Anexo 11: Presentaciones durante la quinta sesión plenaria

Anexo 11.1 Marco de trabajo de información: Sra. A. Branthomme

Anexo 11.2 Apoyo a las evaluaciones forestales nacionales: Sr. M. Saket

Anexo 11.3 Apoyo a la evaluación forestal en Guatemala y nexos con FRA: Sr. R. Rodas

Anexo 11.4 Programas forestales nacionales y nexos con FRA: Sr. E. Mansur

Anexo 11.5 Proceso paneuropeo de C & I, la MCPFE y nexos FRA: Sr. Michalak

Anexo 11.6 Proceso de Montreal de C & I y nexos con FRA: Sr. Brad Smith

Anexo 11.7 Procesos de C & I apoyados por la OIMT y nexos con FRA: Sr. Steve Johnson

Anexo 11.8 INBAR, sus actividades y nexos con FRA: Sr. Maxim Lobovikov

Anexo 11.9 Informes relativos a los bosques en el marco de la UNFCCC: Sr. H. Granholm

Anexo 11.10 Informes relativos a los bosques en el marco del FNUB: Sra. S. Braatz

Global Forest Resources Assessment

Information Framework and Remote Sensing Survey of Forest Cover Changes

Anne Branthomme

National correspondents training

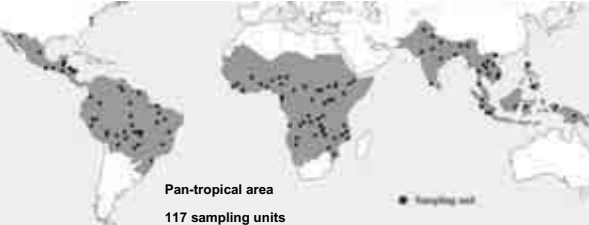Global Forest Resources Assessment, FAO

19 November 2003, Rome

Why an independent remote sensing survey?

• To complement the assessment based on existing country information (calibrate and validate national data)

• Valid at global and regional levels

• To provide detailed and reliable information on the process of on-going changes in the forest cover (deforestation, forest fragmentation, degradation...)

• To assess forest area and forest area changes, study of the trends (statistical estimates with known precision)

• Help in thematic studies: Identify causal mechanisms of deforestation, biodiversity, ecosystem assessments…

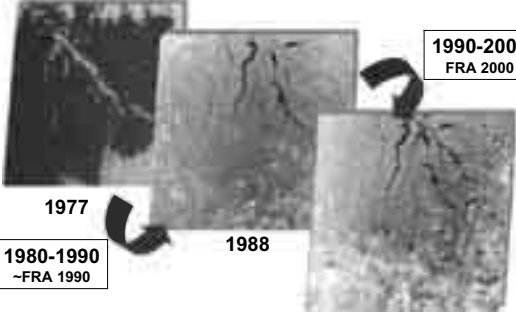### Previous FRA: Pan-tropical Remote Sensing Survey of forest cover changes 1980-2000

Pan-tropical area

117 sampling units

• Covered all tropical forest in wet, moist and dry conditions

• Statistical population : LANDSAT frames with forest cover > 10 %

• Two-stage stratified random sampling - 10% intensity

Pan-tropical Remote Sensing Survey
Three date time series 1980-1990 -2000

1990-2000
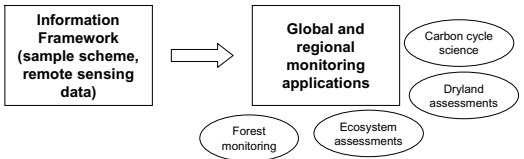FRA 2000

1977

1980-1990
~FRA 1990

1988

1997

Next FRA Remote Sensing Survey

• At present better and easier access to satellite data

• How to improve the survey ?

Statistical results (sampling design, estimators)

Methods (interpretation)

Extending the scope (global coverage instead of only tropical areas)

Facilitating links to other monitoring applications, to National Forest Assessments (NFA) and other in-situ data

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Step 1: Establish an Information Framework for Global Monitoring of Forests, Land use and the Environment

•Development and implementation of an information framework suitable for global and regional analyses and validation of national data with the help of remotely sensed information collected on a sample scheme

Information Framework (sample scheme, remote sensing data)

Global and regional monitoring applications

Carbon cycle science

Dryland assessments

Forest monitoring

Ecosystem assessments

Information framework for Global Monitoring of Forests, Land use and the Environment Objectives

• To better link global, regional and national studies on forest, land use, and the environment

• To improve standardization, homogenization, compatibility and efficiency of information provided by different applications

• To provide information that improves design and efficiency of sampling for national forest assessment

• To increase use and sharing of remote sensing data

Information Framework for Global Monitoring
Sampling design

More than 13500 monitoring locations
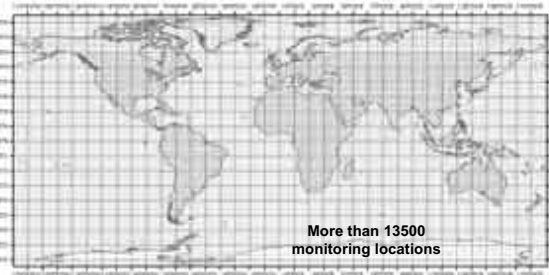
• Covers the whole earth' surface (not only tropical)

• Systematic grid based sampling

• Grid density: a sample site at each latitude and longitude degree

Information Framework for Global Monitoring
Sampling design
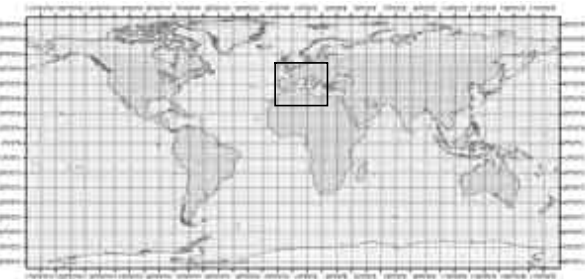
• Area covered at sample site: 10 km x 10 km

   Sampling intensity: about 1 % of land surface

• Linked to NFA tracts at same site (1 km x 1 km)

Information Framework for Global Monitoring
Sampling Intensity

REGION	Number of monitoring locations
Africa	2558
Asia	3077
Europe	3088
North and Central America	2487
Oceania	778
South America	1545
TOTAL (excl. Antarctica)	13533

COUNTRY (e.g.)	Number of monitoring locations	% (of total Land area)
Brazil	707	0.8%
Cameroon	38	0.8%
Guatemala	9	0.8%
Italy	35	1.2%
Philippines	32	1.1%
USA	977	1.1%

• Sampling intensity has been reduced above a certain latitude (60 degrees)

• Sample density enough to produce national estimates in some countries

• Stratification may be applied according to the application to optimize efficiency

Information Framework for Global Monitoring
Contents and access

• Remote sensing data : high-resolution and very-high resolution satellite data (Landsat, Spot, IRS, Ikonos…), aerial photos…

• Time- series (5-10 year intervals)

• Other data sets : medium or low-resolution satellite data (phenological information and digital elevation/terrain models)

• Open and immediate access to the content

• Data distribution and input of standardized interpreted results : Internet interface

• To ensure neutrality and longevity to the framework by locating the governance of the platform in the UN organizations like FAO and UNEP

