau.

7 Tableau T7 : Biomasse des forêts

Tableau T7 (x millions de tm)

Catégorie de FRA 2010	1990	2000	2005	2010
Biomasse aérienne	610	581	565	553
Biomasse souterraine	188	190	175	171
Bois mort	30	29	28	27
TOTAL	829	799	768	751

7 Tableau T7 : Biomasse des autres terres boisées

Tableau T7 (x millions de tm)

Catégorie de FRA 2010	1990	2000	2005	2010
Biomasse aérienne	40	39	38	37
Biomasse souterraine	13	12	12	12
Bois mort	2	2	2	2
TOTAL	55	53	52	51

8 Tableau T8 : Stock de carbone

- Tableau demeure inchangé par rapport à FRA 2005
- Pas de difficultés particulières pour le remplissage du tableau.

8 Tableau T8 : Stock de carbone dans les forêts

Tableau T8 (x millions de tm)

Catégorie de FRA 2010	1990	2000	2005	2010
Carbone dans BA	20	19	19	18
Carbone dans BS	6	6	6	6
ST Carbone BV	25	25	25	25
Carbone dans BM	1	1	1	1
Carbone dans LI	ND	ND	ND	ND
ST Carbone BML	1	1	1	1
Carbone dans sol	ND	ND	ND	ND
TOTAL	27	26	26	25

8 Tableau T8 : Stock de carbone dans les ATB

Tableau T8 (x millions de tm)

Catégorie de FRA 2010	1990	2000	2005	2010
Carbone dans BA	305	290	283	277
Carbone dans BS	94	95	96	96
ST Carbone BV	309	300	371	363
Carbone dans BM	15	14	14	14
Carbone dans LI	ND	ND	ND	ND
ST Carbone BML	15	14	14	14
Carbone dans sol	ND	ND	ND	ND
TOTAL	414	394	385	378

9 Tableau T9 : Incendies de forêt

- Tableau nouveau par rapport à FRA 2005 (sa production de SVF)
- Pas de difficultés particulières pour le remplissage du tableau

9 Tableau T9 : incendies de forêt

Tableau 9a

Catégorie de FRA 2005	2005	2006	2007	2008
	1 000 ha	Nombre	1 000 ha	Nombre
Superficie totale				
dont dans Forêt	48	95	67	81
dont dans ATB	97	285	174	184
dont dans AT				

9 Tableau T9 : incendies de forêt

Tableau 9a (suite)

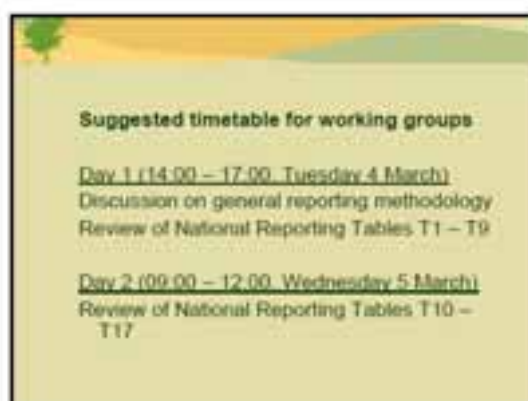
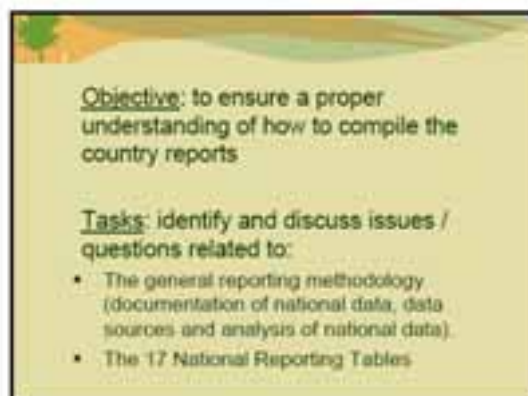
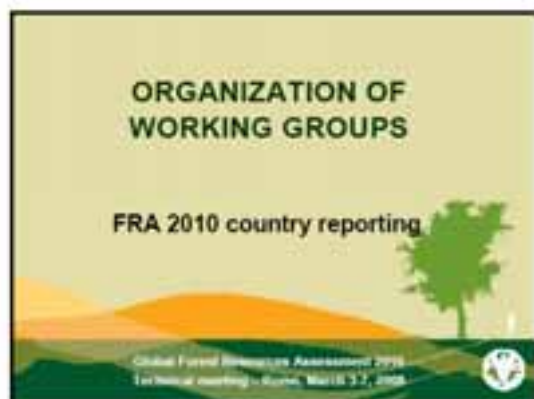
Catégorie de FRA 2005	2005	2006
	1 000 ha	Nombre
Superficie totale		
dont dans Forêt	62	52
dont dans ATB	125	156
dont dans AT		

9 Tableau T9 : incendies de forêt

Tableau 9b : Proportion de superficie forestière touchée par les incendies (%)

Catégorie de FRA 2005	2005	2006	2007
Incendie non contrôlé	1,55	2,94	2,2
Feu planifié	0,07	0,06	0,79

Annex 5.3: Organization of working groups



Anglophone Africa	
LIBRARIAN ROOM 0209 FAO resource person: Laura Russo	
Ethiopia	Namibia
Ethiopia	Nigeria
Gambia	Senegal
Ghana	Sierra Leone
Kenya	South Africa
Lesotho	Swaziland
Liberia	Uganda
Mali	United Republic of Tanzania
Mauritius	Zambia
Mozambique	Zimbabwe

Caribbean group	
Cuba Room 0224 FAO resource person: Simisola Rose	
Barbados	
Belize	
Dominica	
Grenada	
Guyana	
Jamaica	
Montserrat	
Saint Kitts and Nevis	
Saint Lucia	
Saint Vincent and the Grenadines	
Suriname	
Trinidad and Tobago	

Pacific group	
E learning lab: Main Library Build A FAO resource person: Orian Jones	
Australia	
Cook Islands	
Fiji	
Kiribati	
New Zealand	
Nor	
Papua New Guinea	
Samoa	
Solomon Islands	
Tonga	

Latin America- Spanish	
CASADA ROOM A316 FAO resource person: Lara Cuellar Mackland	
Argentina	Guatemala
Bolivia	Honduras
Brazil	Nicaragua
Chile	Paraguay
Colombia	Peru
Costa Rica	Uruguay
Cuba	Venezuela
Ecuador	
El Salvador	
Guatemala	

Asia	
PAKISTAN ROOM A127 FAO resource person: Monica Garza	
Bangladesh	Maldives
Bhutan	Nepal
Cameroon	Myanmar
China	Niger
DPR Korea	Philippines
India	Republic of Korea
Indonesia	Sri Lanka
Iran (Islamic Republic of)	Thailand
Japan	Timor-Leste
Korea	
Malaysia	

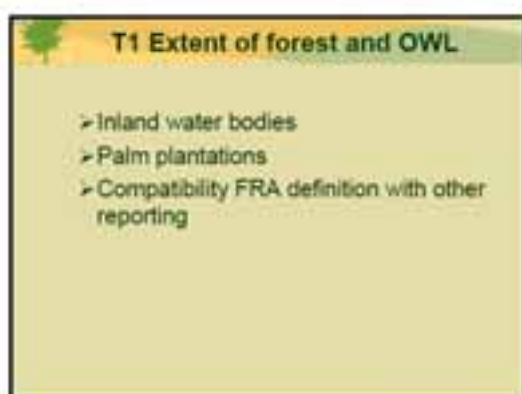
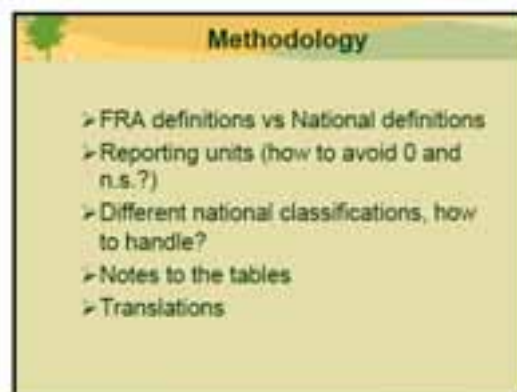
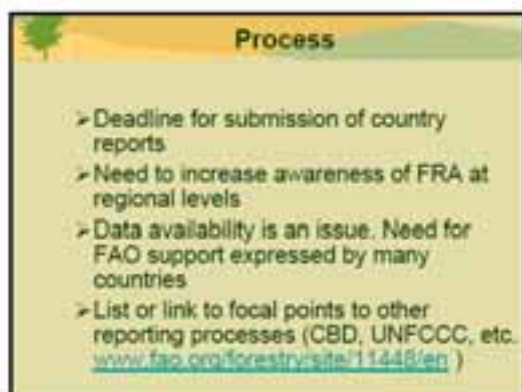
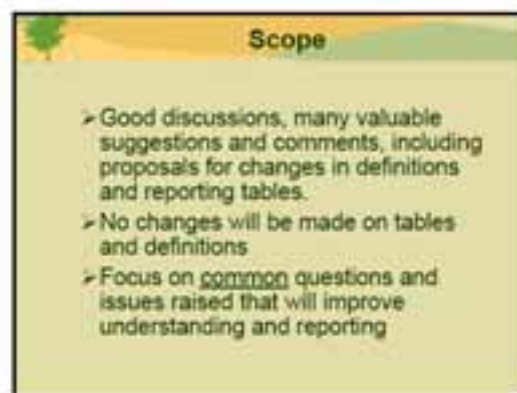
Near East - Arabic speaking	
Forestry room 0440 FAO resource person: Mohamed Bakat	
Algeria	
Egypt	
Iraq	
Libya	
Libyan Arab Jamahiriya	
Morocco	
Saudi Arabia	
Sudan	
Syrian Arab Republic	
Tunisia	
United Arab Emirates	

UNECE- English		
PHILIPPINES C277281		
Resource persons: Motta Wilkie		
Albania	France	Poland
Austria	Greece	Romania
Belgium	Hungary	Serbia
Bulgaria	Ireland	Slovakia
Canada	Israel	Slovenia
Croatia	Italy	Taiwan
Cyprus	Latvia	Sweden
Czech Republic	Lithuania	The FYR of Macedonia
Denmark	Luxembourg	Turkey
Egypt	Montenegro	United Kingdom
Estonia	Norway	United States of America
Finland		

Summary	
Asia (English)	PAKISTAN ROOM A127
Africa (Anglophone)	LEBANON ROOM D006
Francophones	INDIA ROOM A127
Pacific (English)	E-Learning lab- ground floor A- Main Library
Caribbean (English)	CUBA ROOM B334
Latin America (Spanish)	CANADA ROOM A316
Near East (Arabic)	FORESTRY ROOM D442
UNECE (English)	PHILIPPINES C277281
Russian speaking	STATISTICS ROOM C468

Annex 6: Plenary presentations (Thursday 6 March)

Annex 6.1: Summary of group work



T3a Primary designated functions

- Functions vs designations
- Level of designation
- When to report multiple use
- Why are IUCN Categories V-VI excluded?

T3b Special designation and management categories

- Permanent Forest Estate (PFE)
- SFM vs management plan
- Doing nothing = Sustainable management?
- Protected area and illegal logging...

T4a Characteristics

- Introduced species / naturalized species
- Planted forest (difficult to differentiate)?
- Forest fallows
- Primary forest vs protected areas

T5 Forest establishment and reforestation

- Afforestation vs Reforestation
- Reforestation FRA / UNFCCC
- Natural regeneration not included
- Enrichment planting

T6 Growing stock

- Biomass to Growing stock
- How to report on Bamboo?
- Growing stock of commercial species vs volume available for wood supply
- Fuelwood species commercial?
- Volume of trees in protected areas?


T7 Biomass & T8 Carbon

- Conversion factors
- Lack of data a recognized issue
- Should the same figures be reported as UNFCCC figures?



T9 Forest fire

- Total area affected by fire difficult to report on for many countries
- Planned fire vs Wildfire
- One fire may cover different categories or occur several times on the same area



T10 Disturbances

- When does a damage become a disturbance?
- Link defoliation and damage
- Woody invasive species
- Data availability an issue



T11 Removals and value of removals

- Point of measure (road side)
- "Industrial" round wood
- Illegal / informal removals
- Portable mills, charcoal etc.
- Self consumption and given away for free, how to value?



T12 NWFP removals and values

- Include services, water, ecotourism, recreation, hunting, carbon etc.?
- Ornamental plants and crops growing under tree cover
- Honey, Christmas trees
- Value refers to raw material
- Grazing vs fodder collection




T13 Employment

- Reporting on employment in T13, T15 and T16 are mutually exclusive
- FTE and reference period
- Difficult to separate production of goods and management of protected areas
- Participatory forest management
- Tourism management



T14 Policy and legal framework

- Policy – sometimes part of an overarching development policy
- Policy but no formal statement
- Status of nfp you may tick several options.
- National vs sub-national




T15 Institutions

- Number of years to be considered as university degree
- Clarification on total staff
- Autonomous agency responsible for forestry not depending on a minister
- Several ministries responsible for forest



T16 Education and research

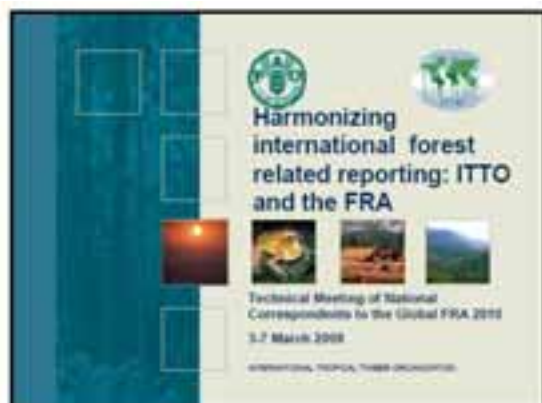
- Students educated abroad excluded
- Foreign students graduated in the country included
- Number of years for different academic levels
- Forest degree holders not working in forestry?
- Partially privately funded research centers?
- Secondary training of technicians?



T17 Forest revenues

- Public owned business entities?
- Transfer payments
- Allocation vs Expenditures
- Exclusion of tax income?

Annex 6.2: Harmonizing forest related reporting: ITTO and FRA



Status of Tropical Forest Management

- Primary data source: C&I reports
- First rigorous attempt to estimate areas of tropical forest under SFM
- Covers 33 tropical countries accounting for over 80% of total tropical forest area



Information base – Quality of country C&I reports

Indicator	Number of indicators	Average score			Overall average
		Africa	Asia & Pacific	Latin America & Caribbean	
1. Existing conditions for data	20	1.8	2.1	2.2	2.0
2. Forest resource security	5	1.1	1.9	2.1	1.7
3. Forest ecosystem health and condition	5	1.2	1.8	1.5	1.5
4. Forest livelihoods and income	15	1.7	1.8	1.8	1.8
5. Biological diversity	12	1.2	1.6	1.4	1.4
6. Socio-economic data	4	2.8	1.4	2.2	2.1
7. Governance, social and cultural aspects	17	1.3	1.8	1.7	1.6
Average of overall criteria		1.5	1.7	1.7	1.6

1. Source: ITTO/FAO, 2004

Data sources: ITTO sources in Africa

Country	ITTO C&I report	ITTO mission	ITTO C&I workshop
Cameroon	★		★
Central African Rep		★	★
DRC	★	★	★
Cote d'Ivoire	★		★
EGC	★		
Gabon	★	★	
Ghana	★		★
Liberia		★	
Nigeria			★
Togo	★		★

Data sources: ITTO sources in Asia & the Pacific


Country	ITTO C&I report	ITTO mission	ITTO C&I workshop
Cameroon	★		★
Fig		★	
India			★
Indonesia	★	★	
Malaysia	★		
Myanmar	★		
Papua New Guinea	★		★
Philippines	★	★	★
Thailand	★		
Vanuatu	★		★

Data sources: ITTO sources in Latin America & the Caribbean


Country	ITTO C&I report	ITTO mission	ITTO C&I workshop
Belize	★		★
Brazil		★	
Colombia	★		★
Ecuador		★	★
Guatemala	★	★	
Honduras	★		★
Panama	★	★	★
Paraguay	★	★	
Tanzania & Togo	★	★	
Venezuela	★		★

Other data sources

ITTO consultants and staff	Country visits/consultations
FAO	FRA – forest area, etc. FOGA – Forest products
UNEP-WCMC	Forest in IUCN protected area categories
IUCN	IUCN red list of threatened species
Certification bodies	Certified forest area
Other published and unpublished sources, including official websites	Various data



Information base



Inconsistent/conflicting information
eg country estimates of forest area vs FRA vs UNEP-WCMC vs other sources

PFE – not all countries had clear definition or good-quality data; concept didn't always apply

Little verification of implementation of forest management plans/legal obligations



Ascertaining SFM areas



Sum of FMUs:

- independently certified or making progress towards certification;
- with fully developed, long-term (10 year +) mgmt. plan and evidence it is being implemented;
- included in model forests with information on mgmt. quality; and/or
- community based with secure tenure and known high-quality mgmt.




Status of tropical forest management



Total PFE: 859 million hectares

Of which:

- 353 million hectares** natural production forest
- 45 million hectares** production planted forest
- 461 million hectares** protection forest




Status of tropical forest management



Natural-forest production PFE (353 m ha)

Area under management plans	96.2 m ha
Area certified	10.5 m ha
Area managed consistent with SFM	at least 25.2 m ha (7.1%)




Status of tropical forest management



Natural-forest protection PFE (461 m ha)

Area under management plans	17.8 m ha
Area certified	n.a.
Area managed consistent with SFM	at least 11.2 m ha (2.4%)





Status of tropical forest management




Total natural PFE (814 m ha)

Area under management plans	114 m ha
Area certified	10.5 m ha
Area managed consistent with SFM	at least 36.4 m ha (4.5%)





SFM Tropics: Conclusions



Area under SFM has increased significantly but is still a small proportion of the PFE

More work needed to strengthen information base

The PFE needs further clarification, and work to determine its extent, location and integrity

International technical and financial support often pivotal, including in use of C&I



FAO FRA Data Relevance to ITTO






- Around half of ITTO's 57 indicators covered or partially covered by FRA data tables
- Very relevant: extent of forests, designated function(s), characteristic (forest type)
- Relevant: ownership, growing stock, carbon stock, disturbances, tree species, growing stock composition, NWFPs, employment
- Less relevant: biomass, wood removals (JFSQ)



FRA and ITTO




- ITTO will continue to work towards and report on sustainable forest management in tropics
- ITTC requested SFM Tropics 2005 report to be updated for 2010
- Concepts important to ITTO (eg PFE, assessment of sustainability) being incorporated in FRA 2010



FRA and ITTO (cont.)




