



mushrooms, game), compared to the level determined to be sustainable-(b).

3.3 -- Criterion 3: Maintenance of forest ecosystem health and vitality

Indicators:

- a. Area and percent of forest affected by processes or agents beyond the range of historic variation, e.g. by insects, disease, competition from exotic species, fire, storm, land clearance, permanent flooding, salinisation, and domestic animals-(b);
- b. Area and percent of forest land subjected to levels of specific air pollutants (e.g. sulfates, nitrate, ozone) or ultraviolet B that may cause negative impacts on the forest ecosystem-(b);
- c. Area and percent of forest land with diminished biological components indicative of changes in fundamental ecological processes (e.g. soil nutrient cycling, seed dispersion, pollination) and/or ecological continuity (monitoring of functionally important species such as fungi, arboreal epiphytes, nematodes, beetles, wasps, etc.)-(b).

3.4 -- Criterion 4: Conservation and maintenance of soil and water resources

This criterion encompasses the conservation of soil and water resources and the protective and productive functions of forests.



Do current forest certification schemes ensure sustainable woodfuel harvesting?

(Chapter 2 – joint FAO & IEA Task 31 book project)

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Joint IEA Bioenergy Task 29, Task 38 and Task 40
Expert Consultation on Sustainable Biomass

25 – 26 October 2007, Dubrovnik, Croatia



Contents

- Sustainable forest management
- Overview of standards
- Forest certification statistics
- Criteria & indicators

- Do current certification systems ensure sustainable forest fuel harvesting?
- How to proceed?

Sustainable forest management C&I

1. Sustained production
2. Sustained ecosystem functions, health & vitality
3. Biological diversity
4. Protection of soil & water
5. Carbon balance
6. Social, economic & cultural benefits
7. Human health, rights & participation
8. Monitoring, assessment & impact evaluation
9. Adjustment of management accordingly
10. Policies & frameworks



'Critical' issues

Actions:

- Residue, whole-tree and stump harvesting
- Pre-drying in the forest
- Compensation fertilization

Main concerns and benefits:

- Productivity and soil fertility
- Breeding and feeding material for wood living organisms
- Soil disturbance
- Deforestation, forest degradation, displacement
- Socio-economic benefits (access,