Step 2: Application of the Information Framework to Global Monitoring of the Forest

• Based on FRA 2000 experience

• Decentralized interpretation

• Standardized methodology

• Homogeneous classification designed to allow a meaningful description of changes, with special attention to forest
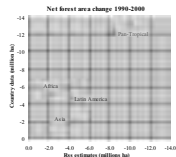
Global Forest Monitoring
Expected Results and Outputs

Transition matrices

Net forest area change 1990-2000
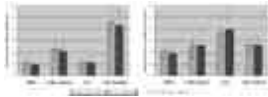
Forest changes estimates

Calibration/validation
of country data at
regional and global
levels

Organisation

• Build on past experience and networks of partners

• To establish institutional arrangements to maintain and sustain the information framework and regularly expand its content

• Partnerships with space agencies and their affiliates are essential for data provision and data processing for the specified needs (input of the contents will be facilitated by GTOS, GOFC-GOLD and others)

• Science and research community will ensure continued evolution and improvement in the methods and technologies used under the umbrella of information framework

• FAO and UNEP will coordinate with countries, define information needs and will host, store and provide the contents of the information framework freely

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Workplan

• Initially, the information framework will contain for each sample site two dates-time series of high-resolution satellite data (1990, 2000, Landsat data sets to start with)

   End 2003

• FAO will develop and support formulation of standard methodologies for use of the information framework to forest monitoring and will undertake pilot studies in Central Africa and possibly in other places

   Beginning 2004

• FAO will coordinate and organize training of national experts to facilitate decentralization of the interpretation work

   Results to be included in the Global Forest Resources Assessment 2005 (FRA 2005)

Support to National Forest Resources Assessment

Mohamed Saket

Outline

- What is national forest assessment (nfa)?
- Why we need nfa information
- Gaps in available data
- Approach for nfa
- Examples of nfa

What is national forest assessment (nfa)?

National Forest Assessment: A national process to collect, manage, make available and analyse information on forest resources, their management and use covering the entire country, including also analysis, evaluations and scenario development for use, e.g., in policy processes

National Forest Inventory: The principal activity to collect data within a National Forest Assessment. A NFI is based on systematic field sampling and can be complemented by remote sensing components.

Kotka IV, 2002

Why we need forest information?

Address sustainable development issues at national level
To better

- Preserve forests from degradation and deforestation?
- Control overexploitation and reduce the rate of deforestation?
- Improve productive function?
- Improve protective and environmental functions
- Improve social functions and contribute to food security
- Integrate forest resources in land use systems management
- Reduce environmental impacts of forests?
- Minimize threats to wildlife due to habitat destruction?

Why we need forest information?

- The United Nations Forum on forests, 2000

- The Convention on Wetlands (Ramsar Convention), 1971.

- Convention on Biological Diversity, CBD 1992.

- UN Convention to Combat Desertification, UNCCD, 1994

- Convention on International Trade in Endangered Species of Wild Fauna and Flora, CITES 1975

- UN Framework Convention on Climate Change, 1992

Gaps in available data

Method of data collection	Africa No. of countries	Africa %	Africa % of forest area	Asia No. of countries	Asia %	Asia % of forest area	Latin America and the Caribbean No. of countries	Latin America and the Caribbean %	Latin America and the Caribbean % of forest area	Oceania No. of countries	Oceania %	Oceania % of forest area	Total No. of countries	Total %	Total % of forest area
Detailed mapping and country-wide field sampling	6	11	22	0	0	0	0	0	0	0	0	0	6	4	7
Country-wide field sampling	13	23	17	1	3	n.s.	0	0	0	0	0	0	14	9	5
Detailed mapping	7	13	37	10	27	30	20	44	96	5	28	94	42	27	62
General mapping	6	11	5	6	16	26	3	7	n.s.	0	0	0	15	10	7
Expert estimate	24	43	20	20	54	45	22	49	4	13	72	6	79	51	18

n.s. = not significant   Source: FRA 2000

Concept Approach for forest assessment

- Interviews & Direct observation
- Enumeration/measurement of forest and tree attributes from a sample of population

Design Criteria
- ✓ **Cost**
- ✓ **Complexity/ rapidity** of data collection/update procedures
- ✓ **Accuracy** and consistency of output data (in space and in time)
- ✓ **Compatibility** of output with that from other systems of data collection
- ✓ **Flexibility** in land use classification/ characterisation (e.g. adaptability to changes in scale and level of generalisation; capacity to rapidly facilitate a broad range of analysis in response to various decision making needs)

## Concept Approach for forest assessment

- Systematic field sampling (Plots permanent for long term monitoring).
- Relatively low sampling intensity (50 - 500 sample sites/country): moderate cost.
- Adjustable sampling intensity according to country specific needs.
- Variables covering all benefits (goods and services)
- Vegetation/land use classification system defined according to country's specific needs.
- Land use classification system and forest related terms and definitions harmonized with international reporting systems.
- Country's ownership of project and hence commitment to implement NFA.

Objectives

1. **Assessment: Assess forest and TOF resources for NATIONAL level decision making:**
   - ✓ State of resources (areas, volume, biomass, biodiversity, etc);
   - ✓ Non wood forest and tree products and services;
   - ✓ Management, use and users of resources;
   - ✓ Role of forests and trees in food security

2. **Monitoring: Set up a long term monitoring system of resources .**

3. **Capacity building: Develop/strengthen national capacity in forest and TOF resources assessments, information management and long term monitoring.**

4. **Awareness: Contribute in increasing awareness of and knowledge about the multiple functions of forests and trees;**

5. **Harmonization: Develop harmonized land use classification & terms and definitions with international reporting systems.**

6. **Partnerships: Encourage partnerships between national institutions and with regional and international agencies.**

7. **Guidance to future actions: Results help identify and plan specific activities e.g. policy development, detailed inventories, etc.**

Statistical design

- Sampling is systematic based on lat/long grid
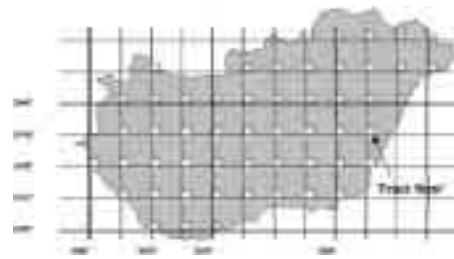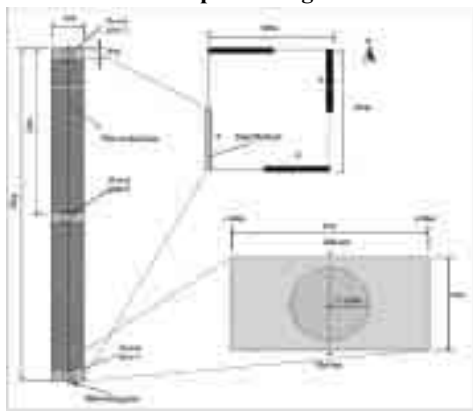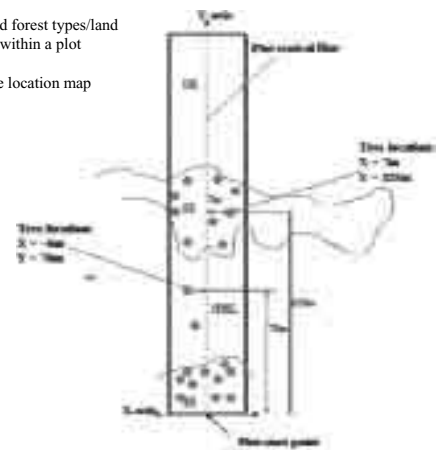