- Possibility of utilising common database, joint questionnaire approach
- Possibility of joint/shared analytical work for tropical countries, special study or studies
- ITTO has included coordination with/ support for FRA 2010 in 2008-2009 Work Program, more work to do to ensure major countries support this

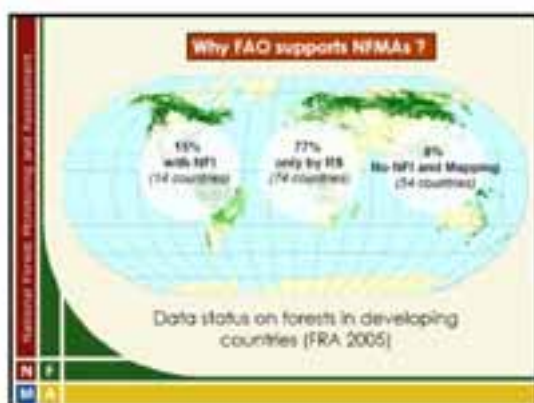
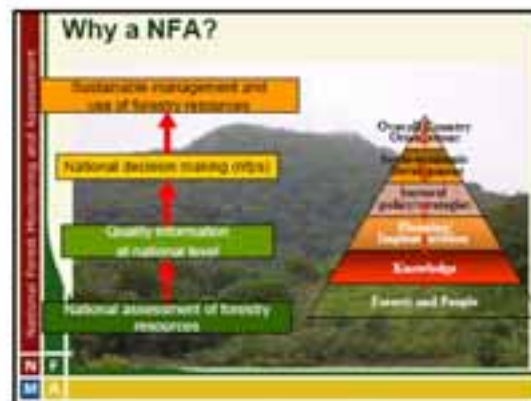



THANK YOU

[www.ito.or.jp](http://www.itto.or.jp)

www.fao.org

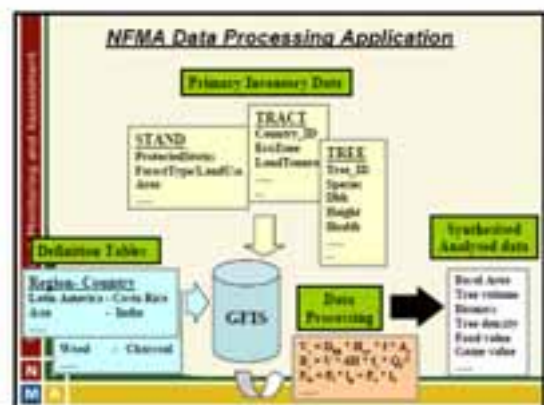
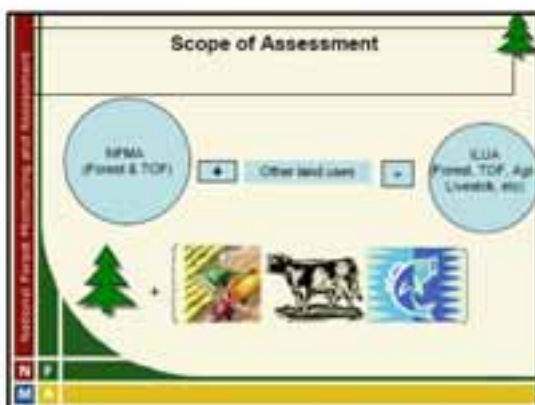
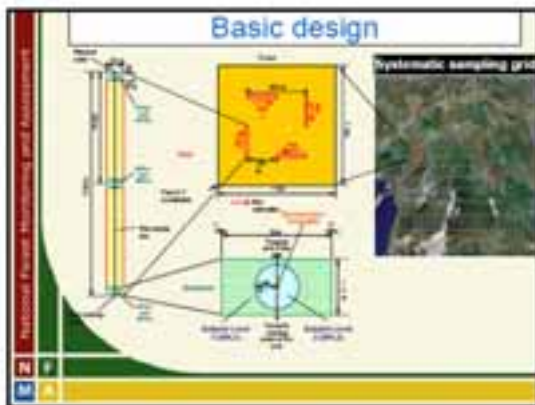
Annex 6.3: FAO support to National Forest Monitoring and Assessment

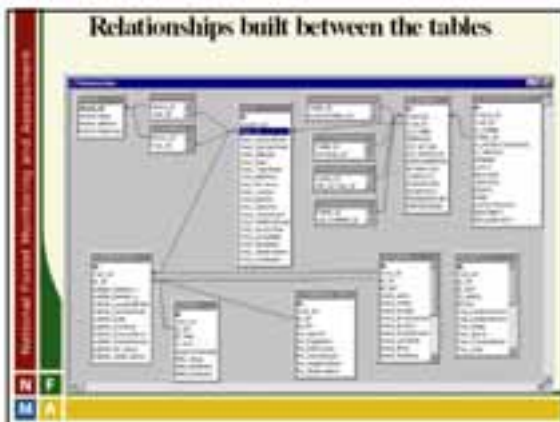


- Support to NFMA
- FAO Mandate
 - COFO
 - IPF and IFF

- How ?
- Through adopting holistic and cost effective approach to NFMA
 - Broadening & harmonising information to meet national & international users requirements
 - Data driven by decision making and inter-sector policy harmonisation
 - Support national policy dialogue and reporting to international processes

- Approach
- Capacity building
 - Improve knowledge (National Decision making)
 - State of resources in forests and TOF and their benefits (products & services)
 - Management, use and users of resources
 - Improve information management systems
 - Set up long term monitoring of indicators for national & international reporting (extent, growing stock, carbon, biodiversity, health, etc)

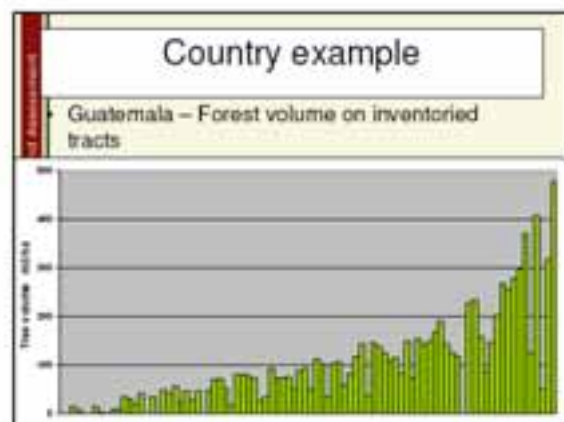
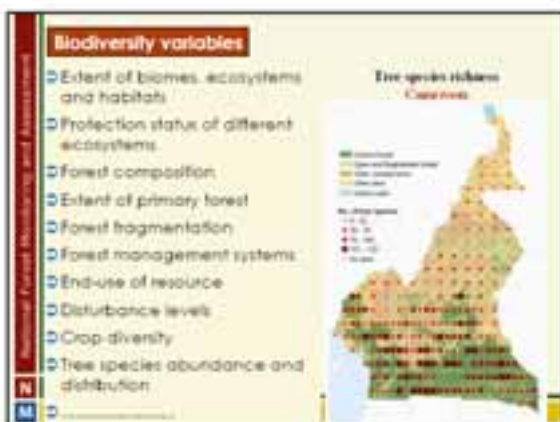


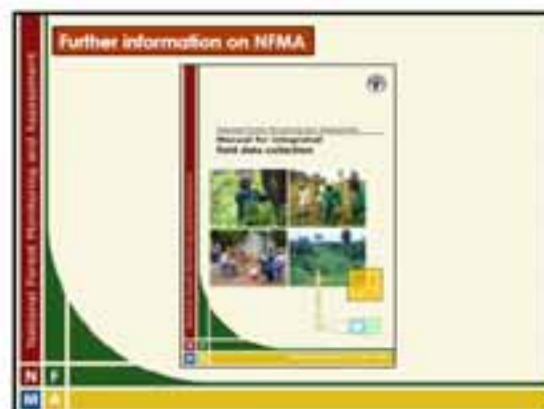


Forms for displaying structured inventory data

Outputs of NFMA, basis for policy analysis

System	Forest	Forest Use	Forest Health	Forest Biodiversity	Forest Carbon	Forest Policy	Forest Law	Forest Governance	Forest Monitoring	Forest Assessment	Forest Reporting	Forest Planning	Forest Design	Forest Implementation	Forest Evaluation	Forest Improvement	Forest Innovation	Forest Integration	Forest Interoperability	Forest Inclusion
Extent of forest, other wooded land & other land	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ownership	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Designation	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Forest characteristics	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Origin of forest and trees	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Volume per land use category	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Biomass per land use category	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Carbon per land use category	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Forest fire	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Environmental problems	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Forest and tree health	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Biodiversity (tree species)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Products	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Use rights	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Management & utilization	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
Policy analysis	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16





Annex 6.4: The FRA 2010 Remote Sensing Survey



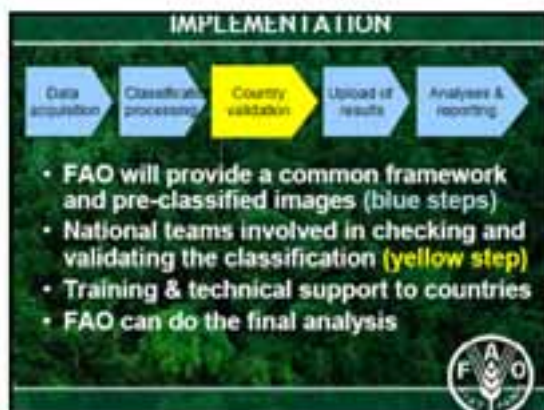
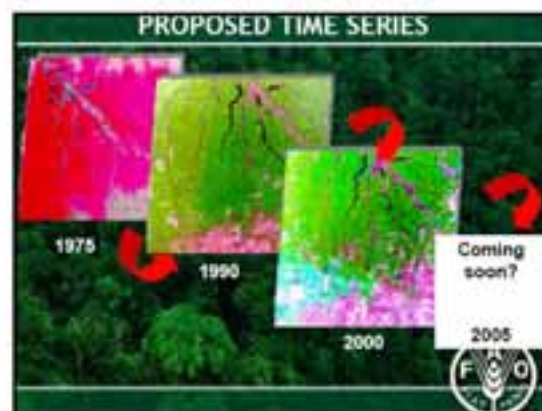
Why are we doing a REMOTE SENSING SURVEY?

1. Complement (not replace) National data
2. Global and regional maps of tree cover
3. Get TRENDS from more consistent data = show where changes are located
 - deforestation and
 - + afforestation



Pilot study to test the process

- The initial step will be to undertake a Pilot study to test and refine the process before global application
- 20 countries covering wide range of forest types participating in Task Force and Pilot
- using a subset of the global scenes selected across varied biomes



- ### EXPECTED OUTPUTS
1. Global and regional tree cover maps - (not intended to be used at national scale)
 2. Trends in regional, biome and global tree cover from 1975 (if poss.), 1990-2000 and to 2005
 - area change statistics
 - information on tree cover and dynamics
 3. Improved technical skills through capacity building
 4. A framework to support monitoring of forests, land use & environment
 5. Baseline data for further research & modeling

- ### Partners to add expertise and value
- Countries: national agencies, regional hubs
 - FAO
 - Joint Research Centre (Italy)
 - Universities (SDSU, UMD, Jena, Boston, Mississippi)
 - USGS/EROS data center
 - NASA
 - Heinz Center (US)
 - World Bank
 - UNEP
 - World Resources Institute, CI
 - GEO-C-GOLD
 - GEO Secretariat
 - Open to others

NEXT STEPS

- Finalise preparations for the remote sensing survey
- RSS Task Force set up to refine methods, advise & test the process
- 2008-2009: most of the work
 - Hold regional workshops, training etc
- 2010: Data analysis and prepare drafts
- 2011: Final report and maps



THANK YOU

More information is available from:

www.fao.org/fra

fra@fao.org



Annex 6.5: Evaluation of methodologies in the context of application of Remote Sensing Survey for the Global Forest Resources Assessment Programme

Evaluation of methodologies in the context of application of Remote Sensing Survey for the Global Forest Resource Assessment (FRA 2010) Programme

John Latham
Natural Resource Environment Assessment and Management (NREAM)
Food and Agriculture Organization of United Nations

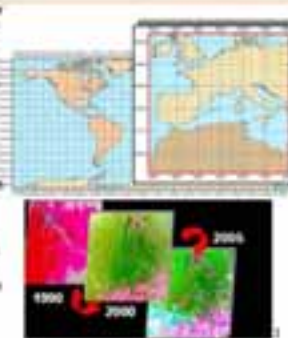
Rome, March 2008

Introduction

- Background and linkages
 - Global Forest Resource Assessment (FRA)
 - National representatives
 - International Partners
 - FAO - FOM, NRCE, EU-JRC, SDSU, University of Jena et al...
- Methodologies
- Functionality and Tools – Processing & Gateway

FRA 2010 – Remote Sensing Survey


- Specifically designed to cover the forest related information needs for monitoring and progress towards the 2010 Biodiversity Targets, the Global Objectives on Forests of the UNFCCC and the Millennium Development Goals
- Over 220 countries will be covered
- A systematic sampling design (grid of blocks at 1x1 deg intervals) will be used
- The area covered at each sample site is 10 km x 10 km (with a 5 km buffer zone)
- Landcover images—dating from 1990, 2000, 2005 will be analysed, initially
- Opportunity for broader utilization of country level



Activities

- Expert consultations to identify
 - Main activities and tasks
 - Input data sources
 - Legend
 - Minimum mapping unit
 - Processing environment
- Testing and assessment of various approaches and proposed methodology
 - Sample blocks creation and screening
 - Evaluation of methodologies
 - Information gateway
- Evaluation of software and tools
 - Mapping Device – Change Analysis Tool software

Sample blocks screening



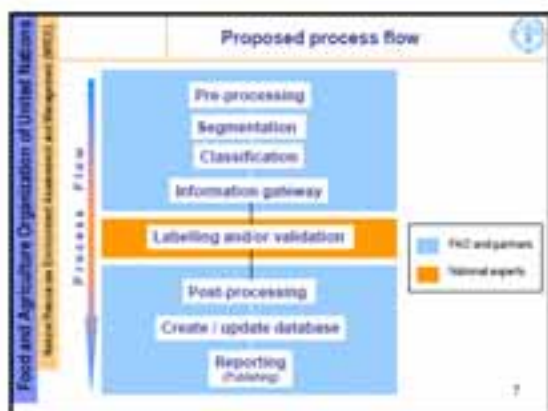
220 sample blocks

Activity two - Methodology

Evaluation of different approaches to FRA change detection

```

graph TD
    Input[Input  
22 x 22 km blocks  
grid 1990-2005] --> Visual[1. Visual]
    Input --> Pixel[2. Pixel Based]
    Input --> Object[3. Object Based]
    Visual --> Output[Output  
Transfer model to  
user features]
    Pixel --> Output
    Object --> Output
    Output --> Evaluation[Evaluation]
  
```



Food and Agriculture Organization of United Nations
Natural Resources Assessment and Management (NRCE)

FRA-RSS Information Gateway

The FRA-Remote Sensing Survey-Information Gateway is a web-based integrated system to manage data and information produced by the FRA 2010 programme activities.

It aims to:

- disseminate and share remote sensing and any other geo-spatial data relevant to the programme;
- facilitate global, regional and national monitoring efforts; ATIS
- implement a decentralized approach that ensures an increased involvement of countries in the assessment and mapping task.

Food and Agriculture Organization of United Nations
Natural Resources Assessment and Management (NRCE)

FRA-RSS Information Gateway

Provides controlled access to raw and processed satellite imagery, software downloaded, interpretations, pre-processed segments, auxiliary information, statistics, maps, and other information related to RSS assessments.

- Functionalities
 - search/ display
 - download
 - upload
 - users management
 - process status
- Guidelines/tools
- Features:
 - User friendly interface
 - Controlled access to various level of information
 - Online decision support tools

Food and Agriculture Organization of United Nations
Natural Resources Assessment and Management (NRCE)

Thank you!

Contact:
zohra.ghannouchi@fao.org

Food and Agriculture Organization of United Nations

Natural Resources Assessment and Management (NRCE)

10

Annex 6.6: Global activities of the Joint Research Centre in support to FRA 2010 Global Remote Sensing Survey

JRC
COMMISSION EUROPEENNE

Global activities of the Joint Research Centre
(within its Framework Programme)
in support to FRA 2010 Global Remote Sensing Survey

1. Geographical and temporal focus
2. Objectives and methodological approach
3. Outputs



JRC
COMMISSION EUROPEENNE

Objectives

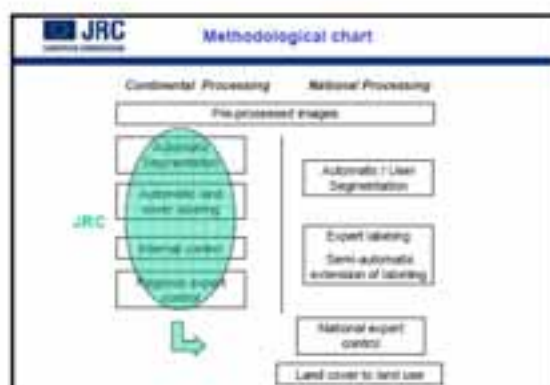
- To produce estimates by region & biome of
 - Tree cover
 - Tree cover change with change matrix
- Not a national monitoring – but can link to the national level or be intensified
- Method:
 - A sample of sites across the globe for which satellite data are collected



JRC
COMMISSION EUROPEENNE

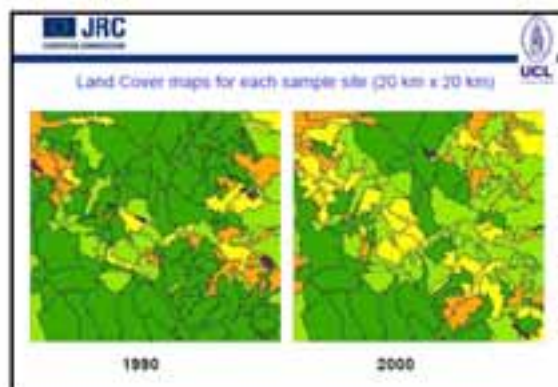
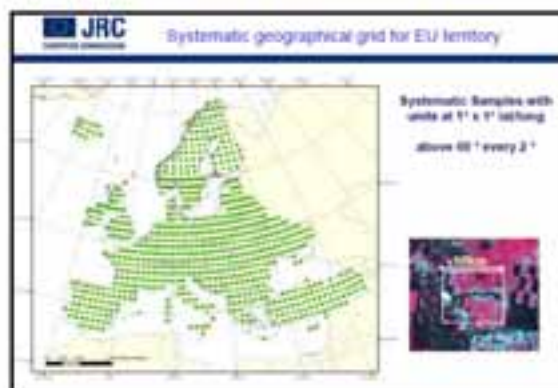
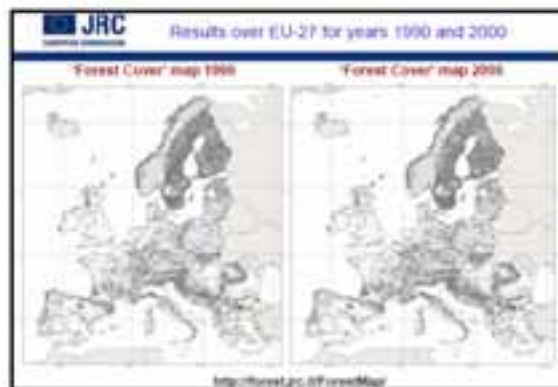
Satellite data for each sample site (20 km x 20 km)

1990 2000



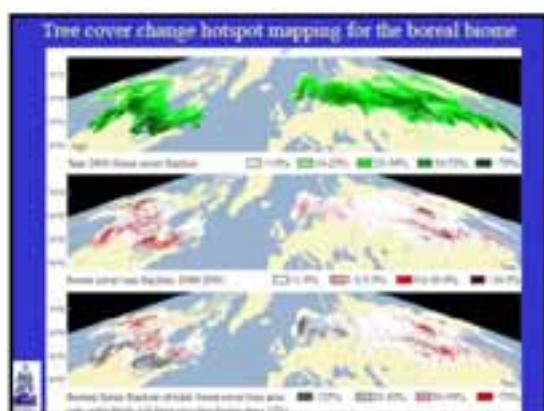
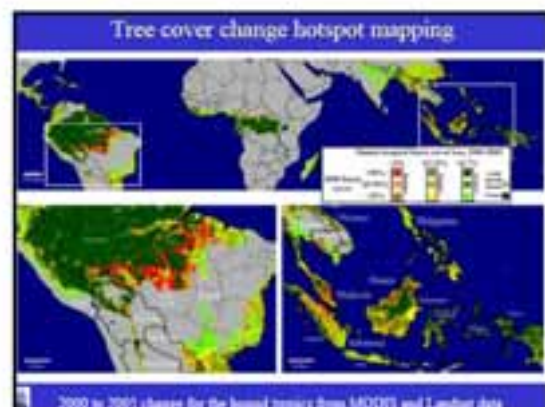
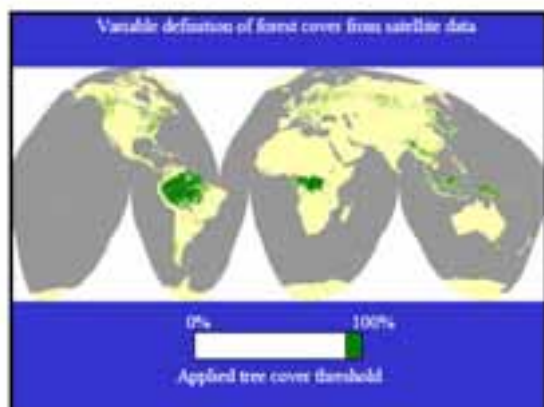
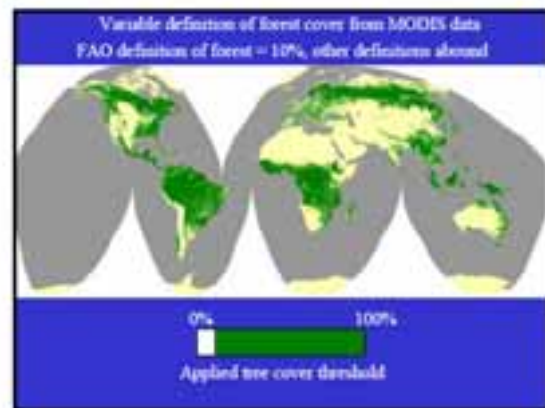
JRC What has been achieved so far