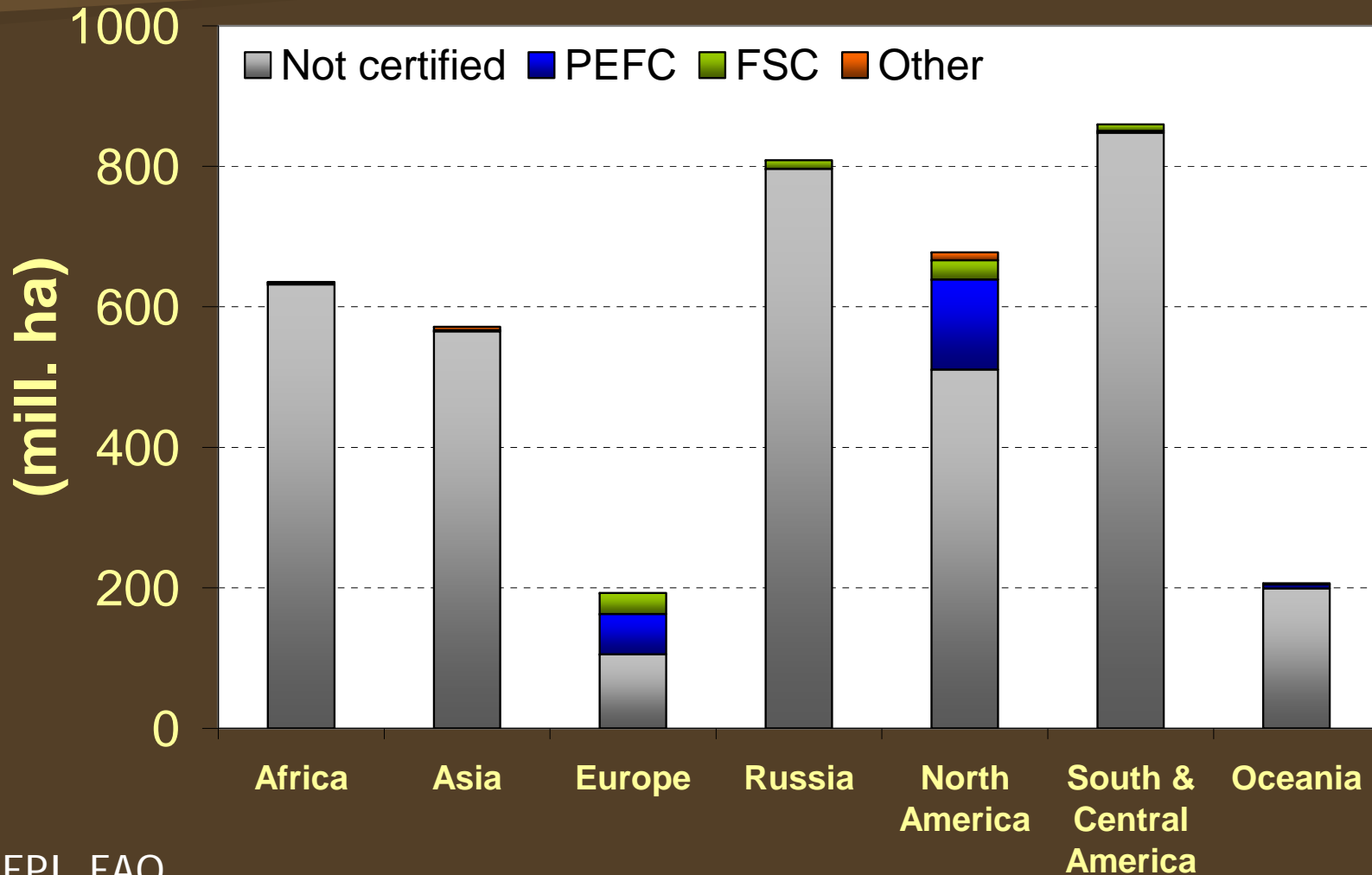
Other:

- Guidelines

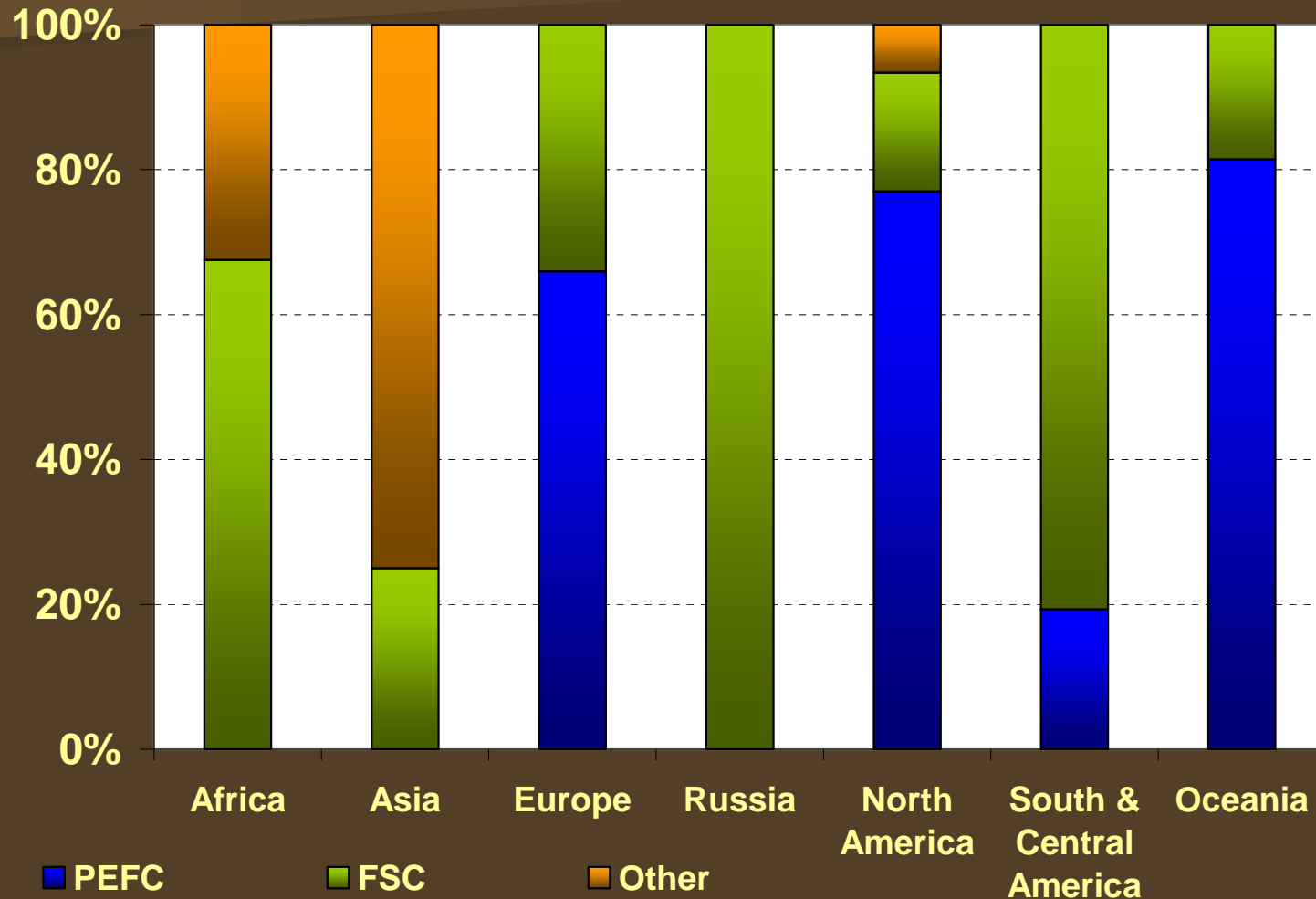
Overview of standards

- International processes etc: 10
- Forest certification
 - FSC & FSC interim (SGS, Smartwood, SCS, and IMO) : 74
 - PEFC, PEFC endorsed & members: 29
 - Other: 3
- Green electricity: 14
- Sustainable biomass: 1

Certified and uncertified forest area



Prevalence of forest certification schemes



C&I of international

- Productive functions
- Socioeconomic benefits

- Property rights
- Access
- Stakeholder rights
- Taking account of all forest functions
- Guidelines for rational harvesting
- Use should be identified
- Monitoring and impact evaluation
- Adjustment of management
- Effective marketing

- General formulations: sustained productivity, nutrient balances, soil disturbance, adherence to legislation and guidelines

- NTFP: CIFOR, ATO/ITTO

FSC

- Charcoal (Namibia, Zambia)
- Monitored and controlled firewood collection (Nepal)

1. Principle 1: Compliance with laws and FSC Principles
2. Principle 2: Tenure and use rights and responsibilities
3. Principle 3: Indigenous peoples' rights
4. Principle 4: Community relations and worker's rights
5. Principle 5: Benefits from the forest
6. Principle 6: Environmental protection
7. Principle 7: Management plans
Controlled access, customary use, lawful use of firewood should be allowed
8. Principle 8: Monitoring
(Belarus, Estonia, Hawaii, Malaysia, Mozambique, Russia, USA, Zambia)
9. Principle 9: Maintenance of forest health and vitality
10. Principle 10: Plantations
Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification

FSC - P5 - benefits

■ 5.2. Optimal use

- Collect market information, include in the management strategy (Finland, USA), local processing of residues / charcoal (Spain, Mozambique, Namibia)

■ 5.3. Minimise waste

- Encouraging, allowing, or prohibiting use of residues and whole-trees to various extents (Belarus, Canada, China, Germany, Korea, Latvia, Luxemburg, Malaysia, Mozambique, Namibia, Russia, Spain, South Africa, Switzerland, UK, USA)
- Do not waste timber (Brazil, Columbia, Papua New Guinea, Peru)

■ 5.4 Diversify local economy

- No timber suitable as fencing poles may be processed or marketed as firewood (Namibia)