Cluster and plot configuration

Figure: Trees and forest types/land uses distribution within a plot
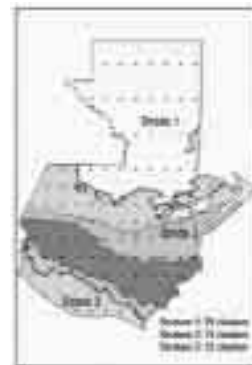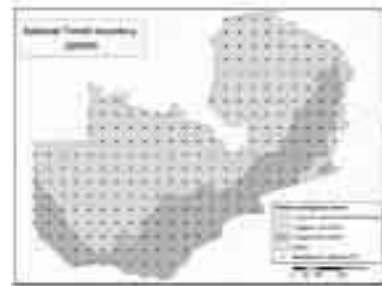
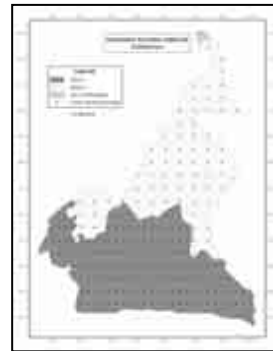Land use and tree location map

GFDB Structure and Data Processing

Forms for displaying structured inventory data
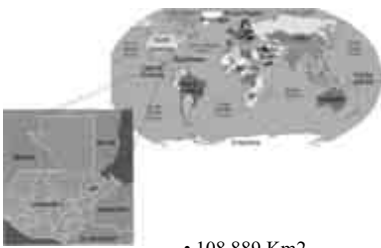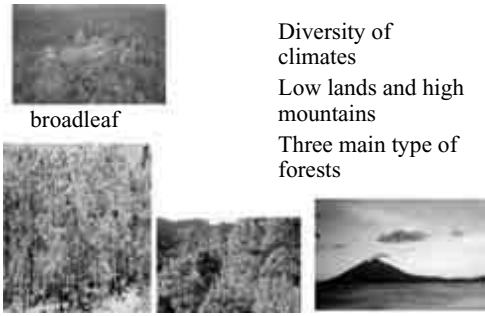
Current projects

Guatemala

- 108,889 Km2
- Approx. 12 milion people

Guatemala
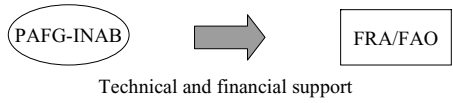
broadleaf

Diversity of climates

Low lands and high mountains

Three main type of forests

coniferous   mixed   Lakes

Background

- Necesity of a National Forest Inventory to produce the base line of information, focused on:
  - Potential of forest production, to insert the country for national and international process
  - State of quality of the country forest
  - Knowledge of the dynamics of the forest ecosystems

PAFG-INAB → FRA/FAO

Technical and financial support

Sampling design
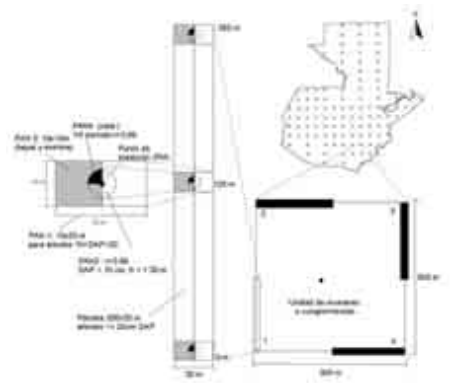
Systematic sampling:
- Sampling intensity different by strata
- Different spatial distribution
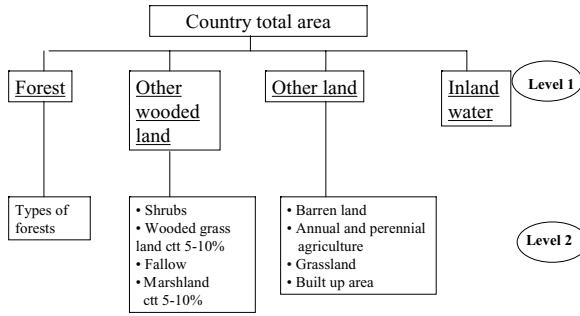
Sampling
- 114 Clusters
- 25 Has./Cluster
- 456 plots

Plot design

Vegetation classifying system

Country total area

| Forest | Other wooded land | Other land | Inland water | Level 1 |

Level 2:

- Types of forests
- Shrubs
- Wooded grass land ctt 5-10%
- Fallow
- Marshland ctt 5-10%
- Barren land
- Annual and perennial agriculture
- Grassland
- Built up area

Vegetation classifying system

Forest

| Broad-leaved | Coniferous | Mixed | Level 2 |

Primary/Mature
Advanced second generation
Second generation young
Galery forest
Plantations

Level 3

Organization

Steering Commitee

FRA-FAO Technical, financial support

Technical Unit COORDINATION

National support
Supervision
INAB y CONAP
Cartography and GIS
UVG, INAB
Administrative
PAFG-INAB

NFI Field work Teams

INAB-CONAP Field support
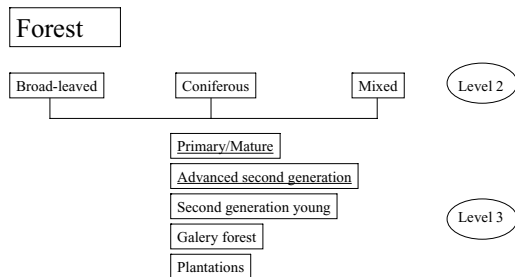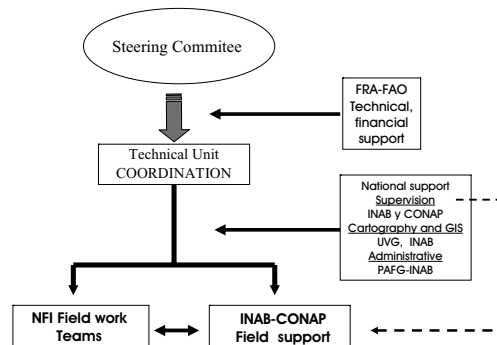
Field work organization

€ The country was divided in 6 operating regions, related on administrative, land using, topography and socioeconomic aspects

€ 6 companies-consultants was contracted to colect the data in each region

Data output

€ Based on FRA criteria:
…Extension of forest
…Production function
…Protective function
…Biodiversity conservation function
…Socioeconomic function
…Health and deseases

Land Use Areas

Variables	Forest	OWL	OL	Inland Water
Area tot. (•000 ha)	4,046	1,802	4,611	208
% of tot. land area	39	17	44	

Forest Type Areas

Variables	Coniferous	Broad-leaved	Mixed
Area total (•000 Has.)	397	3,336	313
% of tot. forest area	10	82	8

Total Tree Volume (>20cm Dbh)

Variables	Forest	OWL	OL	TOT.
Volume tot. ('000 m³)	469,389	26,504	66,529	562,423
% of tot. Vol.	83	5	12	100