- Produced image data base and Forest Cover maps for European Union territory (1990 & 2000)
- Tested the methods over the Congo basin to produce Land Cover change statistics from 1990 to 2000
- Tested the sampling scheme with respect to full coverage as provided by INPE
- Tested an intensified sampling scheme with respect to a classical forest inventory (French Guiana)
- Created an image data base and screened the images for the Tropics

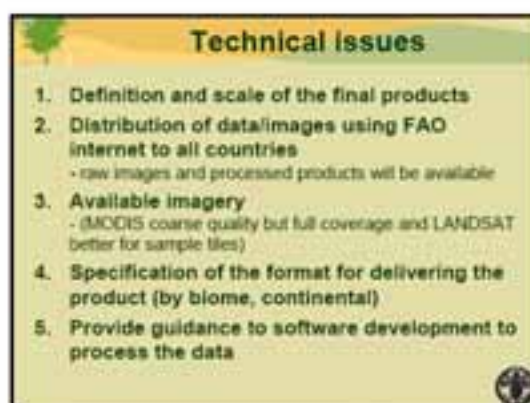
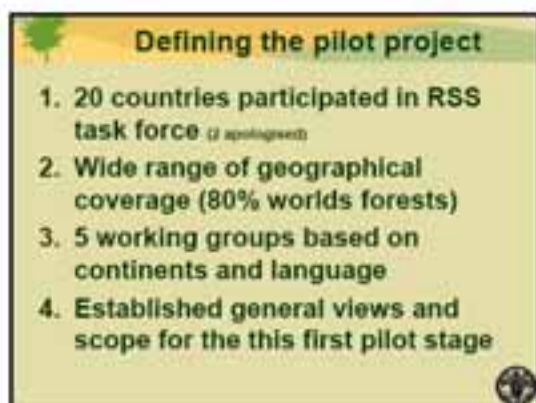
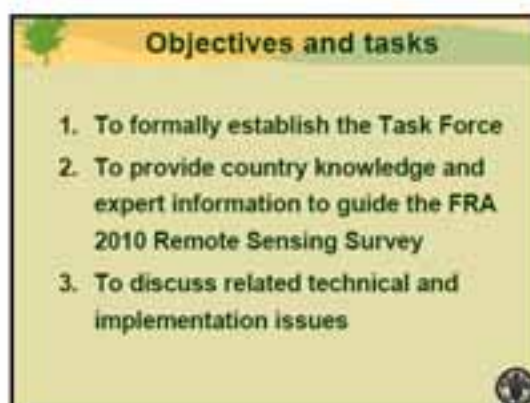


1. Screened preprocessed image dataset
2. Processed imagery
 - 2- levels segmentation
 - Preliminary Land Cover class labels
 - Change layer
3. Visually validated Land Cover products

Annex 6.7: New technology for forest cover mapping



Annex 6.8: FRA 2010 Remote Sensing Survey Task Force Report





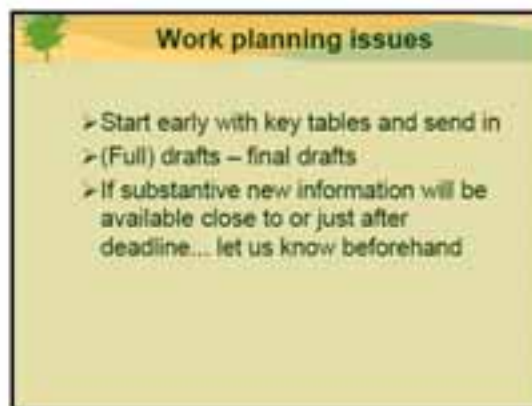
Conclusion - product outputs

1. Global tree cover map (trees, non-trees, water bodies) –not in FRA tables
2. Tree cover area and change (+/-) for 1975?(will be evaluated)
1990, 2000
2005 (when ready, late 2008)
3. Task force countries will test and refine the FRA RSS methods before available for all other countries to use



Annex 7: Plenary presentations (Friday 7 March)

Annex 7.1: Regional and National work planning: Report from the working groups



The slide has a light green background with a small tree icon in the top left corner. The title is in bold. Below the title is a table with three columns: Region/Sub-region, Tentative date(s), and Tentative place(s).

Regional / sub-regional workshops

Region/Sub-region	Tentative date(s)	Tentative place(s)
North America	June	Canada (NAFC)
Europe	January 2009	To be decided (TbD)
Russian-speaking	2 nd half October	Budapest
Asia	Beginning October	India / Malaysia / Maldives
Pacific	End April	Hanoi
Near East	October / June	Syria / UAE / Tunisia
Anglophone Africa	Mid September	Nairobi / South Africa
Francoophone Africa	Beginning Sept	To be decided
Latin America	End October	Brazil / Colombia
Caribbean	Mid Sept / end Nov	Belize / Guyana / Suriname

Annex 7.2: FRA 2010 Remote Sensing Survey working group issues



Wide range of issues raised

Q. Most working groups wanted more information on the RSS – answered here briefly & will be put on FRA FAQ
 A. It has just started - FAO will send out more details to National Correspondents on the RSS and expand info on the FRA website FAQ (Frequently Asked Questions)

Q. Some countries felt they were not adequately informed of the RSS in advance.
 A. RSS was discussed and agreed at Kofia in June 2006 but acknowledge gap since that time due to time taken to fund start up and also some NCC's have changed

General issues - resources

Q. Some countries disappointed they **did not get any points** (e.g. small island states)
 A. Unfortunately a drawback of low overall plot numbers and sample grid design.

Q. Other countries concerned that they got **too many points** - additional workload to process and handle data or conflict with other work priorities. Staff numbers not always proportional to number of samples per country.
 A. FAO recognizes workload but hopes that the benefits of the data and results are also seen as worthwhile. In some cases where there are a particularly large number of plots beyond the countries capacity to process then FAO will consider options to assist with additional support to process or contracts with modest \$ to fund classification and/or validation of images

Field work and varying country contributions

Q. Is field work required to validate the sample site areas (10,000 ha)?
 A. FAO does not require that countries check the plots in the field - checking should be done using existing readily available information

Q. When can countries start?
 A. Pilot stage for the RSS has only just begun this week - maybe 6 months for 20 countries, then remaining countries engaged

Q. Due to commitments and funding issues some countries will be interested in capacity building on the methods and techniques but not able to do the whole process - e.g. only validation phase
 A. FAO recognises varying levels of capacity and will assist with training where required. Level of engagement and amount of work to be done can be determined by country

Technical issues

Q. Many countries don't have experience in remote sensing
 A. This may be a good way to start with training and software provided by FAO.

Q. Definition and scale of the final products. Uncertainty over the scale and appropriate use of MODIS and LANDSAT imagery
 A. MODIS is coarse 250 m pixel size and LANDSAT is higher resolution 30 m pixels. Use will be further explained at training or through manuals.

Q. A standardised validation protocol needs to be devised by FAO / National etc. so as to ensure a common approach
 A. Good point - noted, draft developed for pilot testing

Caribbean

Q. The Caribbean countries were disappointed that the remote sensing experts did not show up to assist them in their deliberations (our apologies!)
 However, the group did provide a list of issues so we can consider and respond.

Q. Wanted more detailed information on the remote survey as it relates to methodologies.
 A. See www.fao.org/forestry/fig

Q. Where are the plots located?
 A. See www.confidence.org for points at junctions of 1 degree lat. and long. lines



Issues raised by Africa

- Q. Does verification imply visiting all sites? or do we use ancillary data and local knowledge to undertake the verification?
- Q. Access to field can be a problem in areas of civil unrest e.g. Dharfur – how to deal with these?
- A. *FAO does not expect any countries to put staff at additional risk to undertake the RSS – mostly a desk exercise*
- Q. Transfer from Land cover to Land Use is difficult.
- A. *Agreed. Will need discussion at training and careful implementation*

Issues raised by Africa

- Q. Is there any alternative survey method (e.g. aerial photography) to supplement the RSS?
- A. *Countries should use all available ancillary information to improve the analysis and classification*
- Aerial-photos are often very useful if available but at this stage are not planned to be provided through the RSS.*
- Q. Is there a facility to allow countries with existing imagery to enter the process?
- A. *Yes, existing imagery will be able to be used as well as that provided by FAO.*

- Q. What assistance is available to countries?

A. *Assistance will be provided in the form of remote sensing images, training and software to download view and do basic segmentation processing and classification of the images.*

- Q. Uncertainty as FAO appeared to not have decided the final processing methodology.

A. *Fair comment. FAO and partners have been testing various methods and this will continue through the Pilot Study with the 20 countries. These aim to refine the process to a standard or set of processes that can be applied to a range of forest types to provide good results.*

Issues / questions

- Q. Is software available to countries now?
- A. *The software is still under development and is not ready for release but will be finalised soon and tested in the 20 pilot countries over next 6 months or so then released to all other countries as part of training process.*
- Q. Some countries wanted extra software and equipment (egg computers, GPS, digital cameras, etc) to do the RSS
- A. *The RSS has limited funding for training workshops but not for equipment – no field work*

Near East RSS questions 2

- Q. Why end RSS project in 2011 if to be used for FRA 2010?

A. *RSS is separate component of FRA and not directly linked to the tables or country reports. The dates are largely driven by the availability of the spatially rectified imagery which in most cases won't be available till late 2008 or early 2009. Training workshops will be run in 2009 and then analysis in 2010, and report in 2011.*

- Q. What is required from countries, especially those who are not among the 20 pilot group? What should countries provide for in-kind support?

A. *Most countries do not need to do anything now except become informed of the RSS project and prepare for it by collating other ancillary information.*

Pacific RSS questions

- Q. Many Pacific countries were interested in RSS and disappointed that many small island states would not be covered in the 1 by 1 degree sample plots.
- A. The wide spacing presents some problems for small islands but FAO will investigate obtaining imagery that does cover islands that may be able to be used instead.
- Q. Many countries expressed interest in receiving training on the GIS software.
- A. This was noted by FAO and will be considered in developing RSS training and workshop plans. Some FAO GIS software is available free for FAO projects.

- Q. Are countries going to be informed officially?
- A. Yes, you are all now informed. FRA NCC's agreed at Kotka June 2006 to RSS and now officially started at FRA launch March 2008.
- Q. What will happen if a country does not collaborate? FAO to clarify.
- A. Participation in RSS is voluntary. FAO will prepare imagery and undertake initial analysis and there will need to be a decision taken if a country is not able to do any classification or validation as to how to proceed in consultation with the country.

Any further questions?

Please first look at:

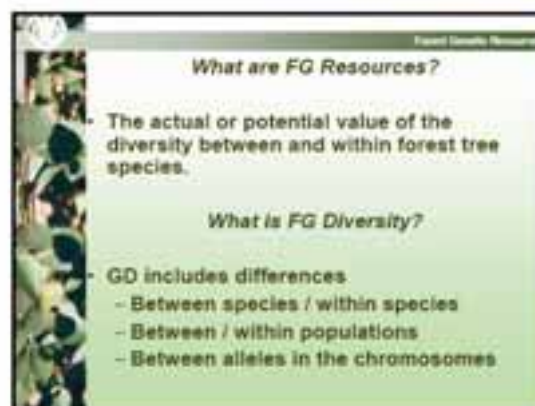
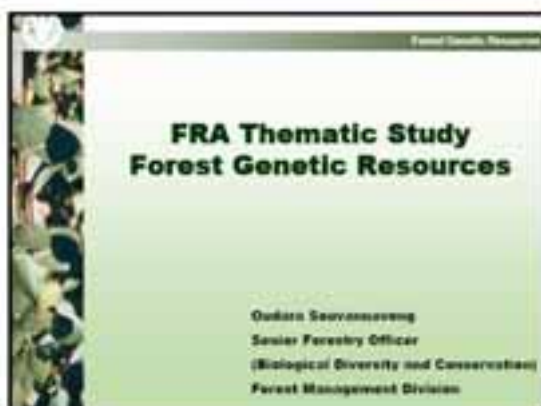
www.fao.org/forestry/fra

or e-mail:

adam.gerrand@fao.org

Thank you.

Annex 7.3: Forest genetic resources



PROPOSED FGD INDICATORS

- SPECIES**
 - Nbr native species by country
 - Nbr threatened species by country
 - Nbr "priority" species by country
- SUB-SPECIES**
 - Nbr genealogical zones by species
 - Nbr trees by genealogical zone

Additional FGD criteria?

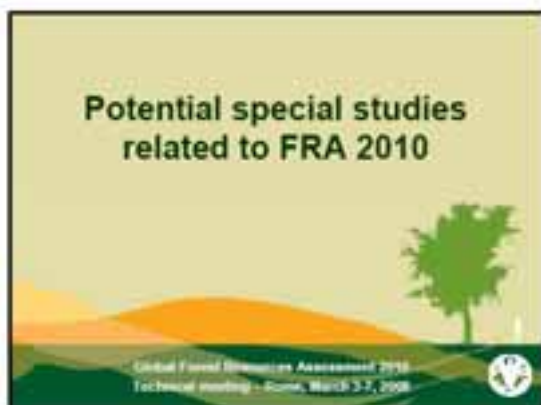
- Country membership of network on FGR
- Existence of a national FGR program
- Delimitation of ecogenecological zones
- Existence of legal instrument on ABS for forest trees
- FROM MANY CRITERIA TO A SINGLE INDEX?

Regional Workshops on Forest Genetic Resources

Eco-region	Nbr countries	Country status report	Priority species	National species list	Populatio on forest
Neotropical South America (1995)	3		+	-	-
Neotropical Central America (1995)	20		+	-	-
Sahelian Africa (1995)	15	+	+	-	+
Palearctic Europe (1995)	28	+	+	-	+
Indomalayan, Southeast Asia (1995)	9	+	+	-	+
South East Asia (1995)	9	+	+	-	+
Central America (1995)	3	+	+	-	+
Central Africa (1995)	5	+	+	-	+
South Asia (1995)	15	+	+	-	+

Thank you

Annex 7.4: Trees outside forest



Issues and trends

- The trends of trees outside forest are rarely known at national level.
- There is no good approximation at global level.
- Who knows the status of the world's agroforestry, its trends and outlook?
- The complexity of the resource systems lead to institutional, methodological and operational difficulties for their assessment

Background and rationale

- TOF not systematically assessed at national level
- TOF not defined
- Institutional frameworks complexity: responsibilities, harmony, overlap, gaps (e.g. agroforestry, mwp, urban forestry, wood energy)
- Kotka III (1996), IV (2002), V (2006)
- Expert meeting on TOF (Rome, 2001)
- Working Group on TOF at Kotka V

Achievements to date

- Definition agreed and elaborated
- Publications on the concept, methodologies, case studies, national reports, LFCC thematic reports (including in FRA and SOFO reports)
- National Forest Assessments (nfa)
 - Completed: Bangladesh, Cameroon, Costa Rica, Guatemala, Honduras, Lebanon, Philippines, and Zambia
 - Ongoing: Angola, Congo, Kenya, Kyrgyzstan
 - Initiated: Algeria, Brazil, Nicaragua
- Capacity building

Proposal

- **WHAT:**
 - Special study on TOF
 - Develop and publish (e.g. case studies, lessons learned, assessment practices)
- **HOW:**
 - Task Force on TOF for guidance on Thematic Study
 - Suggestions from National Correspondents and other Partners and Stakeholders
 - Assist countries in assessment in view of capacity building and methodologies development and validation
- **WHERE & WHEN**
 - To be defined

Proposal

Proposal for a Task Force for the Thematic Study
Scope and Objectives
... some elements for consideration ...

- Definition of the scope of a thematic study on assessment and monitoring of trees outside forests
- Clarification and Confirmation of Definition
- Review and Collation of Existing TOF Assessment Methodologies and Assessment Results with a view to eventual standardization and categorization of variables
- Harmonization of TOF assessment data gathering and analysis with FRA reporting format
- Production of Guidelines for the FRA National Correspondents
- Provision of technical assistance and advice to countries on TOF reporting

Desired outcomes

- Report on the Thematic Study
- Data gathered, analyzed and available
- Case-studies and lessons learned published
- Institutional and sectoral dialogue and cooperation
- Capacity building of national correspondents and other stakeholders
- Recommendations for further development
- Contribution towards the world's state of TOF

Potential partners

- Examples of Partners in case studies:
Global, concept, methods (ICRAF and RED-Développement)
Costa Rica (CARE),
France (INP) and Bologna Association
India, Indonesia (International Centre for Forest Research)
Kenya (Moi University)
Mali (Institute of Rural Economy)
Morocco (École nationale forestière d'Ingénieurs)
Namibia (Ministry of Environment and Tourism)
Sudan (University of Khartoum)
- Other international institutions involved to now: ICRAF, WRI, ...
- Kotka V working group on TOF
• Bangladesh, Guatemala, ICRAF, India, and South Africa
- National institutions: in all regions
- UN agencies and others...

Publications

List of Selected Publications & Publications available


available
Red Room Desk



Contact


Michelle Gauthier
Forestry Officer
Forest Conservation Service
FAO, Rome, Italy
Tel: ++ (39) 06-5705-3692
michelle.gauthier@fao.org

Annex 7.5: Wood energy statistics



Wood Energy Statistics


- Background
- Rationale
- Proposal
- Desired outcome
- Potential partners



Wood Energy Statistics

Background


- WE statistics are vital for:
 - understanding dynamics of WE Systems
 - evaluating role of WE in forestry & energy sectors
 - assessing energy use of forest products
 - formulating forestry, energy & WE policies
- Quality/quantity of "WF" data are limited but improving...