■ 5.6. Sustainable harvesting rates

- Harvests do not exceed sustainable harvesting rates (timber: many countries, non timber forest products: some countries)

FSC - P6 - Environmental impact

■ 6.3 Maintenance of ecological functions and cycles

- Limiting or prohibiting use of residues and whole-trees to various extents (many countries) or use according to recommendations (Sweden)
- Wood ash to restore the ecological cycle (Finland, Sweden)

■ 6.5 Guidelines to avoid erosion and harvesting damage

- Harvesting wood for energy: Tapio guidelines (Finland)
- Limited scarification and top soil removal, and only for regeneration (Germany, USA, Czech Rep.)
- No waste material in stream courses (New Zealand, Czech Republic, Estonia, Lithuania, Romania)

■ 6.6 Environmentally friendly, non-chemical methods

- Fertilisation: not for increased yield (Czech Rep., Denmark, Germany, UK)
- Exception: Wood ash after forest fuel harvesting (Denmark)

Potential trade-offs

Leave residues for biodiversity, maintenance of nutrient cycles and on skidding tracks to avoid soil compaction

Compensation fertilisation

Stump harvesting, root rot abatement

Minimise harvesting waste, removing residues for energy or to reduce fire hazard or risk of insect pests

- Branches and bark being left as **far as possible** (Germany)
- No WTH **where it is likely to have significant negative effects** (UK)
- Sweden: 6.3. Ecological functions, Finland: 5.3. Minimise waste
- Fertilisation, scarification: avoid, but **exceptions**
- **No mention**

Do current certification systems ensure sustainable woodfuel harvesting?

- General criteria: Give appropriate framework
- Specific criteria: Scattered occurrence
- Tropics : General formulations
- Trade-offs : Balancing not easily understood
- Intransparency: Interpretive decisions made according to manuals, and by certifiers & auditors

Possibilities for improvements



- Increase specificity, balancing of trade-offs
- Transparency - flexibility
- Focus on woodfuel in the tropics
- Interaction with other governance means
- Pragmatic approach, transition period
- Continued monitoring, impact evaluation, research



Energy labelling

Criteria on biomass origin

OK

- FSC certified forest, possibly with a transition period
- Forest with environmental management system (EMS)
- Sustainable harvesting levels or long-term soil fertility

Not OK

- Forests of high conservation value
- Plantations after clearing of old growth or native forest
- Waste of endangered species
- Genetically modified plant matter

THANK YOU!

- All questions, opinions & expertise welcome
- Soon seeking reviewers

Paper available (+PEFC):

- *Stupak et al. 2007: Sustainable utilisation of forest biomass for energy - possibilities and problems: Policy, legislation, certification, and recommendations and guidelines in the Nordic, Baltic, and other European countries. Biomass & Bioenergy, 31, 666-684*

Bioenergy labelling

Sustainable energy:

- 100% Energia Verde
- Bra miljöver
- Ecoenergia (Norppa)
- Ecolabel UZ 46 Austria
- Environmental Choice
- EUGENE
- Green-e
- GreenPower
- Grüner Strom Label
- Naturemade
- OK Label
- RECS
- REGOs
- Umweltfreundliche Energien (TÜV)

Sustainable biomass:

- Green Gold Label

Environmental management:

- ISO 14001
- ISO 9001
- EMAS

International processes etc

- Dry forests Asia
- Dry Zone Africa
- Lepaterique
- MCPFE
- Montreal
- Near East
- Tarapoto
- ATO/ITTO
- CIFOR
- ITTO

Forest certification schemes

- FSC
 - 28 national standards + interim by SGS, Smartwood, SCS, and IMO
 - 65 countries, all continents
- PEFC
 - 23 endorsed standards + 6 member standards or standards under assessment (incl. AFS, *ATFS*, CSA, CerFlor, CertForChile, FFCC, *MTCC*, Norwegian living forests, Q-label, SFI, UKWAS, Woodnet)
 - 29 countries, Europe, North and South America, Australia, *Asia*
- Other
 - LEI, Keurhaut, SGEN