Total Tree Volume by forest type

Variables	Coniferous	Broad-leaved	Mixed	TOT.
Volume tot. ('000 m³)	24,685	427,075	17,629	469,389
Tot. vol. per ha (m³/ha)	62	128	56	116

Forest Products	% using Product
Leña	65
Madera	38
Alimento-vegetal	11
Planta ornamental	10
Animales silvestres - carne	9
Construcción rural - poste	9
Planta medicinal	8
Construcción rural - techos	6
Artesanía	6
Resina	6
Ocote	5
Construcción rural - madera	5
Broza	5
Cacería deportiva	4
Condimento	4
Cera y miel	3
Animales silvestres - pieles	3
Forraje	2
Semillas forestales	2
Herramientas	2
Construcción rural - acículas para adobe	1
Animales silvestres - venta	1
Mecate	1
Carbón	0.6
Construcción rural - corteza para amarre	0.6
Construcción rural - varas	0.6
Ganado	0.3
Construcción rural - corteza	0.3
Costrucción rural - vigas	0.3
Taninos	0.3

Forest Services	% using service
Biodiversity refuge	79
Hunting	76
Soil Protection	76
Water Protection	60
Grassing in Forest	51
Tourism/recreation	50
Religious or spiritual	47
Scientific	38
Other	4
Shade	2

Enterprise	Fuelwood (%)	Tot. Prod. (%)
Informal	89	97
Formal	11	3

End Use	Tot. Products (%)
Comercial	38
familiar	73

Awareness of Forest Incentives	All Land Uses (%)
Yes	42
No	58

User Conflicts	Tot. Products (%)
Conflicts exist	10
No conflicts recorded	86
Not known	4

Expected future trees	All Land Uses (%)
More	39
Equal	13
Less	14
No opinion	34

Desired future trees	All Land Uses (%)
More	46
Equal	13
Less	12
No opinion	29

Anexo 11.4 Programas forestales nacionales y nexos con FRA: Sr. E. Mansur

Links of nfps and FRA

Outline

national forest programme
- Working concept

FRA and nfps
- FRA as provider of information for **nfps**
- FRA as recipient of information from **nfps**

The nfp-update
- Part of the global information platform being promoted by FAO

Working concept

national forest programmes:

- "nfps" are country specific processes for policy formulation and implementation towards sustainable forest management

- A broad concept that embraces any kind of national forest planning process developed under some guiding principles:

2

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nfp principles

nfps general principles:

1. National sovereignty and country leadership;

2. Consistency with national constitutional and legal frameworks, and national strategies for sustainable development;

3. Consistency with international agreements relevant to the forestry sector;

3

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nfp principles – cont...

4. Holistic approach, integrating all the different roles, products and services provided by forests and trees;

5. Inter-sectoral approach integrating the impacts of the forestry sector on other sectors and vice-versa;

6. Partnership of government with all other actors in the sector;

7. Participation of all stakeholders in policy development, planning, implementation and monitoring.

4

Processes

138 countries are developing nfps:

Region	Status		Total
	Plan-ning	Implemen ting	
Africa	21	22	43
Asia	10	14	24
Near East	0	3	3
Latin America and the Caribbean	0	33	33
Economies in transition	3	11	14
Organisation for Economic Cooperation and Development – OECD	0	21	21
Total	**34**	**104**	**138**

source: (2nd UNFF – March 2002):
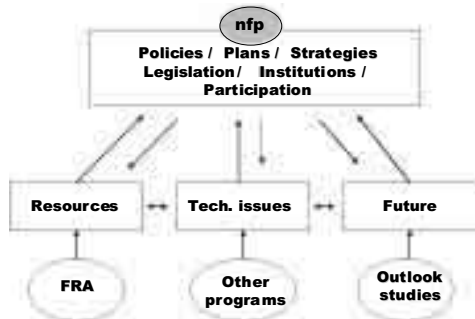
5

Providing information

FRA as provider of information for nfps:

How do we know we are going in the right direction?

-In policy formulation and implementation
-In halting deforestation
-In sustainable forest management
-…

6

nfp

**Policies / Plans / Strategies
Legislation / Institutions /
Participation**

Resources ↔ Tech. issues ↔ Future

FRA

Other programs

Outlook studies

7

FRA as a user of information from nfps:

How policies and planning are influencing the forest resources?

- How to obtain and share updated information from the countries on their nfp processes?

8

The   nfp*update*   at:

www.fao.org/forestry/nfp-update

- A country by-country, regularly updated report on the development of the nfp process
- Part of the FAO global information platform
- Led by FONP and the NFP Facility with the support of national nfp focal points and the FAO regional offices

9

1- A draft country update is prepared by FAO (FONP– Isabella and Okwen)

2- The draft is reviewed at FAO Regional Office and forwarded to nfp national focal points

3- The focal points review and approve the final drafts

4- The final drafts are returned to FAO (FONP) and made available online

5- The information is regularly updated by the focal point, the regional nfp advisers and/or FONP

10

1- Summary of the nfp process

Focusing on the policy process

2 – General information on the forestry sector

Resources (direct link with FRA), main features of the sector, key forestry issues, tenure, finance.

3- The forestry planning process:

Chronology of the nfp process, mechanisms and procedures, main constraints, future actions

11

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4 - The national forest policy

5 – Institutions

6 – Legislation (link with FAOLEX)

7 – International conventions

8 – External support to forestry sector

9 - Links and documents

10 – Sources used

12

Sharing information

Link with FRA:

- Common focal points (in at least 19 countries)

- Complementary data on the country information available at:

www.fao.org / forestry

13

Sharing information

Checking one example: CAMBODIA

http://www.fao.org/forestry/foris/webview/forestry2/index.jsp?geoId=38&langId=1&siteId=4621&sitetreeId=16228

14

Sharing information

For more information, please contact:

nfp-update@fao.org

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Anexo 11.5 Proceso paneuropeo de C & I, la MCPFE y nexos FRA: Sr. Michalak

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Global Forest Resource Assessments, FAO
National Correspondents Training
Rome, 19 November 2003

Pan-European Criteria & Indicators process and its links with Forest Resource Assessments

Roman Michalak, Poland

Pan-European C&I Development

Pan-European C&I 2003

Pan-European C&I links with Forest Resource Assessments

Pan-European C&I Development (1)

United Nations Conference on Environment and Development (Rio de Janeiro, June 1992)
   Agenda 21
   'Forest Principles'

Second Ministerial Conference on the Protection of Forests in Europe Helsinki 1993
   Resolution H1: General Guidelines for the **Sustainable Management of Forests** in Europe
   Resolution H2:General Guidelines for the **Conservation of the Biodiversity** of European Forests

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Pan-European C&I Development (2)

Helsinki Follow-up Process, 1993-1998
   6 criteria, 27 quantitative indicators,
   101 qualitative indicators,

Third Ministerial Conference on the Protection of Forests in Europe Lisbon 1998
   Resolution L2: Pan European Criteria, Indicators and Operational Level Guidelines for Sustainable Forest Management

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Pan-European C&I Development (3)

Lisbon Follow-up Process, 1999-2003
   improved Pan-European Indicators for Sustainable Forest Management, 2002 (35 quantitative indicators)
   MCPFE Assessment Guidelines for Protected and Protective Forest and Other Wooded Land in Europe