Wood Energy Statistics

Rationale - Main Issues


- Weak institutional capabilities
- Differences in "Forestry & Energy" approaches
- Discrepancies in reported values
- Inconsistency in terminology & definitions
- Differences in measurement units



Wood Energy Statistics

Proposal

- What: To improve the reliability of WE-DB at national level
- How: To undertake ad hoc WF surveys
- Where: Selected pilot countries



Wood Energy Statistics

Desired outcome

- Updated WE-DBs in selected countries
- Access to WE-DBs improved
- Inter-sectoral linkages established
- Harmonized WE definitions and references

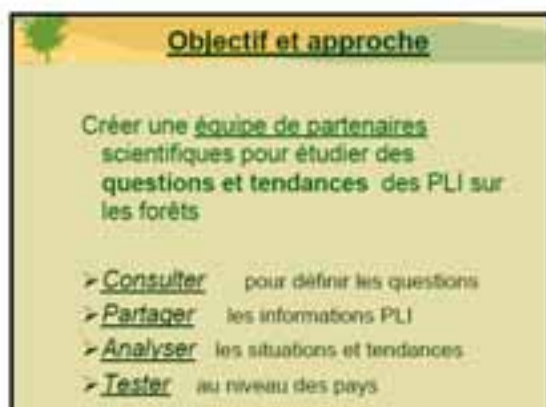


Wood Energy Statistics

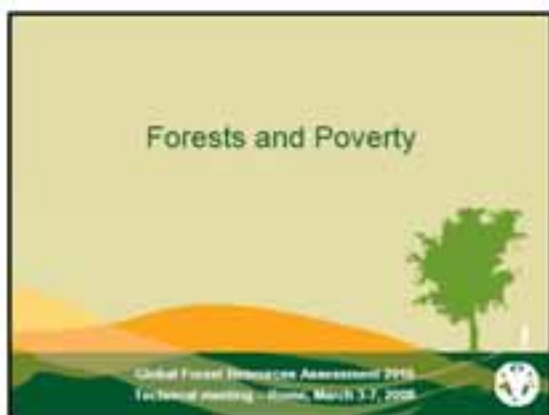
Potential partners

- **Energy Units:**
IEA, & UN-New York, AFREC, OLADE...
- **Forestry Services:**
EUROSTAT, ITTO, ECE, EFL, OECD....

Annex 7.6: Forest policy legal and institutional framework



Annex 7.7: Forest and poverty



Background

- Outdated forest inventories
- No data to build case
- Limited government buy-in



A photograph of a person in a red shirt and dark skirt standing in a forest, looking at a tree.

Proposal

- Link
 - population & spending
 - ecosystems & services
- Show
 - how natural resources are connected to well-being & economic growth



Two photographs: the top one shows a person in a purple shirt carrying a large bundle of sticks on their head; the bottom one shows a person pushing a cart loaded with yellow sacks.

Expected outcomes



Two photographs: the left one shows a person in a red shirt standing in a field; the right one shows a person sitting and working with a bowl.

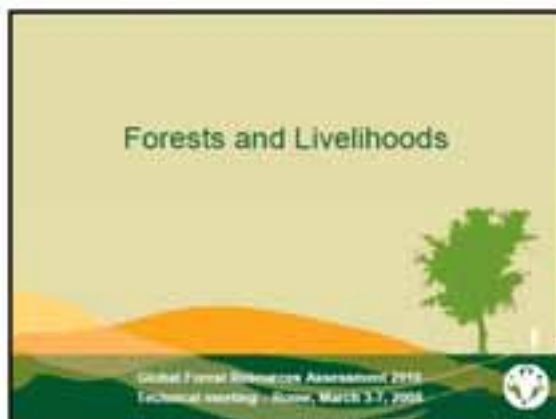
Demonstrate relationship between:

- Land, people, prosperity
- poverty reduction in the hardest hit areas
- better use of natural resources

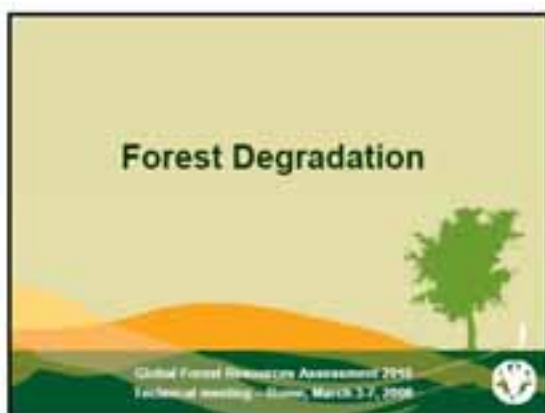
Potential partners

- Other divisions in FAO
- National Forest Programme Facility
- World Conservation Union
- World Resources Institute
- International partners, for example
 - Norway
 - the Netherlands
 - USAID

Annex 7.8: Forests and livelihoods



Annex 7.9: Forest degradation



Rationale

- REDD (Reduced Emissions from Deforestation and Degradation)
- UNFF Global Objective 1 (... and increase efforts to prevent forest degradation)
- Lund 2001
- Harmonization of Forest-related Definitions (FAO, IPPC, CIFOR, UNEP, IUFRO ...):
 - Forest degradation is the reduction of the capacity of a forest to provide goods and services

Parameters

- **Forest type:** secondary forest
- **Fragmentation**
- **Change within the forest:** structure; crown cover; species composition; stocking
- **Reduction of capacity to provide:** Goods; services; carbon stocks; other functions
- **Time scale:** specified duration
- **Cause:** human-induced; natural
- **Reference state:** natural forest site; carbon stock at initial date...

Proposal

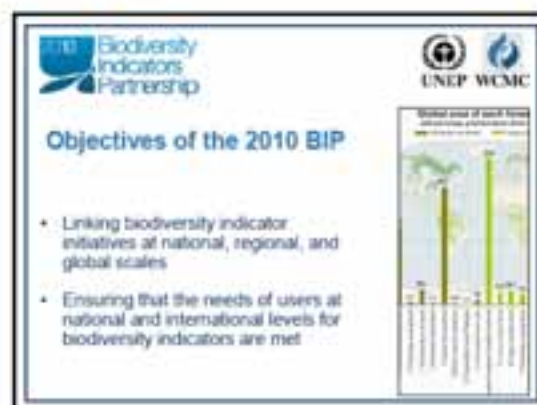
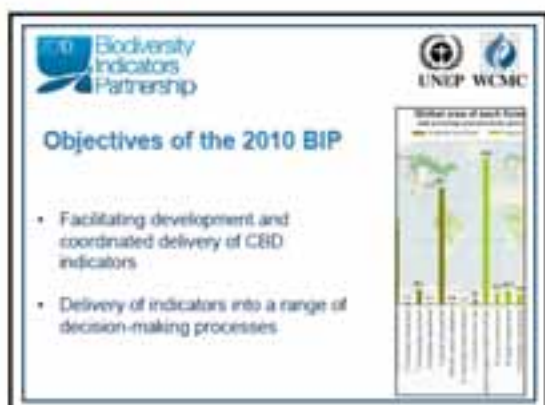
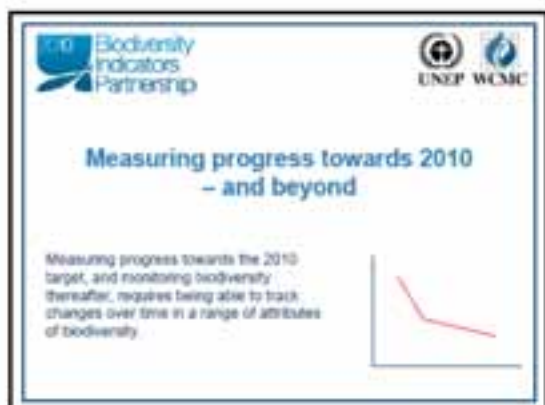
- Review available definitions of forest degradation
- Identify parameters of forest degradation
- Review available methods for assessing (some of) these parameters or suitable proxies
- Compilation of best assessment practices



Desired outcome

- Awareness of the many facets of "forest degradation"
- Operational definitions of components of forest degradation
- Tools to help assess and monitor forest degradation – or components thereof



Annex 7.10: The 2010 Biodiversity Indicators Partnership and beyond



BIP – a collaborative effort in support of the CBD process

- Support to implementing the CBD 2010 targets and indicators framework
- Feeding into *Global Biodiversity Outlook 3*
 - Chapter on status & trends




2010 BIP and Forests



- Collaboration necessary to address complex issues
 - Data from diverse sources & sectors
 - Relationships between indicators
- Making forest-related information useful for biodiversity conservation and sustainable use
- Supporting countries in their indicator development and to mainstream biodiversity and bridge gaps between sectors




Trends in specific forest types


- e.g. Cloud forests
- Building on baselines and working with collaborators to identify trends
- Relevant at scales from national to global



Trends in forest protection & its effectiveness

- Combining forest maps with the World Database on Protected Areas
- Can also provide information on specific forest types






Trends in forest species

- Species abundance from subsets of the Living Planet Index
- Status of threatened species from subsets of IUCN Red List Index






CBD indicator: area of forest under sustainable management

Exploring a proxy indicator: area under certification

1. Analyse biodiversity components of certification schemes
2. Extent of forest area certified >>> trends
3. Overlap of certified forests with other areas of biodiversity interest/concern

**CBD Indicator: area of forest under
sustainable management:
certification**

- Does certification improve the status of biodiversity?
- Are certified areas those most in need of improvement?

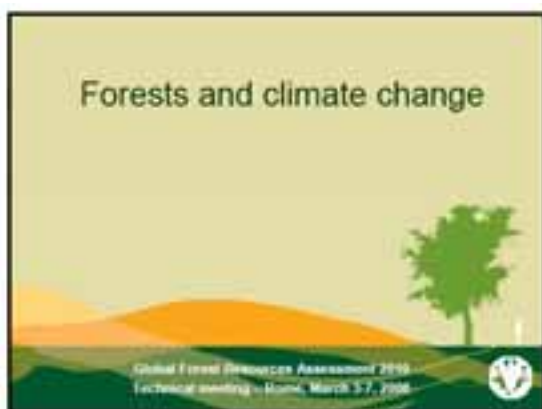
Emerging issues also relevant to BIP

- Climate Change and Reducing Emissions from Deforestation and Degradation (REDD)
...considering the implications for biodiversity

www.twentyten.net

matt.walpole@unep-wcmc.org

Annex 7.11: Forest and climate change



Forests and climate change

- Important political issue
- Opportunity to raise political profile of forests
- First subject mentioned in FRA 2010 leaflet

Existing reporting

- UNFCCC: carbon: planting since 1990, land use change, etc
- Global FRA: carbon (Table 8 for FRA 2010)
- Global FRA net changes in area deforestation estimate - carbon emission

Forests and climate change - the interactions

- Carbon
 - sequestration and reducing emissions from deforestation
 - other effects also important, e.g. for wood fuels and wood products need Life Cycle Analysis
- Other impacts on climate (e.g. reduce flooding)
- Climate changes affect trees - need for adaptation

Potential Special Study

- Many studies in past and planned (e.g. Bali Action Plan, UNECE)
- None provides comprehensive analytical framework
- Proposed special study for FRA 2010
 - Review literature and other studies
 - Establish analytical framework
 - Economic values
 - Assess feasibility of country data
 - Country case studies

Annex 8: Working group Reports

Annex 8.1: Terms of Reference working group 1

Working group composition and organization:

The composition of the working groups and meeting rooms will be announced during the introduction to the working group sessions on Tuesday morning (plenary). Each group should select a chair person and a rapporteur, responsible for taking notes and summarizing main discussions and outcomes as group reports.

Tasks:

The objective of this exercise is to ensure a proper understanding of how to compile the country reports.

The working groups should identify and discuss issues / questions related to:

1. The general reporting methodology (documentation of national data, data sources and analysis of national data).
2. The 17 National Reporting Tables.

Expected Outputs:

The working group should summarize discussions and compile a list of issues / questions related to the outlined tasks (above).

Report format:

	Summary of discussion/issues/questions
General reporting methodology	
Reporting table T1	
Reporting table T2	
....	
Reporting table T17	

Follow up:

At the plenary session on Thursday morning (09:00 – 10:00), the FRA secretariat will present the outcome of the working group sessions and discussions on main issues.

After the meeting, the document *Guidelines for Country Reporting to FRA 2010* will be updated and/or a list of frequently asked questions made available on the FRA Website, taking into account the specific issues and questions discussed in the working groups.

Background Material

Specifications for the National Reporting Tables for FRA 2010
Guidelines for Country Reporting to FRA 2010

Suggested timetable for working groups

Day 1 (14:00 – 17:00, Tuesday 4 March)

- Discussion on general reporting methodology
- Review of National Reporting Tables T1 – T9

Day 2 (09:00 – 12:00, Wednesday 5 March)

- Review of National Reporting Tables T10 – T17

Annex 8.2: Working group composition

Russian speaking	
Statistics room C 400 FAO resource person: Anydas Labedys	
Armenia	
Azerbaijan	
Belarus	
Georgia	
Kyrgyzstan	
Lithuania	
Republic of Moldova	
Russian Federation	
Tajikistan	
Ukraine	
Uzbekistan	

Groupe francophone	
INDIA ROOM A327 FAO resource person : Jean-Louis Blanchet	
Angola	Guinea-Bissau
Benin	Haiti
Burkina Faso	Madagascar
Burundi	Mali
Cape Verde	Niger
Cameroon	Rép. dém. du Congo
Camerun	Rwanda
Congo	Senegal
Côte d'Ivoire	Tchad
Djibouti	Togo
Gabon	
Guinée	

Anglophone Africa	
LEBANON ROOM D209 FAO resource person : Laura Russo	
Eritrea	Namibia
Ethiopia	Nigeria
Gambia	Seychelles
Ghana	Sierra Leone
Kenya	South Africa
Lesotho	Swaziland
Liberia	Uganda
Malawi	United Republic of Tanzania
Mauritius	Zambia
Mozambique	Zimbabwe

Caribbean group	
Cuba room B224 FAO resource person : Simonette Rose	
Barbados	
Belize	
Dominica	
Grenada	
Guyana	
Jamaica	
Montserrat	
Saint Kitts and Nevis	
Saint Lucia	
Saint Vincent and the Grenadines	
Suriname	
Trinidad and Tobago	

Pacific group	
E-learning lab- Main Library Build A FAO resource person: Oerjan Jonsson	
Australia	
Cook Islands	
Fiji	
Kiribati	
New Zealand	
Niue	
Papua New Guinea	
Samoa	
Solomon Islands	
Tonga	

Latin America- Spanish	
CANADA ROOM A356 FAO resource person: Lars Gunnar Marklund	
Argentina	Guinea Ecuatorial
Bolivia	Honduras
Brazil	Mexico
Chile	Nicaragua
Colombia	Panama
Costa Rica	Paraguay
Cuba	Peru
Ecuador	República Dominicana
El Salvador	Uruguay
Guatemala	Venezuela

Asia	
PAKISTAN ROOM A127 FAO resource person: Monica Garzuglia	
Bangladesh	Maldives
Bhutan	Mongolia
Cambodia	Myanmar
China	Nepal
DPR Korea	Pakistan
India	Philippines
Indonesia	Republic of Korea
Iran (Islamic Republic of)	Sri Lanka
Japan	Thailand
Laos	Timor Leste
Malaysia	

Near East - Arabic speaking	
Forestry room D440 FAO resource person: Mohamed Saket	
Algerie	
Egypt	
Iraq	
Liban	
Libyan Arab Jamahiriya	
Moroc	
Mauritania	
Saudi Arabia	
Sudan	
Syrian Arab Republic	
Tunisie	
United Arab Emirates	

UNECE- English		
PHILIPPINES C277/281 Resource person: Mette Wilkie		
Albania	France	Poland
Austria	Greece	Romania
Belgique	Hungary	Serbia
Bulgaria	Ireland	Slovakia
Canada	Ireland	Slovenia
Croatia	Israel	Swiss
Cyprus	Italy	Sweden
Czech Republic	Latvia	The FYR of Macedonia
Denmark	Luxembourg	Turkey
España	Montenegro	United Kingdom
Estonia	Norway	United States of America
Finland		

Annex 8.3: Russian speaking countries

Item	Summary of discussion/ issues /questions
General reporting methodology	Translation of documents to Russian is wrong sometimes, needs refinement. Will countries be able to provide country reports in Russian?.Concern regarding “jumps” due to methodological changes in inventories. E.g. in Russia it’s a question of some 50 billion m3 of growing stock volume (6% of total). Countries are not keen to revise old figures backwards (especially 1990). How FAO will handle this data in trend analysis?
Reporting table T1	
Reporting table T2	
Reporting table T3	
Reporting table T4	Would be better no to have “multiple use” in the table, there is a risk that most of forests will go there. Forest area under sustainable forest management – concern that figures will be very subjective and will lead to incomparability between countries for T4a, it will be difficult to recalculate/provide 1990 data
Reporting table T5	Why natural regeneration is excluded? In many countries it is part of silvicultural practices and equally treated as reforestation by planting/seeding. Example: in Georgia (also in Lithuania) they plant felled coniferous stands, but leave for natural regeneration some broadleaved species (beech, ash, alder, aspen). Also in some cases they do “support to natural regeneration”, i.e. supplement with seedlings naturally regenerating felling areas. Where to report this “support to natural regeneration” in the table?
Reporting table T6	Usually statistics are available by dominating species in stands only, not by each species. I.e. if the stand consists of 60% Spruce + 30% Birch + 10% Aspen, it is considered as Spruce stand and statistics on growing stock are reported for whole stand, not the 3 species separately.
Reporting table T7-T8	concern about default value 0.47, it was used 0.5 by Russia in other reporting (IPCC) and FRA2010 published figures would differ from published figures already (other reporting processes)
Reporting table T9	Concern about total land area affected by fires, not sure if they can get data E.g. in Ukraine sometimes they have 2 or more fires per year in the same agricultural areas, how to handle this in reporting? To report 2 ha for the 1 ha which was burned twice during the same year?. Russian F. will not be able to report data for other wooded land
Reporting table T10	How to define if the outbreak is “major”?
Reporting table T11	How to value the wood (fuelwood) which is given for free to local communities? To put zero unit value? (in Russia can be millions m3 in remote areas). Should they report illegal wood volume and value?
Reporting table T12	OK, but data will be very limited
Reporting table T13	
Reporting table T14	Confusion about forest policy, what is policy/strategy/programmes – what’s the difference, interpretation in country varies. Law – is it possible to include other laws regulating forest management (nature protection, hunting)
Reporting table T15	
Reporting table T16	overall ok, but in former USSR countries they use different education categories and got confused (can be solved during regional WS)
Reporting table T17	The idea is well understood, it would need a simple approach to define state budget contributions to forestry and incomes from forestry, excluding state budget relations related to the forestry sector in gene definitions not clear at all (what to include, what to exclude)

Annex 8.4: French speaking African countries

Item	Summary of discussion/ issues /questions
General reporting methodology	L'équipe propose la mise en place d'équipe FRA national. Le groupe a décidé de mettre en place un forum de discussion et d'échange par le net pour mieux développer la dynamique initiée durant les présentes assises.
Reporting table T1	Dans l'ensemble, les définitions des classes de FRA 2010 proposées par la FAO intègre les préoccupations des correspondants nationaux. Toutefois, le problème des spécificités a été abordé comme le cas du « maquis », formation végétale présente dans la plupart des pays méditerranéens notamment en Algérie. Le groupe a demandé que ces problèmes de classifications soient traités au sein des équipes nationales de FRA en collaboration avec la coordination FRA de la FAO.
Reporting table T2	
Reporting table T3	Le problème de la fonction de la forêt a été posé car en général les forêts sont à usages multiples. A cette préoccupation, le groupe a recommandé de faire ressortir la fonction dominante de la forêt pour déterminer la fonction à lui assigner. Dans certains pays, la différenciation entre « conservation et protection » n'est pas facile à faire.
Reporting table T4	Pour certains correspondants nationaux, l'expansion naturelle de la forêt est une réalité dans leurs pays, mais cette donnée n'est pas toujours accessible du fait de l'absence d'étude sur ce sujet.
Reporting table T5	La définition des variables « Reboisement » et « Boisement » est claire pour tous, cependant le groupe note la difficulté de différencier à partir des rapports des pays les superficies pour chacune de ces catégories, surtout pour des plantations âgées.
Reporting table T6	Le groupe a relevé les difficultés de remplir ce tableau du fait d'absence pour certains pays d'inventaire national. La question du programme de la FAO d'appui aux pays émergents pour la réalisation d'inventaires nationaux et de l'installation et du suivi des placettes permanentes de sondage a été posée. Le groupe a aussi noté l'inadéquation de l'intitulé de T6b « ... des dix espèces les plus répandues... » en indiquant leur incidence sur le volume de bois sur pied, car ce terme fait plus référence à la distribution spatiale de l'espèce, donc aux effectifs qu'au volume. Le groupe pense que c'est probablement un problème de traduction, et propose le libellé suivant : « ... des dix espèces les plus importantes en matière de volume... » En définitive, pour le groupe : <ul style="list-style-type: none"> • Espèce répandue = liée à l'expansion spatiale de l'espèce • Espèce prioritaire = liée à l'importance économique de l'espèce
Reporting table T7-T8	Dans la plupart des pays, les données de base permettant de remplir ces tableaux n'existent pas, du fait de l'absence d'un inventaire national. Le remplissage des tableaux T6, T7, T8 nécessitent ainsi un appui de la FAO aux équipes nationales de FRA 2010.
Reporting table T9	Certains pays ont affirmé la difficulté de faire la répartition des superficies brûlées entre les catégories « Forêts » et « Autres terres boisées ». Un pays a évoqué le problème de la divergence de chiffres avancés dans l'estimation des superficies brûlées entre l'administration forestière et un centre de télédétection.
Reporting table T10	Autres perturbation influençant la santé et la vitalité des forêts. Le groupe de travail a relevé que l'estimation des superficie infestées par les insectes est difficile à déterminer du fait que les données existantes sont en général du secteur agricole ; dans ce cas le groupe propose que le FRA National se rapproche des Services de l'Agriculture pour mieux évaluer la partie forestière perturbée
Reporting table T11	Extraction de Bois et Valeur de bois extrait :

	Pour certains pays le manque d'enquête de consommation ne permet pas d'évaluer l'auto consommation en bois énergie. Dans ce cas le groupe propose que les pays concernnés utilisent les données des pays voisins en attendant de trouver les moyens nécessaire pour mener les enquêtes au niveau national. Le groupe demande au FRA National de se rapprocher des Services de l'Energie de leurs pays ou d'utiliser les données des organismes internationales comme la FAO
Reporting table T12	Extraction des produits forestiers non ligneux et valeur PFNL extrait L'estimation des PFNL est difficile à faire du fait que la plupart de ces produits échappent au contrôle des services techniques (Eaux et Forêts et Douanes). Un appui de la FAO ou d'autres partenaires est nécessaire pour mieux estimer ces produits à partir des enquêtes flux , des études de marchés et des inventaires
Reporting table T13	Emploi : Le groupe note la difficulté d'évaluer les emplois forestiers à cause du caractère informel de certaines filières du secteur, il demande par conséquent aux FRA NATIONAUX de faire des estimations à partir des études d'experts
Reporting table T14	
Reporting table T15	
Reporting table T16	
Reporting table T17	

General recommendations

R1 Le groupe demande à la FAO un appui financier, matériel et technique aux équipes FRA.