Fourth Ministerial Conference on the Protection of Forests in Europe Vienna 2003
   adoption of improved Indicators and Assessment Guidelines

Pan-European C&I (1)

C1: Maintenance and Appropriate Enhancement of **Forest Resources** and their Contribution to Global Carbon Cycles (4)

   1.1 Forest area
   1.2 Growing stock
   1.3 Age structure and/or diameter distribution
   1.4 Carbon stock

1

Pan-European C&I (2)

C2: Maintenance of Forest Ecosystem **Health and Vitality** (4)

- 2.1 Deposition of air pollutants
- 2.2 Soil condition
- 2.3 Defoliation
- 2.4 Forest damage

Pan-European C&I (3)

- C3: Maintenance and Encouragement of **Productive Functions of Forests** (Wood and Non-Wood) (5)

  - 3.1 Increment and fellings
  - 3.2 Roundwood
  - 3.3 Non-wood goods
  - 3.4 Services
  - 3.5 Forests under management plans

Pan-European C&I (4)

- C4: Maintenance, Conservation and Appropriate Enhancement of **Biological Diversity** in Forest Ecosystems (9)

  - 4.1 Tree species composition
  - 4.2 Regeneration
  - 4.3 Naturalness
  - 4.4 Introduced tree species
  - 4.5 Deadwood
  - 4.6 Genetic resources
  - 4.7 Landscape pattern
  - 4.8 Threatened forest species
  - 4.9 Protected forests

Pan-European C&I (5)

- C5: Maintenance and Appropriate Enhancement of **Protective Functions** in Forest Management (notably Soil and Water) (2)

  - 5.1 Protective forests – soil, water and other ecosystem functions
  - 5.2 Protective forests – infrastructure and managed natural resources

Pan-European C&I (6)

- C6: Maintenance of **Other Socio-Economic Functions and Conditions** (11)

  - 6.1 Forest holdings
  - 6.2 Contribution of forest sector to GDP
  - 6.3 Net revenue
  - 6.4 Expenditures for services
  - 6.5 Forest sector workforce
  - 6.6 Occupational safety and health
  - 6.7 Wood consumption
  - 6.8 Trade in wood
  - 6.9 Energy from wood resources
  - 6.10 Accessibility for recreation
  - 6.11 Cultural and spiritual values

Pan-European C&I links with Forest Resource Assessments (1)

- Between MCPFE process and Forest Resource Assessments (FAO and UNECE) exists continuous, mutually beneficial, collaboration:
  - Criteria & Indicators
  - Terms & Definitions
  - Data collection
  - Analysis
  - Reporting
  - C&I Improvement

Pan-European C&I links with Forest Resource Assessments (2)

- Pan-European C&I were applied during the elaboration of global and regional asessments:
  - Kotka III consultations
  - FRA 2000 and TBFRA 2000
  - FRA 2005 ongoing works
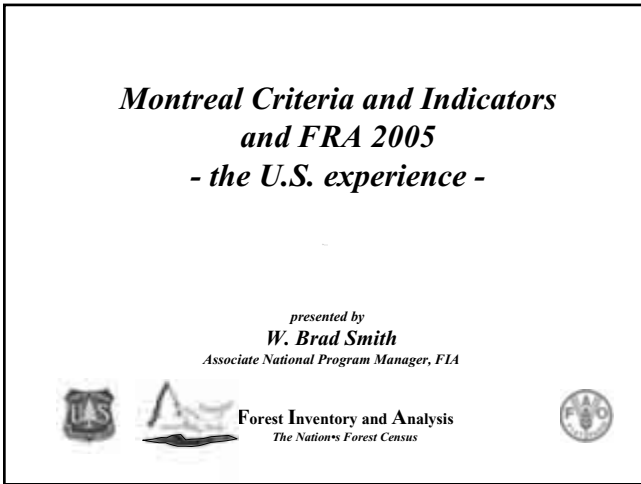   - Indicators 🢂 🢀 Global Tables and Variables

Pan-European C&I links with Forest Resource Assessments (3)

- UNECE/FAO participation in the reporting for MCPFE Process:
  - Report on Status of SFM at Lisbon Ministerial Conference (1998)
  - Report on Status of SFM at Vienna Ministerial Conference (2003)
- Good basis and perspectives for future cooperation

*Montreal Criteria and Indicators
and FRA 2005
- the U.S. experience -*

presented by
W. Brad Smith
Associate National Program Manager, FIA

Forest Inventory and Analysis
The Nation•s Forest Census

Outline

General background of C&I

Montreal C&I and FRA 2005

Thoughts on the process

In the beginning
we always had Criteria and Indicators,
but the old themes and variables were simpler

Use
Species   Products
TIMBER
Volume   Productivity

**Monitor
timber
supplies
for
sustainability**

Agenda 21 changed the focus

In 1992, the United Nations Conference on the Environment and Development (UNCED) adopted the •Non-legally Binding Authoritative Statement of Principles for a Global Consensus on the Management and Sustainable Development of All Types of ForestsŽ

Today, more than 150 countries
participate in 9 multi-national processes

Process	Countries
ITTO	31
MCPFE/HELSINKI PROCESS	41
MONTREAL PROCESS	12 <U.S.
TARAPOTO PROPOSAL	8
DRY ZONE AFRICA PROCESS	30
AFRICAN TIMBER ORG. PROCESS	14
NEAR EAST PROCESS	30
LEPATERIQUE PROCESS	7
ASIA DRY FOREST PROCESS	9

The new Process approach is more
holistic and much more complex

Extent/
Health   diversity   Products
Legal   **FOREST**   Carbon
Social   Economic

**Montreal Process
7 Criteria
with
67 indicators**

Future issues!

Good news!

At a joint meeting in Guatemala in February 2003, representatives from all 9 processes noted:

- **SOME** definitions were different
- **MANY** Indicators were similar
- **MOST** Criteria were the same

FRA Themes

	Montreal Criteria
1a Extent of forest resources	**1a**
1b Contribution to global carbon cycle	**5**
2 Forest health and vitality	**3**
3 Biodiversity function	**1b,c**
4 Productive function	**2**
5 Protective function	**4**
6 Socio-economic function	**6**

In the U.S. we rated the data for each Montreal indicator

- ⬤ **Data available nationally, current, and reliable**

- ⬤ **Data not consistent nationally, slightly dated, perhaps not measured frequently enough**

- ⬤ **Data are:**
  - **non-existent or inconsistent sources**
  - **more than 15 years old**
  - **without consistent data collection**

FRA 2005 variables and Montreal indicators

FRA 2005 variables	Montreal indicator and status for U.S.
Extent of forests	1y, 3y
Ownership	N/Ay
Designation *(Management status)*	2y, 4y, 10y, 12y, 19y
Characteristics *(Naturalness)*	plantationy, othery
Biomass	26y
Carbon Stock	27y
Disturbance of forests	15y, 16y, 17y
Forest tree species	6y
Forest composition	10y
Growing Stock	11y
Primary wood supply	29y, 31y
Value of primary wood supply	29y, 31y
Nonwood forest products supply	14y
Value of nonwood forest products	30y, 32y
Social Functions Sites	35y, 36y, 37y
Employment by primary activities	44y