R2 le groupe demande à la FAO d'appuyer les pays pour la réalisation d'inventaires nationaux et de l'installation et du suivi des placettes permanentes de sondage.

R 3 le groupe sollicite un appui de la FAO pour l'évaluation de la RN de certains pays qui ne disposent pas de données, fautes d'études.

R4 le groupe demande la participation des suppléants FRA lors des ateliers régionaux et sous régionaux et lors des séances de formation.

Annex 8.5: English speaking African countries

Item	Summary of discussion/ issues /questions
General reporting methodology	<p>Problems vary from country to country and it would have been better if small groups were created initially to deliberate on problems associated with individual countries and also to understand better 2010 FRA reporting documents more especially among new NCs before the plenary session. Small countries normally encounter technical problems when filling in the tables because of insignificant figures encountered. Small countries (e.g. Seychelles Island) are always at disadvantage when reporting because the units used for the FRA reporting are too big e.g. 1000 ha etc. It is recommended that smaller units be included for small countries.</p> <p>The inclusion of farm forest will make 2010 FRA reporting very complex. In Kenya (and I hope most countries will share my view) almost all lands that produce the bulk of forest products are from farm forest so if these vast areas are not captured in the report then we will be misreporting.</p> <p>The inclusion of remote sensing in 2010 FRA will create problems for countries that do not have the capacity. The skills needed to undertake remote sensing and the interpretation of the results may be lacking especially in some African countries.</p> <p>Is there a minimum threshold below which a data cannot be used for 2010 FRA extrapolation?</p> <p>On the issue of methodology, can one make an assumption when forecasting? For instance, during election year the forest resources could be used to woo people to vote in a certain line hence projections can be very deceptive. In Liberia because of the war most data is either unavailable or unreliable. Corruption also attained its maximum height during the war period. Hence, completing the tables from 1990 will result in a lot of inaccuracies. How to harmonise our information?</p>
Reporting table T1	<p>Is there a way of rewording 'all other wooded land'?</p> <p>There are so many aggregate of small woodlots and remnant forest that do not reach 0.5 ha individually so a good chunk of forest will not be captured</p> <p>In some countries urban forestry is practiced in cities and some of them have tree cover exceeding 0.5 ha. How do we classify this?</p> <p>Looking at the definition of a forest under FRA, most savannah forest may not qualify and as a result not captured. This means large areas of savannah forest will not get a place under FRA</p> <p>If we go strictly according to the definition of a forest then to some of us our forest is increasing in terms of land but we were not reporting rightly so can we correct certain reports (tables) that have been made in the past FRA reports?</p> <p>In Uganda, not all areas gazetted as forest reserves have forest but the intent is to get all of them forested. Now somebody might quote the total gazetted area as the total forest and that is misleading so members should take note of this.</p> <p>Most countries have their national standards that might not fit into the Global standards. How can the national standards fit into the global standards</p> <p>Is FAO going to assist needed countries to acquire satellite imageries, aerial maps, remote sensing survey etc?</p>
Reporting table T2	<p>Are we referring to land ownership or resource ownership?</p> <p>Can we classify leased land as personal ownership and if so what is the threshold period?</p>
Reporting table T3	<p>Almost all the functions are met by forests in my country so where does the management option fits</p> <p>When one examines table T3b, is there a forest that is managed sustainably without a management plan?</p>
Reporting table T4	Should indigenous species be reported?
Reporting table T5	

Reporting table T6	Clarify the meaning of “10 most common species” Confusion between commercial GS and GS of most common species. Will be quite difficult to estimate the GS of species in natural forests, easier for plantations What to do when only 2 commercial species exist in a country?
Reporting table T7-T8	
Reporting table T9	The frequency of fire would be easier to report than the area affected. And it will be difficult to separate the forest area
Reporting table T10	Clarify the definition of invasive species. Mauritius – the Chinese guava threatens the environmental aspect but it is beneficial for socio-economic reasons For some species it will be difficult to estimate the total area affected because they develop in patches- Maybe use percentage of land affected?
Reporting table T11	Some wood is not used for either industrial or woodfuel purposes (cultural uses)
Reporting table T12	How to convert into kilos the measurement traditionally used for measuring NWFPs What to do when they have no information for 2005 but for later years. Wild honey, in Tanzania, refers to honey collected in an unauthorised way in the forest-
Reporting table T13	Bulk of employment is in the informal sector and will be very difficult to capture How to include casual and season labour/employment Clarify the issue of the reference period for the FTE. Employment through participatory forestry management. A new dimension in Africa that should not be hidden under the self-employment category
Reporting table T14	There should be an opportunity to report on policy in progress (because it takes a long time for laws, and acts and statements to be endorsed)
Reporting table T15	
Reporting table T16	Limit to those active in service not all graduated Reporting should also be specific competences/ technical expertise (such as forest inventory specialist, GIS specialists, etc) rather than general degrees (that is, on capacity to handle and manage specific technical issues)
Reporting table T17	Clarification needed on whether to report on sectors which are normally not accounted for under forestry (but included in the definition in the table- hunting fee, trophies,) and on revenues from products which instead the countries consider coming from forestry but according to FRA definition of forests they would not be included (for example coming from OWL)

Annex 8.6: Caribbean

Item	Summary of discussion/ issues /questions
General reporting methodology	<p>Major events affecting the submission deadline.</p> <p>The 2009 and 2010 hurricane seasons (June – November) can have an effect on the reliability of the report if the deadline remains as March 2009. This is particularly of concern for small island countries.</p> <p>The 2008 hurricane season may impact on countries ability to provide reliable data.</p> <p>Problems with Accurate Inventory Data:</p> <p>National forest data outdated therefore, data will not be fully reliable to complete FRA 2010:</p> <ul style="list-style-type: none"> • Guyana, 1950, 1975, • Grenada (unknown) • Jamaica, 1998, • St. Lucia, 1981 • St. Vincent and the Grenadines, 1991, • Suriname 1974 (1998 LandSat), • Trinidad and Tobago, 1980, <p>Countries with no national inventory:</p> <ul style="list-style-type: none"> • Belize, Barbados, St. Kitts and Nevis <p>Countries require new national land use assessment. Requesting assistance from FAO to provide the latest remote sensing images and technical support (training, equipment, etc.).</p> <p>Biomass and Carbon Stock:</p> <ul style="list-style-type: none"> • FRA 2010 regional workshop should address training in preparing information for Table 7 and 8. <p>Visibility of Results in the Global Report:</p> <p>It is the general concern that the Caribbean countries (with the exception of Suriname) data is not visible because of the size of the countries relative to the size of the reporting units. It is therefore recommended that;</p> <ul style="list-style-type: none"> • a separate report be prepared for Caribbean countries and; • data from Caribbean countries be aggregated in the global report. <p>There is no place in the report where assumptions on which estimates are based can be placed to allow for continuity;</p> <p>Unit for reporting too high for Caribbean countries;</p>
Reporting table T1	<i>Forest and other lands on private lands, and other lands of which with tree cover cannot be accurately estimated due to lack of data. Assistance is required to obtain more precise data</i>
Reporting table T2	<p>Lack of appropriate cadastral data can affect reporting;</p> <p>In Belize, legal interpretation of all trees, regardless of ownership of land on which trees falls, belongs to the state;</p> <p>Further subdivision of private forest into individual, institution and communities may pose a problem in providing precise data</p>
Reporting table T3	Generally, entire watersheds/forest ranges are listed as multiple use and with no geophysical designated boundaries for activities. This will create difficulties in providing information for these tables
Reporting table T4	Trinidad, teak which was introduced in 1913, how should this be classified?
Reporting table T5	Data on ' <i>natural expansion of forest</i> ' not available;
Reporting table T6	<p>Unit (Million cubic meters over bark) for reporting too high for Caribbean countries;</p> <p>Lack of inventory data;</p> <p>Can the IPCC defaults be used in the absence on country-specific data?</p>
Reporting table T7-T8	Most countries do not have experience in calculating biomass
Reporting table T9	Most countries do not have experience in calculating carbon stock
Reporting table T10	Unit (<i>number of fires and area (1000 hectares)</i>) for reporting too high for Caribbean countries;

	Lack of data. In the absence, estimates have to be made; however, there is no place in the report where assumptions can be placed to allow for continuity;
Reporting table T11	
Reporting table T12	Wood products other than round wood and fuel wood (informal sector) are not captured, e.g. yam sticks, wood used in fish pot construction and subsistence, etc.
Reporting table T13	data on some of the categories of NWFP's are not collected because it is an informal industry; e.g. raw materials for medicine and aromatic products; materials for colorants and dyes, etc. How to classify honey products from managed farms since, in Caribbean countries bees forage in the forest?
Reporting table T14	Difficult to provide information on ' <i>self-employed</i> ' Unit (<i>1000 persons/ year</i>) for reporting too high for Caribbean countries;
Reporting table T15	
Reporting table T16	
Reporting table T17	Forestry-related graduate (specification) v/s Forestry graduates (guidelines), which FRA 2010 requires? Should foreign temporary employed individuals be captured? Should unemployed qualified individuals and qualified individuals working outside of the forestry sector be counted?
	Data does not exist, because in some cases it is not recorded; where recorded it is aggregated with other sectors (agriculture, tourism, etc.) While data is required for point years it is preferable that averages be used rather than individual years;
	While data is required for point years it is preferable that averages be used rather than individual years; Difficult to acquire data due to multiple ministries/departments involved in forest-related activities with different budget lines

Annex 8.7: Pacific

Item	Summary of discussions/ issues/ questions
General reporting methodology	FRA definitions vs country definitions. Data collected according to different definitions and categories an issue (expressed need for support for reclassification)
Process	Need to increase the general awareness of FRA in order to gather support to compile the country reports. A wish was expressed that a note should be sent from FAO to Ministries or CEOs to carry weight to the work of the NCs Important to get the support from the CEO of Forest Agencies in order to be able to complete the country reports Need to build political support for FRA (Pacific HoF Meeting (September, Apia) a good market place) Important to form a national team for the elaboration of the country reports. National workshops with existing staff (sharing the reporting burden) rather than employ new staff.
T1	Definition of forests (FRA vs Country Definitions) Selectively Logged forest with various levels of canopy opening, how to classify? How to handle small patches (less than 0.5 ha)?
T2	Disposal of timber rights for specific periods of time such as forest management agreements, how to report this under ownership?
T3	3a Overall Land Use Planning Maps within countries do not always record different protected areas, such as steep slopes etc. –Is it ok to include expert estimates of land falling into each categories? Other activities can be occurring on land designated for a particular purpose (how to handle?) 3b Are management plans sufficient to determine designation?
T4	Distinction between native and introduced species (time period naturalized species?) Meaning of predominant species when there is a mix of native and introduced species
T5	Natural expansion of forests – How to handle rotational systems (shifting cultivation)?
T6	Future recommendation renaming the table to “standing timber volume” Growing stock is confusing for non-foresters... What is the purpose of this information and how will it be used. Is there any need for growing stock available for wood supply? What is the relevance of Growing stock across the forest estate (protection forest, commercial available forest) Reporting by species can be a problem especially for natural tropical forests. Can this table capture forest degradation? If it cant, how to cover?
T7	Use of default IPCC values in response to Pacific Island countries question of availability of research results to guide reporting Issue of below ground biomass and factors to estimate volume dead wood?
T8	Data availability an issue
T9	Limited data available for fires occurring outside forests and frequent burning of grasslands which is not monitored. (also time aspect...)
T10	Definition of woody invasive species needed in the guidelines. Non-woody invasive species are a significant problem, and countries would like to report on this.
T11	Clarify definition of “Industrial” round wood and where production from small portable sawmills fit in this category. Road side values problematic to report on. (suggestions at industries or on stump more frequently covered in official statistics)
T12	Issue of reporting of “water” and other environmental services not covered and may be very important in some Pacific countries. Standardize methodology to help capture information. Training needed to capture this information.

T13	<p>Uncertainty about restrictions about the category primary production of goods where people may be involved in both production and management of protected areas. Current definition will underestimate the contribution of forest in respect to employment.</p> <p>clarification of Tourism management in forests</p> <p>Distinction between paid and self employment.</p>
T14	<p>General issue, Federal constitutional arrangements may restrict the capacity to adopt national laws.</p> <p>When policies are not titled “Policy” but “Development Goals” and cover both forestry and environment “policies”.</p> <p>clarify whether Policies need to specifically centre on forestry or should broader policies that impact on forestry should also be included?</p>
T15	
T16	<p>Clarify “Forest Related education definition in “post – secondary education programme which focus on forests AND OR??? related subject.</p> <p>Should students educated in institutions abroad be included (particularly in small nations where these students receive scholarships?</p>
T17	<p>Clarify services in terms of revenue.</p> <p>Why income from Public owned business entities is excluded?</p>

Annex 8.8: Latin America

Item	Summary of discussion/ issues /questions
General reporting methodology	
Reporting table T1	<p>Chile: superficie de aguas continentales, diferencia respecto a FAO.</p> <p>Argentina: Inst. Geográfico Militar tiene otro dato.</p> <p>Panamá: construcción de nuevos embalses. Dificultad para tener cifra oficial.</p> <p>FAO: Informar si ha cambiado la cifra oficial a UN y FAO</p> <p>Brasil: discusiones internas sobre definición de bosque. Otras convenciones usan otras definiciones.</p> <p>Uruguay: toma al pie de la letra la definición de FAO.</p> <p>Colombia: dificultad desde sensoramiento remoto para monitoreo</p> <p>Chile: sobre el 25% de cobertura de árboles</p> <p>Honduras: inquietud OTB, OT, plant. de palma y frutales</p> <p>Discusiones internas sobre las palmas si se pueden incluir en el área forestal</p>
Reporting table T2	<p>Costa Rica: no se pueden reportar más que datos generales, no oficiales</p> <p>Paraguay: cuando se habla de propiedad está incluido el bosque. Faltando catastro no hay información precisa</p> <p>Panamá: igual que Costa Rica. Traslapes entre tierras indígenas y áreas protegidas</p> <p>Chile: no hay avances frente a 2005, no hay catastro.</p> <p>Honduras: si no tiene papeles es del Estado</p> <p>Guinea ecuatorial: permisos</p> <p>Brasil: tierras indígenas son consideradas públicas destinadas, está en proceso el catastro nacional de bosques públicos</p> <p>Panamá: bosques son propiedad del Estado</p> <p>Bolivia: decreto de tierras de producción forestal permanente</p> <p>Nicaragua: debilidad en el tema de catastro. Proceso de demarcación y titulación de tierras indígenas. Acceso.</p> <p>Costa Rica: antecedente y aclaración por falta de catastro, cifras de referencia</p>
Reporting table T3	<p>Nicaragua: área de bosque bajo ordenación forestal sostenible: nota vinculada a ordenamiento territorio</p> <p>Argentina: igual, en proceso</p> <p>FAO: puede haber áreas bien manejadas sin un plan y con un plan pero no sosteniblemente manejadas</p> <p>Chile: diferencia entre ZFP y AP. Bosques protectores.</p> <p>Cuba: Bosques dentro de AP</p> <p>Honduras: AP por diferentes razones.</p> <p>Guatemala: áreas que tienen que permanecer como bosques sin ser AP, cabeceras, rondas de ríos</p> <p>Colombia: manglares no son todos AP</p> <p>Paraguay: 25% de todas las propiedades deben ser tierra forestal permanente</p> <p>Nicaragua: zonas permanentes de bosques en fronteras</p> <p>Honduras: puede haber duplicidad. Los bosques existentes no pueden cambiar su uso por ley</p> <p>Guinea Ecuatorial: planes de manejo como instrumento legal sin materializar</p> <p>Brasil: difícil de identificar áreas bajo OFS sin no tienen un Plan de Manejo.</p> <p>Costa Rica: revisar traducción en la definición de “ZFP”</p>
Reporting table T4	<p>Cambios: natural modificado, plantaciones -> bosque plantado (semi-natural + plantaciones)</p> <p>FAO: países en los que hace 200 años se han plantado bosques con especies exóticas que se han naturalizado</p> <p>Depende de qué especie y cómo ha sido restaurado, intensidad de la plantación. La mayoría de los árboles que van a componer el bosque.</p>

	Nicaragua: rebrote luego de huracanes, enriquecimiento. Nota explicativa: en “etc.”. Paraguay: barbechos
Reporting table T5	Paraguay: inconveniente “hasta ese momento”. ¿qué momento? Forestación FAO: la idea es que forestación es plantación en área no clasificada como bosque. Si tuvo bosque, tala rasa, y uso agrícola o ganadero por 5 o 10 años, es forestación. Cuba: Nota 2. Reforestación puede reemplazar bosque natural o plantado
Reporting table T6	Uruguay: no cuenta con IFN Chile: preocupa “volumen en OTB” FAO: así no cuenta con inventario, es importante hacer esfuerzo para tomar información parcial. Cuba: innumerables especies. Honduras: importancia comercial o por abundancia? FAO: conociendo las 10 spp. más importantes por volumen. Requiere de IFN o inventarios parciales. Vol x ha para estimar a nivel de país.
Reporting table T7-T8	Todavía no puede responderse, se está consultando. Se requerirá consulta. Contacto con puntos focales de Comunicaciones Nacionales sobre Cambio Climático (Inventario de Gases Efecto Invernadero) y usar misma metodología en lo posible, si no, volver al sistema utilizado en FRA 2005. Ídem. Ecuador: al no contar con IFN solo pueden hacerse estimaciones para spp. comerciales, no las más abundantes, caso <i>Swietenia</i> .
Reporting table T9	Brasil: dificultad de relacionar puntos de fuego con área. Se tiene puntos de incendios en áreas de conservación. FAO: problemas en FRA 2005, por lo tanto se tiene posibilidad de reportar puntos o área o ambos. Lo más importante es “área afectada por incendios” Argentina: un punto puede afectar más de una categoría de vegetación. En el desglose pueden sobreponerse, el total es el total Venezuela: “fuego programado” Todo fuego programado que se escapa pasa a incendio Panamá: las autorizaciones son dadas por autoridades locales.. Guinea Ecuatorial: no tiene problema de incendios forestales. Se hacen quemas con rondas de protección que se apagan solas.
Reporting table T10	Costa Rica: no se llevan las estadísticas y no se está en condición de responder Panamá: Sistema Nacional de Protección Civil Venezuela: se tiene metodología para IFN y se está comenzando en Amazonas. Va a ser difícil. Chile: cierto nivel de información sobre plagas o enfermedades, no se sabe el momento en que pasa a ser perturbación. TCP FAO no ha sido concluyente si es parte del ciclo natural de la especie (en bosque natural) Uruguay: Proyecto FAO monitoreo en plantaciones, no en bosque naturales Guatemala: Argentina: en el IFN se tomó información sobre enfermedades y plagas, identificadas más no cuantificado.
Reporting table T11	Uruguay: extracción? FAO: no necesariamente lo que está talado, pues se puede sacar una parte únicamente. Borde de camino o carretera. Cadena, en cada paso se pierde una parte. Mantener el mismo punto de referencia en la serie cronológica. Guatemala: combustible, cada vez aparecerá más madera en ese campo, para generar electricidad. No debe mezclar el sector doméstico con el industrial. Ecuador: “extracciones en volumen con corteza”, se extrae aserrada. Debe convertirse a volumen en rollo (con corteza)
Reporting table T12	Chile: no se tienen mayores avances respecto a FRA 2005. Se tienen estadísticas de comercio exterior, no de extracción. Paraguay: se sabe que es una realidad y es importante pero no hay registro estadístico Costa Rica: para FRA 2005 se usó un documento de 1994. No hay mayores

	<p>avances. Se proyectarán.</p> <p>Carbón entra en maderables</p> <p>Semillas</p> <p>Raíces y corteza de <i>Prunus africana</i> en Guinea Ecuatorial</p> <p>Guatemala: “xate” follaje de <i>Chamaedorea</i>, cultivado o bajo manejo no cuenta. Únicamente de bosque natural.</p>
Reporting table T13	<p>Tiene un cambio importante, también se considera empleo independiente, compatible con estadísticas nacionales (OIT)</p> <p>Brasil: estadísticas de pulpa y papel ligadas a industria química, mucha informalidad en regiones remotas</p> <p>Buscar estadísticas oficiales y complementar</p> <p>Cuba: actividades en “ordenación de áreas protegidas”? problema de traducción?</p> <p>Se recomienda reemplazar por “gestión”</p> <p>Nicaragua: la nota explicativa no es clara. Se recomienda reemplazar “explotación agrícola” por “actividades forestales”</p> <p>Perú: “Período de referencia” es un año</p> <p>Guatemala: 280 jornales corresponden a un año en Guatemala</p> <p>En general se pueden reportar empleos directos e indirectos, oficiales de los institutos de estadística, y estimar los “independientes”</p> <p>Honduras: se tienen empleos directos e indirectos</p> <p>Panamá: si el 80% corresponde a la actividad es directo</p> <p>Se recomienda utilizar punto como separador de decimales y no utilizar separador de miles</p>
Reporting table T14	<p>Se debe reportar al año 2008.</p> <p>Política forestal: orientaciones generales para el sector, “promulgada cuando es oficialmente reconocida” (ver Nota 1)</p>
Reporting table T15	<p>Guatemala: problema en las dos primeras tablas ya que INAB es ente autónomo, no depende de ningún ministerio. Las decisiones las toma la Junta Directiva.</p> <p>Guinea Ecuatorial: se tiene INDEFOR y Sistema Nacional de Áreas Protegidas</p> <p>Honduras: dificultad para reportar años anteriores en tabla 15b</p>
Reporting table T16	<p>Brasil: algo complicado buscar información para años anteriores</p> <p>Paraguay: licenciatura o equivalente son 2 a 3 años. Ingeniería forestal son 5 años</p> <p>Venezuela: peritos forestales son técnicos superiores</p> <p>Honduras: ¿acumulativo? ¿incluye graduados en el exterior? Colegiatura</p> <p>Cuba: ¿incluye los extranjeros?</p> <p>Brasil: interesa capacidad del país en generar formación. Aunque hay otras disciplinas relacionadas con bosques, sólo se reportará educación forestal</p> <p>Chile: quinquenalmente se pueden ver tendencias</p> <p>FAO: no es acumulativo, cuántos se graduaron en cada año. Se consultará al equipo organizador a fin de aclarar el Fundamento “capacidades nacionales para realizar una ordenación forestal sostenible”</p>
Reporting table T17	<p>Panamá: en el mismo proceso de titulación se valoran los recursos forestales en su totalidad</p> <p>Guinea Ecuatorial: Departamento de Asuntos Económicos relaciona ingresos y egresos. ¿pagos de transferencia? El Estado hace reuniones de carácter regional (egreso operativo)</p> <p>FAO: pagos de transferencia son incentivos o subsidios, transferencia del sector público al privado.</p> <p>Panamá: ¿incentivos fiscales?</p> <p>FAO: solo subvenciones en efectivo</p> <p>Honduras: INAB transfiere parte de los fondos privativos al sector educativo</p> <p>FAO: no es pago de transferencia, es egreso operativo. No deberían incluirse empresas forestales estatales. Se decide utilizar moneda local para ver tendencias.</p>

Discusión general sobre la evaluación global de los bosques por teledetección

- Carlos Bahamóndez informó sobre la reunión de Valdivia, en la cual se conformó una red informal de corresponsales nacionales para producir un mapa de cobertura regional. Dentro de los procesos FRA (iniciativa de sensores remotos) y el proyecto TREE. TREE (JRC y Unión Europea) consulta sobre interés en participar en formación de capacidades a nivel regional. Instancia de capacitación técnica, proveerá herramientas. Carlos enviará mayor información respecto a TREE próximamente por e-mail.
- Ecuador: coordinación con OTCA (Panamazonia II)
- Agencia de cooperación de Chile puede apoyar a algún taller.
- En principio todos los participantes demostraron mucho interés; están pendientes de mayor información sobre el avance del componente de teledetección

Annex 8.9: Asia

Item	Summary of discussion/ issues /questions
General reporting methodology	No specific comments
Reporting table T1	Difficulties in applying FRA definition of forest for some countries, anyhow there is a common understanding that a certain degree of flexibility in the application of the FRA categories will be allowed. No problems with definition of other wooded land and other land.
Reporting table T2	Some countries have complex land tenure regimes, including customary laws, so there may be problems in applying FRA categories. For some countries the difference between forest owned by local communities and owned by indigenous tribal communities was not clear. But flexibility in the reporting system should be allowed.
Reporting table T3	Some doubts on PFE, the example of Pakistan where there's a logging ban on previously designated production forest. Doubts on the multiple use designated functions. There are some examples of multiple use forestry system, like community forestry of Nepal. It would be good to clarify the difference between the different functions of the forests and the primary function for which they have been designated. It should be stressed that the forest area as coming from table 1 has to be the same reported in table 3 (no overlapping). It is important to clarify that the designated functions should be identified as close as possible to the management policies.
Reporting table T4	In some case it is not easy to recognize introduced species from native species, is it possible to draw a threshold?
Reporting table T5	Clarify the difference between afforestation and reforestation and the concept of change in land use. Enrichment planting, how should be considered? Is it possible to establish a threshold?
Reporting table T6	Some guidance on how to extrapolate growing stock by species for the different reference years should be provided. Countries required growth models to assess growing stock for indigenous species. Some guidance on how to assess growing stock of trees outside the forest should be provided How to incorporate total growing stock of bamboo in table 6 Commercial species could change overtime, further clarifications will be needed to identify commercial species
Reporting table T7-T8	Many countries still face some difficulties in processing data on biomass and carbon and they need assistance in capacity building and they required default values for key species. Japan was suggesting networking between countries
Reporting table T9	Some countries are experiencing problems in finding data for fires in other wooded land, because it is not easy to collect data outside the forests. The use of Remote sensing techniques was suggested to find information on this issue but there might be temporal problems
Reporting table T10	Few data available on insects and diseases especially on an yearly bases and few data on invasive species which are difficult to assess Management activities can be described to clarify how to control these types of disturbances FAO should coordinate with CBD to assist countries on assessment of invasive species
Reporting table T11	There's the need to harmonize FAOSTAT figures and FRA figures on removals (problem with data on removals for Republic of Korea) How to estimate illegal wood removals and the value, it would be good to add a column reporting on this issue Apart from recorded data on wood removals, estimations of removals from

	<p>rural areas is another issue to be addressed</p> <p>Some countries (like Viet Nam) have problems in estimating the value of removals from different types of forests (plantations and natural forests)</p>
Reporting table T12	<p>Clarifications are needed about NWFP coming from outside the forest</p> <p>Ecotourism together with other services given by the forest should be taken into account in the FRA system</p>
Reporting table T13	<p>There's the need to clarify the concept of self employment, especially on a part time base</p> <p>Employees from the government also working on the management of protected areas (but not exclusively on this issue) should be accounted</p>
Reporting table T14	<p>Clarifications about the scope of policy statements and on national forest programs is needed because of different mechanisms in the countries</p>
Reporting table T15	<p>Some countries have an education system that implies 2 years and not 3 years of basic university education</p> <p>Clarifications on total staff should be given</p>
Reporting table T16	<p>Difficulties in assessing the number of graduated in forestry among other universities (not only forestry university) and among students that have graduated abroad</p> <p>There are some countries with no forest universities</p>
Reporting table T17	<p>Hunting even if occurring outside forest area should be included?</p> <p>Unrecorded forest revenues are difficult to assess</p> <p>It can happen that initial allocated budget is different from the real expenditures, it is not easy to assess the actual expenditures in this case</p>

Annex 8.10: Near East and Arabic speaking countries

Item	Summary of discussion/ issues /questions
General reporting methodology	<p>Definition of forest in Arabic not clear:</p> <p>Countries have their own definitions</p> <p>New tables require new data. What to do? Should country go to the field to collect new data (diseases outbreaks) or use remote sensing? Particularly when a given country does not have enough field staff and a system for data collection.</p> <p>Remote sensing from 1980 produced vegetation cover map (Lybia). What to do to generate relevant information for FRA 2010? Correspondence between national classes and global (FRA) classes is needed. Expert opinion is needed to generate new data set for FRA 2010</p> <p>National measure units need to be converted in hectares.</p>
Reporting table T1	<p>Data exist for T1 in Lebanon but needs calibration and estimation</p> <p>Planned forests vs forest plantations not clear to some countries</p> <p>Are palm trees classified as forest or other land? Clarification: Think of criteria of classification. If the land is used for agriculture purpose or conservation.....</p> <p>Make clear commentaries of what is reported e.g purpose of use of the land.</p> <p>Inland water bodies reporting not clarification. example water reservoirs which inundated area change, intermittent rivers and wet areas.</p> <p>No minimum area to report on water bodies</p> <p>Update historical data if there is new information.</p> <p>Definition of minimum forest area of 0.5 ha is not easy to provide in some countries as national definitions are different e.g. Morocco has a minimum forest area of 4 ha.</p>
Reporting table T2	<p>In some countries there is no ownership of trees.</p> <p>Tables are becoming sophisticated and difficult to fill in.</p> <p>FRA scope is countries request.</p> <p>Differentiation between private individuals and private business entities and institutions np easy.</p> <p>In some countries ownership is clear, but the change of use of land is frequent from forest to other land uses..</p> <p>Some countries do not have information because of lack collection system (wars in Iraq).</p>
Reporting table T3	<p>Designation of forests in some countries are not clear.... propose to put it under Multiple use forest.</p> <p>Some countries have enough data to classify their forests according to designation.</p> <p>FRA 2005 exercise will help many countries to fill in the FRA 2010 table.</p> <p>Some countries (e.g Lebanon) do not have management plans</p>
Reporting table T4	<p>No primary forest in Near East region.</p> <p>Most forests fall under Other naturally regenerated forests and planted forests.</p> <p>Some countries have mangrove fall under Special Categories.</p> <p>Near East countries have the data to prepare this table without any difficulty.</p> <p>Definitions need improvement such as "CLEARLY visible indications of human activities".</p> <p>Definitions and their explanations have lots subjectivities.</p>
Reporting table T5	<p>Category of natural forest expansion exist in some countries (Lebanon).</p> <p>Definitions of terms clarified. No misunderstanding.</p> <p>In Near East, the categories of afforestation and reforestation are common classes.</p> <p>Lack of information on natural expansion of forests, though this category exist in some countries e.g. Iraq.</p> <p>Introduced species have specific national terms</p>

Reporting table T6	<p>Minimum diameters of stems and branches are well defined in some countries.</p> <p>In broadleaved forest, branches contribute volume and biomass. Not very much in pine forest</p> <p>For table 6b, countries ask whether they can consider trees outside forests.</p>
Reporting table T7-T8	<p>Are the IPCC conversion factors the most recent ones?</p> <p>Is it possible to use determined conversion factors from neighbouring countries?</p> <p>In some countries data on biomass is lacking.</p> <p>Capacity building to assess biomass through exchange of experiences between regional national correspondents.</p>
Reporting table T9	<p>Different focal point for climate change. Should NC follow his reporting format or otherwise?</p> <p>FAO is asked to provide NC any new procedure or method for estimating carbon stock.</p> <p>Where Near East countries are found among Temperate and Tropical IPCC default values?</p>
Reporting table T10	<p>Many planned fires by local people are not known. – Data will be not complete in some countries.</p> <p>There is no conformity between table of categories and definitions and T9b.</p> <p>Some countries have extensive information on forest fires . Other vegetation fires can be found in the country.</p> <p>Serious problem of translation into Arabic.</p> <p>Insurance – compensation of damage caused by forest fires.</p>
Reporting table T11	<p>Are land mines among disturbances (Lebanon) – Abiotic?</p> <p>In some countries data will not be exhaustive.</p>
Reporting table T12	<p>Morocco has conversion factors for some tree species for o.b volume. It will be shared throughout the region.</p> <p>Countries feel comfortable with this table – information available</p>
Reporting table T13	<p>A lot of products consumed by local population not quantified.</p> <p>For honey the categories requested are not easy to provide information on.</p> <p>Some forest products can not be known whether they come from forest or other wooded land or even other land.</p> <p>Can palm fruits be considered NWFPs?</p> <p>Revenue: should it be processed product or raw material (e.g. Rose Marry, etc)</p> <p>CDM: Revenue from carbon market not considered.?</p> <p>Not clear why grazing is excluded and fodder is included.</p>
Reporting table T14	<p>Information exists only on official employment</p> <p>FAO to provide threshold of full-time equivalents employment.</p> <p>This table will require a lot of estimations.</p> <p>Employment in protected areas overlaps with employment in primary production of goods. Not easy to report on.</p>
Reporting table T15	
Reporting table T16	
Reporting table T17	

Annex 8.11: UNECE

Item	Summary of discussion/ issues /questions
General reporting methodology	<p>General Comments/questions</p> <ul style="list-style-type: none"> • Use FAO for total land area, interpolate or extrapolate other data as needed • Try not to leave anything blank • Data should be tracable [if FAO term is not in your national data, then note what variables in your data were used to approximate] • Very important to complete Tables 1,2,3,4 first and send to FAO <p>Clarifications:</p> <p>Q. Do you encourage extrapolation of data to base year? A. FAO specifies that data should be reported for base years and provide expert data for all cells as much as possible.</p> <p>Q. Do we follow FAO or national forest laws for definitions of forest [some countries have different minimum standards]? A. Many countries will have different minimum standards, you attempt to adjust where possible, where not, report what you have with notes.</p> <p>Q. What about reference dates? A. Make sure to supply actual reference dates in notes.</p> <p>Q. What if we have no new data? A. Extrapolate 2005 pre-loaded data to 2010.</p> <p>Q. If we will have new data in 2008-09, what is the cut off date to use it for FRA 2010? A. No particular rules on cut off date and will be reviewed case by case. Perhaps as late as June 2009</p> <p>Q. What if countries for old data now are 3 or more new countries? A. Every attempt should be made to split the old data into components consistent with with new boundaries.</p> <p>Q. What is the role of previous FAO reports?. Some trends have been recast to reflect new data availability or improved compliance with FAO definitions? A. The new report will contain revised trend information and replaces the old report. It is the source of new data and of trends consistent with the new data.</p> <p>Q. Are we doing the “traffic lights” for FRA 2010? A. FAO has reviewed how they will present quick indicators of trends. There will likely be some sort of quick trend index, possibly in the form of traffic lights. Suggestions are welcome.</p>
Reporting table T1	<p>Added notes for OWL: Tree spp > 5m in situ with cover of 5-10%, Tree spp < 5m in situ with cover >10% Other land with tree cover [urban forest does not meet forest definition, but if included be sure to note]</p>
Reporting table T2	<p>Guidance to clarify that the four ‘of which’ subgroups under private ownership should add to total private ownership.</p>
Reporting table T3	<p>Table 3a Primary Function. Reflects intended management, <u>must be additive</u> For MCPFE, we need a guide to consistently place the 3 groups of protected areas 1.1, 1.2, 1.3. Can ‘no management’ be considered sustainable? Sustainable forest management is defined by country. In some cases low productivity areas are</p>

	<p>called sustainable because there will be little active management.</p> <p>Protected areas excludes IUCN category 5 and 6. What is the rationale?</p> <p>Concerning Management Plan data? what about enforcement? FAO position is to report what is documented, not whether it is enforced.</p> <p>Q. Are all protected areas in “Conservation of Biodiversity” category? A. Not necessarily if the “primary” reason for protection is other than biodiversity.</p> <p>Table 3b. Special designation Table 3b <u>may be non-additive</u>.</p> <p>Need to clarify what is “permanent forest estate”. Could be all but plantations to some.</p> <p>Do all federal forests fall into this category? Need to specify which IUCN/MCPFE categories to include. Area with management plan- confirm that it should normally exclude ‘euivalent’ reported to MCPFE</p>
Reporting table T4	<p>Only Table 4a of primary concern.</p> <p>It is difficult in Europe to tell accurately if the forest is planted. Not collected in most field surveys but some countries can derive.</p> <p>Does what is included in primary forest differ by country? Most will start with protected areas as primary and then add. Significant human intervention is not well defined for primary forest and needs clarification.</p> <p>When an FAO term does not match your inventory term exactly, you should note what data (and terms) in your country were used to derive the FAO data.</p>
Reporting table T5	<p>Does not include reestablishment by natural regeneration. There is confusion if the table is not complete. In Finland, natural regeneration is encouraged as planting is regarded as negative. Currently this table does not allow us to show this value.</p> <p>In the US, we use the net area change between inventories and known area of planting to derive an estimate for naturally regenerated lands. With new inventories, we will track plots that have had harvesting take place, whether clearcut or partial. Or, include in footnote how much is natural regeneration.</p> <p><u>Afforestation</u> No specific comments</p> <p><u>Reforestation</u> No change of land use. Underplanting included. Excludes natural regeneration of existing forest.</p> <p><u>Natural expansion of forest</u> Without clear data, difficult to determine. Trying to determine natural reversion of open land.</p>
Reporting table T6	<p>T6 General growing stock Commercial growing stock Should fuelwood species be considered commercial? YES, as long as it is being sold!</p> <p>Can we consider all tree species commercial.... Perhaps. Growing stock of commercial species is not the same as commercial growing stock Are commercial species in protected areas commercial growing stock?</p>