Results

7	good
5	medium
2	poor
2	mixed

WE CONTINUE TO LEARN BY EXPERIENCE
U.S. has participated in 10 National and International Forest Assessments in past 6 years

Report	Type
National Report on Sustainable Forests 2003	Intnl
Montreal Process First Forest Overview Rep. 2003	Intnl
EPA State of the Environment Report	US
HEINZ Report on the State of the Nation's Ecosystems	US
UNEP Global Environmental Outlook	Intnl
Forest Statistics of the United States, 2003	US
Temperate-Boreal Forest Resource Assessment 2000	Intnl
Global Forest Resource Assessment 2000	Intnl
Forest Resources of the United States, 1997	US
Montreal Process First Approximation Report 1997	Intnl

New U.S. Montreal Report completed

National Report on Sustainable Forests -2003

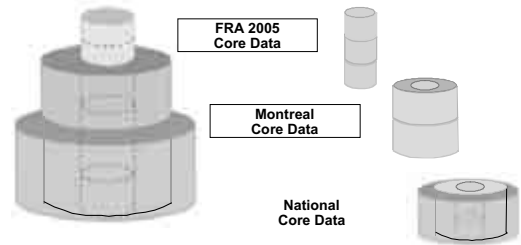http://www.fs.fed.us/research/sustain

12 nation Montreal Overview Report completed

**Montreal Process
First Forest Overview
Report 2003**

http://www.mpci.org/rep-pub/2003/contents_ehtml

For the U.S. the key to success is core data and common definitions

FRA 2005 Core Data

Montreal Core Data

National Core Data

The Biggest Gap?

The political courage and leadership to support and maintain progress toward the goals of sustainable forest management without knowing the outcome in advance.

Assuring the collection of consistent, reliable data is the first critical step that must be politically supported.

**Politicians will always ask,
"Are all these different efforts necessary?"**

Consider:

In business, competition is seen as assuring the best product for the customer.

In government, competition is seen as redundant and a waste of public funds.

What is the right answer?

I think both answers are correct…

Some competition is critical to assuring all the key stakeholders have a viable space to voice their concerns, but it must be effectively managed.

REMEMBER:
*Sustainable forest management is a journey not just a one-time destination.*

And, we are here to manage a more effective journey.

The next step in a more effective journey within the U.S.

The Council on Environmental Quality (CEQ) in the U.S. is taking on the task of integrating what we have learned and developing a framework to move forward in an organized way across resource sectors.

FORESTS,   RANGELANDS,   CROPLANDS,
URBAN,   FRESHWATER,   COASTAL MARINE

The future depends on our ability to meet the changing demands of monitoring our resources effectively

Er... getting some static here, could you repeat?

How are the core data and definitions coming?
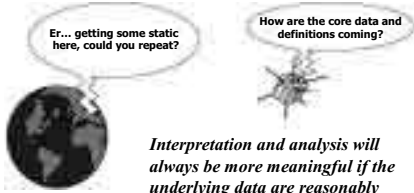
Interpretation and analysis will always be more meaningful if the underlying data are reasonably common, scientifically sound and as free of political spin as possible.

Anexo 11.7 Procesos de C & I apoyados por la OIMT y nexos con FRA: Sr. Steve Johnson
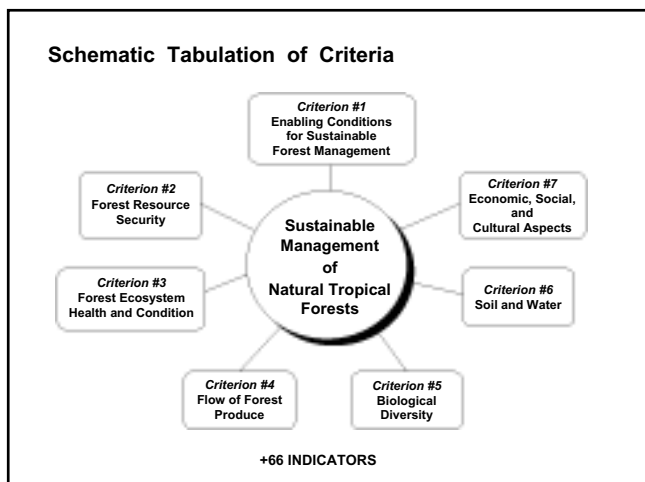

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO's Criteria and Indicators

A Tool for Monitoring, Assessing and Reporting on SFM

© ITTO 2003

The Evolution of ITTO's Criteria and Indicators

1989	-	No timber without trees
1990	-	Guidelines for the sustainable management of natural tropical forests
1992	-	Criteria for the Measurement of Sustainable Tropical Forest Management
1993	-	Guidelines for the Establishment and Sustainable Management of Planted Tropical Production Forests
1993	-	Guidelines for the Conservation of Biological Diversity in Tropical Production Forests
1997	-	Guidelines on Fire Management in Tropical Forests
1998	-	Criteria and Indicators for Sustainable Management of Natural Tropical Forests
2000	-	Manual for the Application of Criteria and Indicators for Sustainable Management of Natural Tropical Forest – Part A / National Indicators Part B / Forest Management Unit Indicators
2001-03	-	Reporting Formats
	-	National Workshops

Schematic Tabulation of Criteria

Criterion #1 Enabling Conditions for Sustainable Forest Management

Criterion #2 Forest Resource Security

Criterion #3 Forest Ecosystem Health and Condition

Criterion #4 Flow of Forest Produce

Criterion #5 Biological Diversity

Criterion #6 Soil and Water

Criterion #7 Economic, Social, and Cultural Aspects

Sustainable Management of Natural Tropical Forests

+66 INDICATORS

Training on and Field Testing of ITTO C&I

During 2000/2001, regional training workshops convened in Kuala Lumpur, Bogor, Quito and Sangmelima (Cameroon)

110 forest management professionals ("trainers") from 32 countries trained in application of ITTO C&I

Testing of the national C&I carried out with Forestry Department (Malaysia), Ministry of Forestry (Indonesia), COMAFORS, Ministry of Environment (Ecuador) and National Working Group on SFM and Certification (Cameroon); plus workshop participants.

Field testing of FMU C&I:
Malaysia – 1 concession (Peninsular Malaysia)
Indonesia – 3 concessions (Kalimantan)
Ecuador – 2 forests (Esmeraldas, NW coast)
Cameroon – 1 concession (Lokoundje-Nyong forest, SW coast)

Training and Field Testing Findings

Three quarters of 32 participating countries had difficulty to obtain data on 40-50% of the indicators

Main problem areas biodiversity, soil & water (no data)

Some indicators at FMU level (esp. endangered species, socio-economic measures) more applicable at national level

FMU level testing: size and ownership of concession/forest important with respect to data availability

Some overlapping/duplicate data requirements under different indicators

Some definitions too general ("light", "heavy")

Manuals need to be user-friendly

Other ITTO Work on Criteria and Indicators

Over $5 million since 1995 in Brazil, Cameroon, China, Colombia, Congo, Gabon and Indonesia explicitly on dissemination/development of C&I

Many other SFM projects incorporate use of C&I

Related activities for Indonesia (strengthen National Forest Program) and ATO (publication and adoption of ATO/ITTO Principles, Criteria and Indicators)

Also by Council decision, reporting on progress towards ITTO's Objective 2000 to be based on C&I

Reporting Format developed in 2001 consistent with perceived requirements of UNFF, took into account results of training

Certification and Auditing

- Training and field testing showed main objective of many countries/forest managers was certification

- ITTO began developing auditing guidelines for SFM at 29th session, on basis of framework developed by Simula/Baharuddin

- Proposed audit guidelines based on ITTO C&I, adding another layer of "verifiers" to each indicator

- Several countries already working on standards of performance and national certification systems based on ITTO C&I; these countries will be best placed to provide information on SFM to ITTO and others

- Decision at 31st ITTC called for distribution of auditing guideline framework and for assistance to Members that wish to establish credible auditing systems for ITTO's C&I

The Future

- More training and field testing (8 national level workshops with 50 FMU level participants each to be implemented in 2003/2004 – already 10 completed)

- More national auditing and certification schemes based on C&I

- Updating/revision/refinement of C&I and Reporting Format

- Mangrove C&I?