	Where do you put volume of trees in protected areas? (env. Community would be upset if included in this column)
Reporting table T7-T8	<p>Table reasonably clear and as IPCC reporting guidelines. Should we report same as IPCC? Perhaps not, but try to harmonize. The US data will be compatible for Tables 6,7, 8.</p> <p>Q: Should the same figures be reported as UNFCCC figures? A: depends on reporting for CC Conventions, but more detailed information could be included – useful to contact correspondent in CC conventions</p> <p>Q: 2008 Kyoto report is expected by 2010: will any forecasts from carbon reporting be available by then? Once table 7 is defined, Table 8 should be fairly easy. Factors must be used for soil and litter carbon. Figures for soil carbon may be misleading as they due not distinguish between change of forest area from real change.</p> <p>UK: figures on soil may be misleading because changes will arise because of changes in expansion of forest areas: will not allow extent to see to which extent carbon is building up and decreasing in the soil (real increase may be difficult to see!)</p>
Reporting table T9	<p>Total area affected by fire, then of which forest, etc. What is the intention for FAO statistics? A big figure or a much lower figure with the more damaging fires? Problem with fire statistics outside of forest. This is troublesome as we really want to know about the forest fires so suggest re-ordering the table emphasize forest fires. Fire in other categories e.g. built-up areas, especially in ‘other’ categories, may be difficult and could confuse the numbers. Clear in definitions that regardless of the damage, all fires should be included → this is the classical way for treating forest fires in the FRA report</p> <p>9b - If the fire is not part of a management plan, it should be considered wildfire. Perhaps add a subcategory to wildfire “of which are arson origination” Clarify the difference between wildfire and planned fire. DR: early burning to reduce burned, Where to include other, unplanned, illegal fires? Forest fires on the territory are included in info system – does not matter if intentional or not? i.e. would be included under wild fire</p>
Reporting table T10	<p>Many disturbances of single species often are across broad areas but small total impact to given area. We are looking for a 5-year average period: note. There is a difference between the area affected in the average period and the newly affected area</p> <p>- abiotic factors: pollution is included</p> <p>Q: Does woody invasive species include other than trees. A: YES it appears so.</p> <p>European defoliation data: could it be included? Q: there is a difficulty in using data from ICP forest: it needs to be translated: we cannot use this data directly. A: It is not advised to use this table for ICP monitoring: if there is a known pollution source, it could be used as an indication → to which extent can this be included?</p> <p>Q: Is afforestation an abiotic factor? A: No, this table excludes direct human intervention.</p>

	<p>Q: Is nutrient efficiency considered in the abiotic factors? A: direct human intervention is excluded</p> <p>Q: Storm damage: difficult to identify area A: need to rely on national statistics: the best estimate we can get → include in the commentary</p>
Reporting table T11	<p>Removals does not equal felling. Does not include felled trees left in woods. Volume is overbark.</p> <p>When multiple estimates, how do we reconcile in this report? Concern about local currency and its affect. Make reporting in US\$ optional.</p> <p>John Redmond: Need a clarification of value of removals, is it roadside or mill-gate?</p> <p>Finland? Q: We have two sources: Statistics bureaux or national forest inventory? In the Plenary, using the statistics bureaux information was recommended. A: evaluate the credibility of the 2</p> <p>US/Brad: 3 estimates from 3 different sources: from the production side (field estimate: stumps, incl. also misc. harvesting) and the consumption side, estimates on the basis of logging ops.</p> <p>Question Serbia 52% of forest resources come from more than 500,000 forest owners and only 9 associations. How to find out removals? The data from the PFO enquiry will be updated with new national inventory</p> <p>Q: Difference between table 11 and table 6? What is the link? A: Table 6: growing stock of commercial species Table 11: wood removals</p>
Reporting table T12	<p>Excludes services. Does it include Christmas trees.... YES but guidelines are confusing. Some call them agriculture, others forestry. Grazing would be excluded from these tables as they are a service. What about honey? Report what you have but note whether you can differentiate source as forest.</p> <p>Defs: specifically includes X-mas trees, while excluding wood → b/c X-mas trees are grown on agri. Land/plantations in some countries: Def. here include X-mas trees regardless of whether grown on agri land or plantations But problem: X-mas trees could also be a commercial species if grown on forest land!</p> <p>US: diff. in every state how to classify X-mas trees (depends on taxation: agri or forest land taxation) – believes that it should not be worried how the government classifies X-mas trees, but include them in the table</p> <p>Licenses from grazing in forests? grazing is excluded according to categories, so licenses from grazing should also be</p> <p>Slovenia: Def. of wild honey? Where you do not have own hives. US: trade associations report on honey: not differentiates whether or not from trees – do not know how to separate → a note should be put! It is important to know the income from honey, but does not matter if wild or not!</p>

	Market value will be difficult to find!
Reporting table T13	<p>Changes: Self-employment included, management of protected areas changed to provision of services. Europe should get LFS data from new EuroStat and provide to national correspondents.</p> <p>Simon- Clarify that all government forestry staff are allocated to one (only one) of tables 13,15,16.</p> <p>Def. correspondents to standard industrial classification: it would be helpful to make this information available to national correspondent: instead of having each going to statistical offices</p> <p>EUROSTAT has launched a new questionnaire for Eur. Countries, EU +EFTA With tables along the same lines as FRA (deadline: June 2008; national correspondents are probably often the same) It would be useful having asap the EUROSTAT results, if the national correspondent is not the same person (Integrated environmental accounting questionnaire: JH/AU – no obligation to complete it).</p> <p>Cyprus: there're conceptual differences, e.g. EUROSTAT does not accept X-mas trees as a product since they are considered agriculture – even partial information could be helpful!</p> <p>Suggestion (Angelo): FRA team should provide correspondent with information on EUROSTAT correspondent</p> <p>Cyprus: there is another questionnaire from the EU related to the labor force 2008: correspondent could be checked with statistical services</p>
Reporting table T14	<p>Some countries don't have policy but number of statements. How do they report? Program is now being drafted... report where it is now.</p> <p>Tables 14-17 are a large increase in reporting for countries outside Europe. These 4 tables are really 7 as 3 of them have 2 parts. This is a large single increase to a report that had only 14 tables in 2005. U.S. comment: it seems because Europe has already done this it is assumed to be easy for the other nearly 200 countries to comply.</p> <p>It will be difficult for some to comply but we will do our best. MCPFE will be a guide.</p> <p>Subnational added for countries like US that have many subnational policy units.</p>
Reporting table T15	<p>Some countries [new] do not have a clear situation as they develop governmental structures and procedures.</p> <p>15b – excludes people in State forestry enterprises. Only forestry dept people? Try to include all people involved in forestry sector. Denmark has agency responsible for management? Are they 15b or not? {employee table, but not 15b} Does total staff include admin staff? YES Bulgaria has State Forestry Agency [not a Minister], is this put in Ministry category or other public. Place under Minister [and note].</p> <p>What about State forest companies – excluded from Tab 15 but included in Table 13.</p>
Reporting table T16	Do we include people who are qualified by position, but not by degree?

	<p>What about people with degrees but not working in field?</p> <p>Does public funded agencies include Universities? YES</p> <p>Does it really include all sciences? [will check this out]</p> <p>Should you count degrees or people's highest degree for year?</p> <p>Currently post-secondary education is not included [this will be reviewed]</p> <p>What about special forest schools.. secondary but specialized technical schools</p> <p>Note 2 days cover all services, but why exclude degrees in other areas (social science, accounting, etc)?</p>
Reporting table T17	<p>This is perhaps most difficult of new tables.</p> <p>In European process, this data had limited and sometimes inconsistent information.</p> <p>Excluding public entities [operational expenditures] will distort the data. [Should we include public entities? Group says yes] Should we specify income/revenue on public forest separately.</p> <p>In some countries, the objective of forest management is more than timber, how do we specify the other revenues [conservation, protection, etc].</p> <p>Definition says revenue is everything that comes from industry, including taxes [employee and industry]..... Only taxes related to land and value added included.</p> <p>Is revenue for use of forest land a service? So does it count? Not a product, NO.</p> <p>Excluding state forest service from revenue and expenditure will give misleading impression of total government revenue and expense</p>

Annex 9: FRA 2010 Remote sensing survey task force report

Global Forest Resource Assessment 2010 Remote Sensing Survey Task Force

1st Meeting 4-5 March 2008, Rome Italy

(Part of Global workshop: Launch of FRA 2010)

Draft Report

Summary

- This report is a summary of the first meeting to establish the Remote Sensing Survey (RSS) Task Force as a part of the FAO Global Forest Resources Assessment 2010.
- The meeting was held in Rome on 4-5 March 2008. It was attended by 42 people (Attachment C) including country representatives and partner organisations providing technical support.
- It was a parallel event to the main technical meeting of the National Correspondents to the Global Forest Resources Assessment 2010 (FRA 2010). The main meeting was attended by 250 participants from 150 countries plus representatives from numerous international organisations (www.fao.org/fra/).
- A Task Force was established made up of 20 countries, with technical support from key partner organisations. The Task force objectives are to:
 - ⇒ provide information and guidance on the plans for the FRA 2010 Remote Sensing Survey
 - ⇒ discuss related technical and implementation issues
 - ⇒ assist the development and testing of the RSS methods and systems, as well as providing constructive feedback and validation of results based on country data and experience
 - ⇒ help spearhead the implementation of the RSS at a sub-regional level.
- The agenda for the RSS Task Force meeting is Attachment A. The meeting consisted of presentations by FAO and the partner organisations on and discussions on technical issues, progress and plans for the RSS. The presentations are available at Attachment D.
- Countries and partner organisations were able to discuss issues and provide input to guide the development of the RSS. The Task Force agreed that a good global tree cover map based on MODIS data at 300 m resolution would be a very useful product from the FRA 2010 RSS for a wide range of purposes. The FRA 2010 RSS provides a robust framework and good data available for 1990 and 2000 and coming soon for 2005. There were technical difficulties with older 1975 MSS data but the long time series was generally thought worth striving for.

Outcomes

- The FRA 2010 Remote Sensing Survey was formally started and the Task Force established to guide the work of the RSS.
- Countries and partner organisations became better informed on the work underway and planned for the RSS.
- Participants were able to share experiences, discuss issues and provide guidance to the organisations developing the RSS.
- Organisations involved in developing the technical methodology and systems for the RSS have a better understanding of the interests and desired outcomes from countries.
- Countries are better informed on their roles in the RSS and can begin planning and or preparation of datasets or other meetings/workshops.

Actions

For countries

- Task Force countries are asked to formally re-confirm their participation and the previous nomination of the focal points to implement the study by responding to FAO by 30 April 2008.
- Countries are encouraged to begin collecting any relevant forest maps, aerial photos, and other datasets that will be useful for the analysis and validation of the selected sample tiles in the pilot study. The location of the 10x10km sample tiles will be at the junctions of the 1 degree

latitude and longitude lines (see <http://www.confluence.org/>). Maps of forest types in digital form (preferably GIS or even JPEG or PDF) would be useful to compile for comparison with the results produced in the RSS. Similarly, forest inventory field plots in the 10 x 10 km sample tiles (or in similar forest types) will be potentially useful to help validate and improve the remote sensing mapping data that will be developed by the project.

- Countries are asked to review the draft Information Gateway and provide comments back to FAO by 15 June 2008. http://dwms.fao.org/temp/tmp/fra2010rss/index_en.asp
- Mexico to confirm availability for Chairpersons role.

For FAO

- FAO to develop a plan of work for the RSS and inform countries when the activities are likely.
- FAO to finalise the image processing methodology with the partners.
- FAO to consider the issue of appropriate sampling intensity at high latitudes and review the www.confluence.org website approach and report back to the RSS Task Force.
- FAO to finalise the software for data delivery and image management and validation (the MADCAT software).
- FAO to enable different user administration rights and password protection in the design for the Information Gateway to manage data downloading for some areas.
- FAO will circulate the draft land-use classes to Task Force members when discussed with FAO NR to assess consistency with GLCC and other processes.

For Partner Organisations

- Partner organisations to finalise their inputs to the data preparation and processing (SDSU & JRC).
- The cloud cover analysis needs to be reviewed to assist determining where data gaps exist that could be helped by other data (SDSU and JRC).
- The partners involved in the radar work will liaise with FAO to clarify the role and provide more details to the Task Force in due course.

Welcome and introduction of participants

Wulf Killmann, Director of the Forest Products and Industries Division (FAO) formally opened the Task Force meeting. He welcomed the participants and thanked them for their time to provide input to the FRA 2010 RSS. He outlined the history of remote sensing work as part of previous FRA's and expressed high expectations that this RSS would help make FRA 2010 the most comprehensive yet.

Ms. Mette Wilkie (FAO) outlined the meeting objectives (see summary) and noted that the RSS was building on outcomes from previous consultations at Kotka V in Finland in June 2006, and in Washington DC in October 2007. A copy of her slides is in Attachment D.

Session 1: Setting the scene – outline of the approach and progress

Adam Gerrand (FAO) presented a general outline of the FRA 2010 RSS (Attachment D).

The FRA 2010 Remote Sensing Survey is designed to COMPLEMENT (not replace) the national reports for the Global Forest Resources Assessment 2010 and to provide a better picture of land use dynamics such as rates of deforestation, afforestation and expansion of forests. The RSS will provide information which is consistent over time and space, something which is difficult to obtain from a compilation of country reports.

Remote sensing scientists have developed methods for generating maps of tree cover based on MODIS imagery at a resolution of 500 and 250 m. This will result in tree cover maps which can be varied according to the percentage canopy cover and can be generated annually from 2000 onwards. FAO are working closely with Matt Hansen and the group from South Dakota State University (SDSU) and others to facilitate links with national efforts in order to develop and improve the outputs from these methods. Although this provides an excellent illustration of the distribution of forests at a global scale,

the resolution of the MODIS imagery (250 m) is fairly coarse and can be improved upon to obtain better statistics on forest area and forest area change.

The global framework involves wall-to-wall coverage using MODIS (250metre resolution), combined with sampling using LANDSAT 30 metre resolution tiles of 10 km by 10km at the 1 degree latitude and longitude intersections. This is potentially about 13,000 sampling sites (excluding poles and deserts) of which about 9,000 are on vegetated land and results in about a 1% sampling intensity. The sampling strategy is aimed at the global and regional or biome level and should not be used to report on the area and detailed types of a country's forests based on just these sample tiles.

The initial step will be to undertake a Pilot study to test and refine the process before global application. Twenty countries were selected to participate in the pilot study to cover a wide range of forest types and make up the Task Force, supported by FAO and the partner organisations.

Discussion points

- There was some concern among some countries that the RSS results will be different and may possibly contradict the national forest statistics or regional level statistics based on these. This issue was recognised and will need to be considered during the development of the RSS to ensure that the differences are understood and conveyed to users of the results.
 - ⇒ *The aim of the RSS is NOT to generate national level results but to provide some complementary and additional information, especially in areas where data is lacking or out-of-date. The testing of the RSS methodologies through the Task Force countries will be a very valuable part of assessing this issue and developing ways to minimise the impacts of any differences and considering how best to communicate the results. Releasing the RSS reports in 2011, the year following the main FRA 2010 report and tables, was considered to also help separate the results.*
 - ⇒ *Countries were urged to consider how to handle the information generated by the RSS. It is important to point out that the results should be used primarily at global level or down to broad biomes but not for individual country reporting. There may be some potential to provide preliminary results to assist countries with their UNFCCC reporting requirements where they have limited other data. This could be usefully tested during the pilot.*
- Some countries asked if equipment would be provided (e.g. computer hardware, GPS, digital cameras etc) would be provided.
 - ⇒ *FAO was not expecting countries to undertake any additional field work to do the RSS so equipment was not required to participate in the RSS. FAO will provide training to build local capacity within countries and would consider special requests where countries are unable to participate effectively in the RSS.*
- There was considerable discussion on the sampling strategy using the degree confluence points, especially on how that may oversample the higher latitudes.
 - ⇒ *This had been extensively considered during the development of the RSS and the proposed sampling does reduce to every 2nd point above 60 degrees to address this. Subsequent checking of the www.confluence.org website shows perhaps a more sophisticated approach where they define "Primary" confluence points at higher latitudes above 49 degrees. This method will be looked at and report back to the RSS Task Force for consideration. The US noted that it was largely a statistical problem that could be handled during the analysis stage towards the end of the work.*
- The threshold and separation of "forest" from "Other wooded land" (OWL) in the RSS work was also a challenge. This would be good to test during the Task Force pilot work.
- Separating out oil-palm plantations and other crops that are considered agricultural areas will also be difficult using RSS alone. This is also where the country input and validation will be vital to make the results as accurate as possible.
- Due to delays in processing rectified LANDSAT imagery (which is not expected to be available until late 2008) the RSS final datasets will not be processed and made available to countries until 2009. This means the final RSS report is not expected to be completed until 2011.

- A subset of approximately 400 sample tiles has been selected to cover the major forested biomes for initial testing of the methodology in the pilot study with the Task-force countries.
- Each country in the pilot study will initially have a fairly small number of tiles to check and validate to test the process before wider implementation of the system globally in conjunction with remaining interested countries. This will help iron out bugs and refine the methods and processing and improve the final results. A map of these will be circulated to TF members.

Key questions during the Pilot study include:

- Does the automated processing work well?
- Test validation – testing the legend for areas that have changed from and to forest
- Testing up/downloading of images and the software to deliver and handle the images
- Is it manageable for pilot study and issues for scaling up to the global level?
- Freely available Landsat imagery will be used as the primary source for the trend statistics on the 10km sample tiles.
- The pilot study will start by looking at Landsat imagery from 1990 and 2000, and to include information from the 2005 dataset if available in time, and where possible from 1975 (although there are issues with older data). That would give us a 30 year time span and make this the most comprehensive analysis in both coverage and time.
- FAO and JRC will use a common framework and a fairly simple classification system for all sites. Countries are will be actively involved so that the interpretation and validation can take full advantage of the local knowledge of national teams. Support will be provided to countries in terms of pre-processing of the data and through a number of regional training and validation workshops.
- Data will be freely available to be downloaded from the FAO website through an Information Gateway and countries will be assisted with software tools to validate and check the classification (Session 2).
- One of the main challenges will be to allocate changes detected to other land cover and land-use types. The Land Cover Classification System will be used as a starting point but transformed into the classes used for the Forest Resources Assessment (classes 1-3 below). Where there is a change in forest area, we need to obtain additional information on what the forest has changed into – or what kind of land has been transformed into a forest. In those cases, countries will be asked to divide the “other land” category into 4 classes (number 4-7):
 1. Forest
 2. Other wooded land
 3. Other land with tree cover
 4. Grassland/range/herbaceous
 5. Agricultural crops
 6. Built-up area
 7. Other non-vegetated areas
 8. Water
 9. No data
- The data can be uploaded to FAO and analysed at regional, biome and global levels.
- The main expected outputs are:
 - ⇒ regional, biome and global trends related to forests 1975-1990-2000-2005:
 - ⇒ area change statistics, and information on land use dynamics
 - ⇒ global and regional tree cover maps
 - ⇒ a framework to support further monitoring of forests, land use and environment
 - ⇒ baseline data for research and modelling
- There are a number of positive spin-offs of this project: Capacity building for forest monitoring and a pilot project for a national monitoring system in some countries.

- Prepare countries to benefit from the mechanism for reducing carbon emissions from deforestation in developing countries which is currently being discussed within the United National Framework Convention on Climate Change (UNFCCC).
- A timeline for the RSS was outlined including setting up RSS Task Force to refine methods, advise & test the process (see Attachment D – Adam Gerrand’s PowerPoint PPT file)
- 2008- analysis by 20 countries in Pilot Study
- 2009: most of the work in other countries, hold regional workshops, training etc
- 2010: Analysis and draft report preparation
- 2011: FRA Remote Sensing Survey report released.

Fred Stolle, World Resources Institute (WRI) USA, Remote sensing work at WRI and linkages with FRA (See PPT Attachment D).