- Potential for partner organizations to collaborate on training and assistance in capacity building, mobilizing required resources

- More collaboration between different processes (ITTO/ATO already; 2004 FAO/ITTO Expert Consultation follow-up to CICI 2003 a good opportunity for further dialogue)

C&I Processes in ITTO Member Countries

Producers (32)

*Cameroon	ATO / ITTO	Bolivia	ITTO, TARA
C.A.R.	ATO / ITTO	*Brazil	ITTO, TARA
*Congo	ATO / ITTO	*Colombia	ITTO, TARA
Cote d'Ivoire	ATO / ITTO	Ecuador	ITTO, TARA
Dem. Rep. of the Congo	ATO / ITTO	Guatemala	ITTO, LEP
*Gabon	ATO / ITTO	Guyana	ITTO, TARA
Ghana	ATO / ITTO	Honduras	ITTO, LEP
Liberia	ATO / ITTO	Panama	ITTO, LEP
Nigeria	ATO / ITTO		
Togo	ATO / ITTO	Peru	ITTO, TARA
Cambodia	ITTO	Surinam	ITTO, TARA
Fiji	ITTO	Trinidad & Tobago	ITTO
India	DFAs, ITTO	Venezuela	ITTO, TARA
*Indonesia	ITTO		
Malaysia	ITTO	**Consumers (3)**	
Myanmar	DFAs, ITTO	*China	DFAs, ITTO, MON
PNG	ITTO	Egypt	ITTO, NE
Philippines	ITTO	Nepal	DFAs, ITTO
Thailand	DFAs/ITTO	(All 23 others involved in MCPFE or Montreal Processes)	
Vanuatu	ITTO	*C&I Projects funded by ITTO.	

ITTO's C&I and the FRA

- ✓ "Status of Tropical Forest Management" publication to be published in 2004 by ITTO; 22 producer countries have already submitted first national C&I report to feed into this

- ✓ All C&I processes should commit to a timetable and periodicity for publishing available data for member countries

- ✓ Many countries will require more assistance than provided to date

ITTO's C&I and the FRA (cont.)

- ✓ Analysis/synthesis of results from country reports will require more resources in ITTO, we need to work with partners

- ✓ Best to use existing data (C&I, TBFRA, FRA) if any direct collection of information from countries is required; IWGFS provides a good model for global coordination

- ✓ Revision/updating of ITTO C&I and Reporting Format (scheduled for 2004/05) provides an excellent opportunity to work towards greater synergies with FRA, including possibility of a joint questionnaire approach

UNIFAD/INBAR collaboration in view of FRA activities

Dr. Maxim Lobovikov

INBAR Program Manager

FAO FRA Training Course,
Rome, 17-21 Nov. 2003

Agenda

• IFAD and INBAR collaboration
• B&R "golden Revolution"
• B&R FRA issues: resources, production and trade
• Conclusions

INBAR is an international organization with headquarters in China

• History of INBAR is 25 years old
• Annual budget 4 million USD
• Major donors: IFAD, Canada, Netherlands, PRC
• 3 regional offices: in Ecuador, Ghana, India (IFAD-EU?)
• Since October 2000 INBAR is an ICB of CFC
• 27 member countries by November 2002

Why bamboo?

- growing fast (to 100 cm a day to 40 m in 2-3 mo)
- short rotation 3-5 years
- increases biomass to 30% a year compare to 2-3% for wood
- biomass production of 40-100 tons/ha
- more cellulose then average wood
- abundant resources
- tolerant, adaptable and not demanding
- environmentally friendly
- produces more oxygen then an average tree
- sequesters more carbon dioxide
- enhances and fertilizes soil, reduces soil compaction and hardening
- conserves and regulates water
- protects slopes and river banks

Bamboo distribution

(source: N. El Bassam, K. Jakob, 1996)

Native bamboo regions

B&R: Golden Revolution

handicrafts and articrafts
buildings and constructions
bamboo boards and panels,
mats and veneer
flooring and roofing
pulp and paper
composites
charcoal, oil and gas
b&r shoots
bamboo cloth

plus environmentally friendly and...elegant plants(!!!)

Handicrafts

- Traditional woven products have been made for thousands of years

- These traditional products still have a role in creating cash incomes for the rural poor

- They also link rural and urban poor and are more environmentally friendly than plastic

Bamboo shoots

International trade in bamboo shoots from China It is now worth more than $150 million per year.

Bamboo Flooring

There were 3 stages in PRC:

•1988-1995 with annual production 30-50,000 m2; equipment from Taiwan; quality is not ensured.

•1996-1999 development of int'l market and enterprises reform

•2000- rapid growth, intervention in the developed markets; annual production more then 2 million m2

Prices in the US - $60/m2 UK - $90/m2

Playbamboo and bamboo veneer

The World Champion Surfer uses a bamboo surf board

Bamboo is springy, resilient and strong

Bamboo pulp and paper

Bamboo pulp output in PRC (tons):
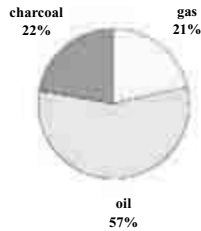- 1999 – 200,000
- 2000 – 500,000
- 2010 – 1600,000

Bamboo charcoal

Bamboo charcoal has many uses - decolouring, de-odorising, cleaning environment

Bamboo charcoal is fabricated into high value products - de-odorizing toys, pillow and mattress covers, insoles for shoes.

Bamboo oil and gas

charcoal 22%   gas 21%   oil 57%

Source: El Bassam 2001

Medicine and perfume

Medicines made from bamboo extracts are highly valued in the Asian market

Water conservation and soil protection

Water and soil control ability of bamboo plantations are 1.3-1.5 times better than that of fir or pine

B&R FRA is important for:
•rising public, business and governmental awareness of the value, dynamics and importance of B&R sector;
•attracting investments;
•forming and redesigning the forest policies;
•monitoring and managing market prices, taxes and custom duties;
•fighting against deforestation and illegal logging.

The problem is that current B&R statistics is inconsistent, fragmentary and needs to be improved
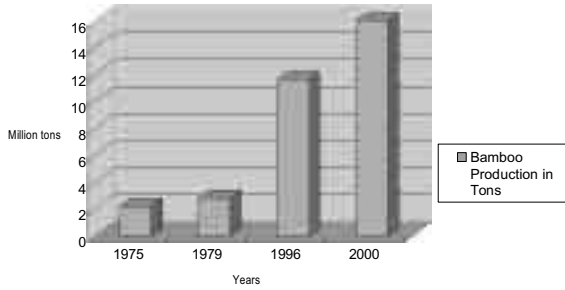
INBAR projects on B&R statistics:

• Zhong Maogong, Xie Chen, Fu Maoyi, Xie Jinzhong. B&R socio-economic database. China, 1995.

• Pabuayon Isabelita and Leina Espanto. INBAR B&R database for Asia. Philippines, 1997.

• Palomares Mario and De los Santos. Survey on Bamboos Production and Consumption in Peru. Lima, 1999

• Feng Lu. China's Bamboo Product Trade: Performance and Prospects. China, 2001

• Wardle Philip. Trade Flow Study. Non-wood Products-Bamboo and Rattan. EFI, 2001, Report to ITTO, 2002

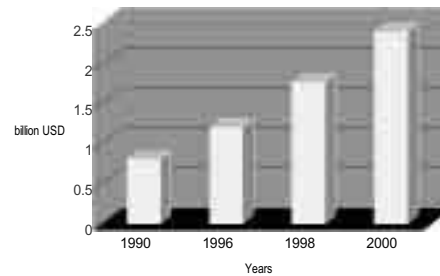• PCS studies and projects in India (IFAD supported)
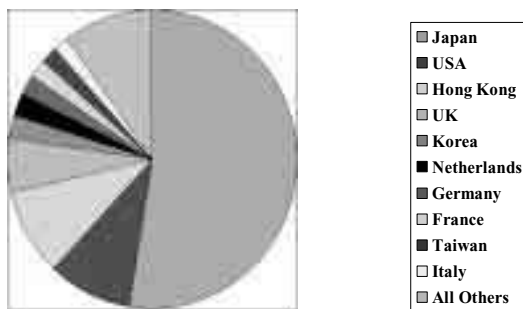
Increase of China's Bamboo Plantation Area

Total Area (Million Hectare)

1976   1980   1995   1998   2000
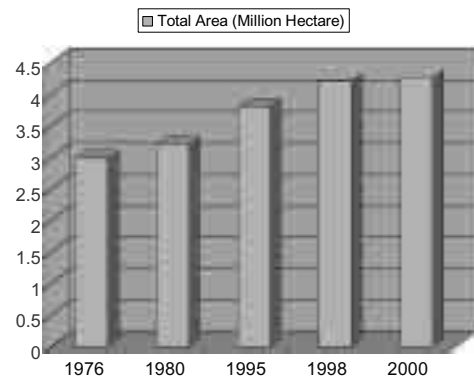
Increase of China's Moso Bamboo Raw Material Production in Tons

China's Bamboo Industry Production Value

China's bamboo export distribution

- Japan
- USA
- Hong Kong
- UK
- Korea
- Netherlands
- Germany
- France
- Taiwan
- Italy
- All Others

Estimated total value in 2000 $600 million

INBAR PCS studies
(also supported by IFAD grants)

Asia (Philippines, Malaysia, Indonesia)

Africa (Ghana, Tanzania, Kenya, Uganda)

Latin America (Peru, Ecuador)

FAO/INBAR Expert Consultations:

Rattan Current Research Issues and Prospects for Conservation and Sustainable Development. FAO Rome, 5-7 Dec. 2000

FAO/INBAR Expert Consultation on Bamboo and Rattan Statistics, Rome 4-6 December 2002

As the result 6-digit codes were introduced in the Harmonized System (HS) by the WCO for:

- bamboo shoots
- boards
- flooring
- furniture
- pulp and paper
- charcoal

with the implication of tariffs and taxes relief

Home	About INBAR	Contact Us	What's New?	Events	Facts	FAQ	Programmes	Information Portal

INBAR Database on Bamboo and Rattan Trade is a direct product of cooperation between INBAR, International Tropical Timber Organization (ITTO) and European Forest Institute (EFI). It is based on the UN Statistical Division COMTRADE data, utilizing Harmonized Commodity Description and Coding System (HS) used by World Customs Organization (WCO). For the short introduction of the Database please click **here**.

1. Select the **product**:

2. Select the **year**:

3. **Import Export**

4. Select the **reporting country**:

5. Select the trade **partner countries**: (For multiple selection, please hold down the CTRL or SHIFT key while clicking to select multiple countries)
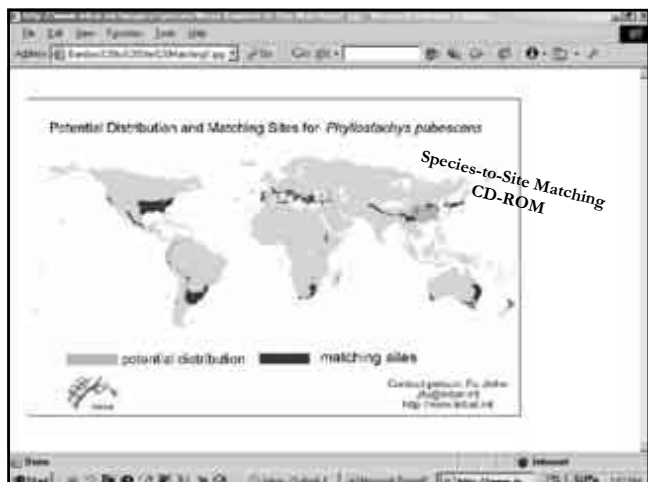
Ref: http://www.inbar.int/trade/main.asp

Summary of B&R trade, COMTRADE data, 2000, 1000 USD

Commodities	HS Code	Export	Import
RAW MATERIALS		128547	179399
Bamboo	140110	39602	59590
Rattan	140120	49548	75923
Veg. plaiting materials	140190	39397	43886
PRODUCTS		2417839	2740750
Plaits and products	460110	17777	13909
Mats and screens	460120	219404	170210
Plaited materials not mats	460191	29933	122545
Basketwork	460210	713799	932795
Seats of cane, osier	940150	371366	423166
Furniture of cane	940380	1065560	1078125
VEGETABLES (Including SHOOTS)		2541748	2490194
Vegetables incl. shoots	070990	1156968	1112536
Vegetables fresh or chilled nes	071190	259281	293681
Vegetables mixed	200590	1125799	1083977
TOTAL		5088134	5410343

World trade value of selected commodities, billion USD

Banana	5
Cotton	6
Wheat	13
Tropical timber	14 (8+6SPP)
Bamboo and rattan	5-7 (estimations)

Source: CFC Annual report

Potential Distribution and Matching Sites for *Phyllostachys pubescens*

Species-to-Site Matching CD-ROM

potential distribution   matching sites

Forest Classification

Satellite Image
(NE India under IFAD grant)

Bamboo Resource Inventory

Conclusions

- unlike wood bamboo industrial products are new for the market and are overlooked by the national and international statistics
- there are problems of quantification of global resources, production and trade
- miscalculation leads to misunderstanding and misallocation of the resources
- international database on b&r resources, production and trade was established but needs to be further developed in cooperation with FAO, IFAD, UNECE, ITTO and other partners and donors