The World Resources Institute has been using remote sensing data in a number of projects in collaboration with governments and organisations and gave examples from Cameroon and Indonesia. WRI is primarily interested in using remote sensing to monitor forest changes, especially deforestation, and through that to provide better transparency and influence policy changes and better forest management within countries through improved information and capacity to use that information.

Discussion points

- It was noted that in addition to monitoring deforestation, the RSS should also collect improved information on afforestation and reforestation because these can be very important in some areas.

John Latham (FAO) Evaluation of methodologies of the FRA 2010 RSS and linkages with other systems

John Latham (FAO) presented some of the background as to why the FRA RSS data is needed to better inform people of the extent and location of major ecosystem changes (see PPT Attachment D). He gave an overview of the linkages between the various processes including:

- Global Terrestrial Observation System (GTOS);
- Global Land Cover Network (GLCN)
- Land cover classification system (LCCS)

and emphasized that we need to work to build synergies and consistency with other approaches. He also outlined the main components of the work done by FAO in developing methodologies and processing some of the sample data which are presented in more detail below.

The draft categories that are proposed for use in the FRA 2010 RSS for classifying the areas where a change in tree cover is identified are a simplified version of the LCCS. FAO will circulate the draft land-use classes to Task Force members when discussed with FAO NR to assess consistency with GLCC and other processes. Countries will be asked to review this as part of the pilot study.

Ilaria Rosati (FAO) Visual interpretation methodology and comparison of results, consistency, repeatability, and efficiency (See PPT Attachment D)

Ilaria Rosati (FAO) presented a summary of the work done on the analysis of visual classification methods compared to the automated processing of images. The visual methods had some advantages including producing a lower number of output polygons, but had much longer processing times and were not feasible to be done for the large number of samples planned for the whole RSS. The time needed to process per tile varied from simple forest type areas of 2.5 hours per tile to more complex fragmented forest areas which could take up to 32 hours per tile. This is the main reason it is not feasible or practical to process the global remote sensing data using manual visual methods.

Advantages of visual classification:	Disadvantages:
--------------------------------------	----------------

• full supervision of the process	• resource and time consuming
• manageable number of polygons	• high skill requirements
• consistent and reliable results	• subjective results depends on the operator
• incorporation of human logic	• non consistent results for global project
	• would not be consistent over time

Automated pixel based methods were compared and the relative merits are below:

Advantages of automated pixel classification:	Disadvantages:
• fast, simple, robust, consistent approach within scene	• produces salt and pepper effects
• requires minimum interaction from the operator	• results depend on the accuracy of the individual date classification
• can be replicated across teams or scenes and batch processed	• sensitive to threshold values
• not limited to the visual bands or band combinations, using multi spectral information	• overshoot of classified changes

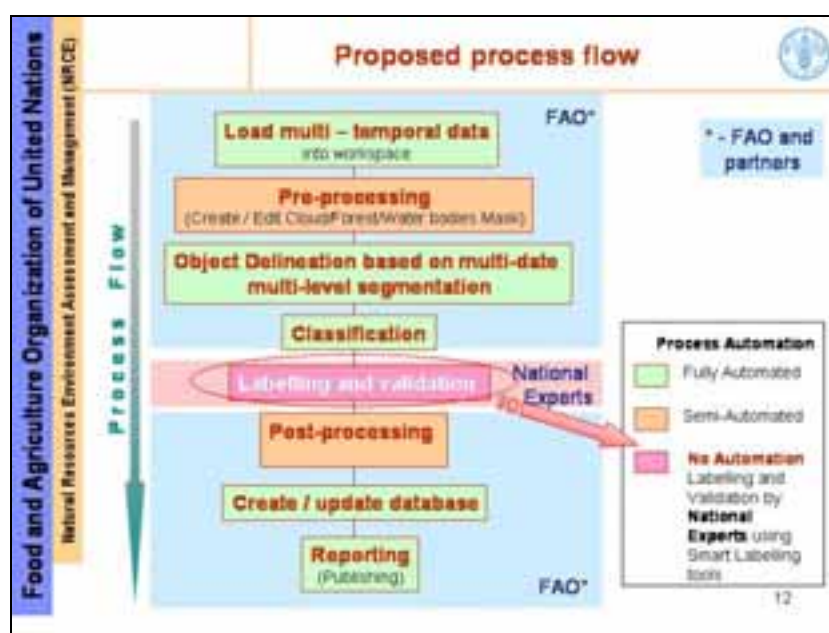
Renato Cumani (FAO) Object based methodology, image segmentation and comparison of results, consistency, repeatability, and efficiency

Renato Cumani (FA) presented the results of FAO work on automated processing of imagery using object based approaches (see Attachment D).

Preliminary results of advantages and disadvantages of Object based methods:

Advantages:	Disadvantages:
<ul style="list-style-type: none"> high level of automation possible 	<ul style="list-style-type: none"> larger number of polygons than the visual method
<ul style="list-style-type: none"> spatial and spectral clustering of segmented objects yields comparable results efficiently 	<ul style="list-style-type: none"> higher number of polygons than the visual method for validation
<ul style="list-style-type: none"> proposed methodology creates a manageable number of polygons with indication of rated changes 	<ul style="list-style-type: none"> dependency on: <ul style="list-style-type: none"> pre-processing inputs; quality of the imagery; thresholds and land cover condition

The proposed processing flow is outlined below. FAO and partners are proposing to make available the raw and processed imagery which has had a preliminary automated object based classification applied to it. Countries will be asked to check the labeling and to code the areas that are identified as changed from (or /to) forest to indicate the new (or prior) land use.



The preliminary conclusions from this work so far indicate that:

- many processes can be automated contributing to increased efficiency
- the quality of the delineated segments achieved by using “Definiens” software is equal or better than the manual interpretation.
- outputs are affected by the quality of the input images, with data input problems reducing output quality
- initial results indicate that the methodology detects changes well and will meet the FRA 2010 objectives.

Session 2: Proposed software for image processing and delivery by FAO

Antonio di Gregorio (FAO) Image analysis and change detection software tools – including preliminary review of MadCAT software

Antonio di Gregorio (FAO) presented on the software being developed by consultants for FAO for countries to view and process the imagery called “MAD-CAT” (MApping Device - Change Analysis Tool). This is still under construction but will be made available to countries to test in the pilot phase. This will help detect and fix problems so that the later release to all countries will perform better. It is intended that the software will be made available free of charge to FAO member countries participating in the FRA 2010 RSS.

The main features of the software were outlined including a multiple window viewing and editing capability, allowing vector and raster data to be loaded, smart-labelling of objects of interest based on few user defined samples, and semi-automated pixel based change detection.

Antonio Martucci, FAO Data supply, pre-processing and dissemination for decentralized classification/interpretation work – the draft FAO web-based Information Gateway

Antonio Martucci (FAO) presented on the work so far on the development of an “Information Gateway” or image data supply system using the internet to support the Remote Sensing Survey data dissemination and sharing (see PPT Attachment D). There will be between 200 and 400 images in the pilot study that will be available to download through the system.

The system has four main components:

1. Metadata Catalogue & Web Map Viewer
2. Imagery Archive (South Dakota State University)
3. Sample Browser
4. FRA 2010 Resources (FRA 2010 home page and related weblinks)

Note that this system is still under development but a preliminary version is available on-line for initial inspection (some functions still don't work but the block browser may be of interest to countries to show the initial sample tiles selected for the pilot study). http://dwms.fao.org/temp/tmp/fra2010rss/index_en.asp

Most of the functionalities will be developed upon FAO's GeoNetwork (<http://geonetwork-opensource.org>), the standards based, free and open source catalog application that provides a decentralized spatial information management environment. Users will be able to search for imagery by country, or select dates or locations. The system will provide a link to the image archive of South Dakota University for the LANDSAT images. Other links will enable users to go directly to the same sample point location in both the www.Confluence.org website and Google Earth (if installed and with high capacity internet connection). There is the potential to add password protection and administration rights to various levels of users if this is required. Authorized users such as national and regional teams, will be able to create new records, set privileges and perform remote uploading of:

- validated and labelled layers
- auxiliary data (aerial photos, vegetation/forest maps, inventory data, tables, documents, pictures)
- information about data (metadata)

The image delivery system is still under development but will be made available to the Task Force countries for testing and review during the pilot study.

Actions

For FAO

- FAO needs to finalise the image processing methodology with the partners
- FAO and partners to finalise the Information Gateway (image supply system).

For Partner Organisations

- Work with FAO to finalise the image processing methodology
- Process the imagery to agreed standards and file name conventions etc for loading into the Information Gateway.

For countries

- Countries are asked to review the draft Information Gateway and provide comments back to FAO by 15 June 2008. http://dwms.fao.org/temp/tmp/fra2010rss/index_en.asp
- Countries are asked to consider any special requirements they have for the Information Gateway (e.g. input or outputs to be in particular GIS formats etc) and let FAO know by end of June 2008 so that these can be considered for inclusion.

Session 3: Remote Sensing processing by partner organisations

The Joint Research Centre (JRC) TREES-3 project: “Global Forest resource Monitoring” with a focus on the tropics and boreal Eurasia.

Frederick Achard from the Joint Research Centre (JRC) presented on the results so far from the work done by the JRC (see Attachment D). The group has developed methodology for processing high resolution (30m) remote sensing imagery to estimate tree cover and areas of rapid change between 1990 – 2000 and 2005. This can be used to assist in understanding the drivers of deforestation at sub-regional levels and carbon emission estimates derived from tree cover changes. The work has also included analysis of the image quality (incl. clouds etc) that can help identify where other data sets may be required.

Case studies have been done Congo basin for period 1990-2000, assessing the global sampling approach over Brazilian Amazonia and adaptation of sampling to territorial monitoring in French Guiana 1990-2006. The key conclusions from the work so far are:

1. An operational test of the method has been carried out
2. The global sampling approach is valid at regional level
3. The global sampling scheme can easily be adapted to national scale and applied operationally.

Jesus San Miguel, JRC European component of JRC remote sensing work.

Jesus San Miguel (JRC) presented on the work done to develop harmonised pan-European forest maps. These require high resolution imagery as many of the changes are small patches, so they are aiming for LANDSAT quality or better (i.e. <25m pixels). From 1990 to 2000 there were 400 LANDSAT scenes used to cover Europe. For 2006 they are using SPOT and LISS with a total of 2,000 scenes. Shuttle radar topography is being used and the final product is generated using a fully automated algorithm.

For the FRA 2010 RSS the whole of Europe has 773 sample tiles based on the degree confluence points. The results from the FRA 2010 RSS will be able to be compared to the pan-European forest maps to assist validation and also enable some investigation of relationships between the sample tiles and wall-to-wall census results.

Matthew Hansen, South Dakota State University, US Global full coverage monitoring using MODIS vegetation continuous fields and system and progress on provision of geo-rectified LANDSAT imagery for sample tiles

Matt Hansen outlined the work being done through the University of South Dakota (SDSU and formerly the University of Maryland) in the US. The GEOCOVER GLS data will be renamed the Global Land Survey for 1990, 2000, and 2005 and is hoped to be completed by June 2008. The US has announced it intends to progressively make the whole LANDSAT archive available at no-cost when it has been processed. The LANDSAT sample block pre-processing will be done by SDSU who will also supply the first draft of a global water mask and forest mask.

He said that while there were still uncertainties in remote sensing techniques there was a general convergence of evidence between datasets and methods. However, he cautioned users of the imagery to be aware of the seasonality and check the dates – especially when doing any estimates change by comparing with an image from another season. He also said that they don't think they can get accurate estimates of change in absolute area terms from the coarse resolution of MODIS. It does provide a good indicator that change may be occurring in that area but should not be used to calculate the absolute extent in hectares.

He noted that the VCF used a cover threshold of 25% and would get a lot of errors of commission if a lower cover threshold were to be used. This indicates the difficulties of using coarse resolution remote sensing in sparsely wooded areas or for estimating the area of "Other Wooded Land".

Key discussion points on session 3

- It was noted that the reporting requirements of the UNFCCC of down to 0.5ha were a big challenge to do over large areas.
- This affects the minimum patch size which is an important item to test and seek agreement on as part of the pilot study. 5 ha was suggested as appropriate for global analysis – to be agreed.
- Indications were that the 1975 remote sensing data may be reasonable for large homogeneous blocks but less good for fragmented areas.

Session 4: RSS Task force countries to share experiences

Task Force countries briefly outlined their current and past use of remote sensing for forest analysis and capability to use the data and systems outlined in the presentations. A summary of the main points presented by each of the countries is presented in Attachment B. The Task Force countries were selected to cover a wide range of biomes/ecozones and also include a wide diversity of economic development and experience with remote sensing. Not all the developed countries are strong in remote sensing and several European countries have limited or only very recent experience using remote sensing as part of their forest inventories. These tended to be countries that already have very good mapping and field plot data so that remote sensing had historically not been seen as adding much value.

Session 5: Other related forest remote sensing work

Christiane Schmullius, Jena University High resolution multi-frequency and SAR imagery – availability and opportunities to support the main data sources

Christiane Schmullius outlined the use of radar 2010 RSS to investigate the use of radar data for forest analysis, particularly to fill gaps where other sources of data are not available. Radar has some difficulties but also some advantages, especially in that it is an active signal which can often penetrate cloud and collect data where other passive remote sensing systems cannot. Radar can also develop Digital Elevation Models that can be useful for processing and handling other data (e.g. shadows and reflectance). She presented some results from work in Russia where the time-series data was particularly valuable.

Comments from countries that had experience with radar data indicated that the data availability was low and the price very high and the processing complex. There were several calls for more clarity about how the radar data work was to be fitted in with the rest of the work. FAO and partners will clarify the work and provide more details to the Task Force in due course.

Session 6: Develop FRA 2010 RSS implementation plan and resource needs

The Task force separated into 5 break-out groups for discussion of issues in implementing the RSS and resource needs. The groups included representatives from the Partner organisation and were based around 1. Europe and Russia, 2. North America, 3. Central and South America, 4. Asia-Pacific, 5. Africa.

The groups discussed

- implications for implementing the RSS
- Initial planning for training workshop needs, dates and place options.
- Identify possible regional lead countries (and organizations?), delivery dates, resource needs?

A rapporteur from each group reported back to the main meeting and the results are summarised below. The South American and African groups PowerPoint Presentations are included in Attachment D.

North America

The group outlined the products that they thought the FRA 2010 RSS should aim to produce:

1. Global tree-cover map for 1990 and 2000 as a poster or product for reports
This would be good for checking/updating/validating the previous global map. They were not keen for this to try to show land use dynamics.
2. Statistics on tree-cover change based on the sample block analysis:
 - 1990 to 2000 the first priority, then to 2005 if possible, 1975 difficult so lower priority.
 - Suggested that the North American Forestry Commission define the boundaries.
 - May use other data to represent the area rather than the automated processed tile data.

There was some concern over the potential for others (public – or specific interest groups) to easily download all the tiles and do inappropriate analysis or produce misleading information. Password protection may be required to manage large data downloading for some areas.

Calling the RSS results “tree-cover” was a good way of differentiating the results from the political sensitivities of “forest” area and making it clearly separate from the forest areas presented in Table 1 of the main FRA 2010 report.

3. Land use dynamics was thought by this group to be only available through other sources of ancillary data and not remote sensing. This may take extra effort to do.

Europe

The group felt that for most European countries there would not be too many significant implications with the exception of the large workload involved to process the big number of tiles for Russia. The group clarified the countries minimum role as being to check and validate the pre-classified imagery from FAO or JRC. It was vital that the software provided be able to change the polygon boundaries as well as code labelling.

They considered that if possible a meeting in Rome in November would be useful or the EU forest week in late October. They didn't finalise a list or nominate lead countries but were happy to work as a group in the pilot study.

Technical issues:

- Projections need to be considered and agree on a standard (include as part of Pilot Study tasks).
- A list of what the windows will be able to do (presumably on image processing software?)
- Will there be options for changing the software (yes, will be tested & refined in pilot process).
- Need to discuss the best file format and agree on a standard and specifications (underway).

Asia-Pacific

The main goal was clearly to produce a land-cover map from which the products such as a) forest areas, b) non-forest and c) water. They felt the proposed methodology was suitable and that the pilot process was useful to test and improve the results. It will also help the countries decide if the whole process will work.

They proposed one regional workshop in Asia, either China, India, or Australia. There may be a need for two sub-regional trainings in China and Thailand. The delivery date depends on image availability and starting date.

Africa

Basically supportive of the RSS study. Agreed that training should be done regionally. See more detail in slides in Attachment D.

Some requirements for support for provision of hardware: e.g. computer for analysis and upload /download of preprocessed segments. Also possible requirement to plot out sample unit /blocks for field verification, GPS needed and training, and field manual was wanted *[FAO responded by saying that it was not intended that countries had to go to the field to check the tiles – using existing known information should be sufficient and that FAO did not have funds to support fieldwork in this process]*.

Countries not able to attend this meeting (notably DR Congo) need to be contacted and included later.

South America

Overall the FRA 2010 approach is good for continental sampling but may not work well for some specific forest types (e.g. South American temperate forests). See more detail in slides in Attachment D.

FAO should produce a standardised validation protocol (methods and manual?).

The map products should be validated by the National Correspondents or the nominee.

Session 7: Identify issues and options for best way forward

The 20 Task force countries considered technical issues in replicating and expanding the RSS from the pilot study countries to all FRA 2010 countries globally, and discussed options to reduce or resolve these. Mette Wilkie outlined the proposed legend for land-use change dynamics and clarified that it is not intended to try to estimate changes in the FRA category of “Other Wooded Land” with this remote sensing study. Where there is a clearly identified change affecting forest areas, then countries are asked to identify the classes that patches have changed to. The Task Force needs to review and agree on the proposed classification matrix.

Claude Vidal (France) indicated that the transition matrix is difficult and in most cases the remote sensing data cannot be relied on alone to do this, it requires other data and local knowledge. Some countries expressed concern over the time and resources to do this work. Alberto Sandoval (Mexico) said that he didn't think it was possible to do without field checking.

Actions

For FAO

- FAO to finalise the software for data delivery and image management and validation (the MADCAT software).
- FAO will circulate the draft land-use classes to Task Force members when discussed with FAO NR to assess consistency with GLCC and other processes.

For Partner Organisations

- Partner organisations need to finalise their inputs to the data preparation and processing and comment on the land use change matrix (SDSU and JRC).
- The cloud cover analysis needs to be reviewed to assist determining where data gaps exist that could be helped by other data (SDSU and JRC). This may help guide the selection of the SAR radar sample test areas (Jena University).

Composition and mode of operation and future actions of the RSS Task Force

The Task-Force was considered a good approach and no major changes to composition were put forward. It was recommended that it be Chaired by a country representative. Mexico indicated a willingness to undertake the initial Chairpersons role (subject to confirmation after returning to Mexico). The involvement of the technical partners was vital for contributing data and valuable technical expertise to the process but it was agreed that the Task-force be a country-led process.

It was considered that the Task Force should meet once per year but will likely need one meeting in late 2008 (date to be confirmed) to test the data delivery system and the image processing and validation software.

Actions

For FAO

- FAO to develop a plan of work for the RSS and inform countries when the activities are likely.

For countries

- Task Force countries are asked to formally re-confirm their participation and the previous nomination of the focal points to implement the study by responding to FAO by 30 April 2008.
- Mexico to confirm availability for Chairpersons role.

Wrapping up, next steps and concluding comments

Mette Wilkie and Adam Gerrand (FAO) thanked all participants for their contributions resulting in a better understanding of the RSS by countries and clearer directions for FAO and the partners to be able to move forward. The next steps for FAO will be to write up a draft meeting report for circulation to the Task Force members and plan the future work including finalising the software, image processing and data delivery systems in conjunction with the partner organisations.

Report back to FRA 2010 plenary meeting, Thursday 6th March

Ernesto Diaz from Mexico presented a summary of the main points from the Task Force meeting and an outline of the next steps back to the main FRA 2010 Plenary session so all other countries are informed of RSS work and their future engagement.