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**Special topic: Forest Resource Assessment**

(Item 7 of the Provisional Agenda)

Secretariat Note

The special topic of the Joint Session of the UN/ECE Timber Committee and FAO European Forestry Commission is Forest Resource Assessment. The subject will be presented by the secretariat on the basis of the report "*Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand*" (TBFRA-2000), published in spring 2000 (ECE/TIM/SP/17). Delegations will be informed on the results of the Assessment, its main findings and proposals for follow-up work in this area. The recommendations and conclusions of the TBFRA team of specialists, which held its meeting on 21-22 May 2000 in Joensuu (Finland) summarized in this document, and presented in detail in the report of the team (TIM/2000/4/Add.1; FO:EFC/00/5/Add.1).

Delegations are invited to:

- Review methods, results and findings of the TBFRA-2000;
- evaluate the implementation of the TBFRA-2000 study as a whole;
- consider the TBFRA-2000 contribution to the Global FRA process, and international initiatives, such as the Ministerial Conference on the Protection of Forests in Europe;
- review conclusions and recommendations of the team of specialists;
- express gratitude to TBFRA partners and contributors (ToS, national correspondents, co-operating organizations and institutions, individual experts, many others involved);
- decide on the direction of future forest resource assessment work.

## **Introduction and background**

1. The UN-ECE/FAO Temperate and Boreal Forest Resources Assessment (TBFRA-2000) has been carried out under the auspices of the Joint FAO/ECE Working Party on Forest Economics and Statistics, a subsidiary body of the FAO European Forestry Commission and the UN/ECE Timber Committee. The study was initiated soon after the world level expert consultation held in June 1996 (Kotka, Finland), and implemented as a part of the Global FRA-2000. The project was accomplished by the publication of the Main Report "*Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand*" (ECE/TIM/SP/17) in May 2000.
2. The Kotka consultation reached agreement on terms and definitions to be applied in all parts of Global FRA, and provided the background (Global Framework) for the temperate/boreal part of the Assessment. The main instrument of data collection for temperate and boreal industrialized countries was a detailed enquiry built on the proposed global platform. The enquiry was drawn up in 1996-1997 under the guidance of the team of specialists and in close consultation with national correspondents, and interested institutions/organizations. It was sent to the officially designated national correspondents of the 55 temperate and boreal zone countries in September 1997.
3. The TBFRA enquiry (25 tables with over 700 parameters), which included the set of agreed terms and definitions, had given an important guidance to countries. The TBFRA correspondents were asked in the interests of global comparability to adjust national data to the international definitions (standards) and to record in detail the adjustment process. The correspondents were supplied with detailed explanations of the project and all necessary supportive documentation. The briefing meetings which were organized in September and November 1997 in Gmunden (Austria) and in Geneva, played an important role at the preparatory stage of the Assessment.
4. One of the main reasons of the positive attitude of countries to the study in general, and of the high response rate to the enquiry in particular, was an intensive dialogue with partners (especially with the national correspondents) in the process of the implementation of the project. After the country replies were received in 1998, the secretariat undertook a process of in-depth checking and validation of country information, and the data were entered in the database designed in the Access format.
5. The TBFRA information including statistics and the descriptive components of national replies (notes, comments, explanations, supplementary and supportive data, etc) was loaded into an electronic database, which facilitated the data handling and analysis, and helped in the process of the preparation for the TBFRA publication and dissemination.
6. The TBFRA-2000 appeared to be the most ambitious attempt yet to bring together internationally comparable data on the temperate and boreal forests of industrialized countries. It includes not only traditional forest inventory parameters, but also attributes on biological diversity, environmental protection, carbon flows, forest condition, non-wood goods and services. It is intended for use by a wide range of experts, institutions and organizations, and contributed to the high-level international forest policy dialogue.

### **TBFRA-2000 components and results**

7. The range of information received from countries, included into the database and published in the Main Report is very wide. The statistical data are compiled into more than 80 main country-wise tables, which are accompanied by notes and comments provided by the national correspondents. For some variables, the TBFRA-2000 information is presented in a descriptive format, rather than as absolute figures. The country information was analyzed and presented in the thematic chapters of the Main Report. The hard paper copy of the Report was published in May 2000, and its electronic version was posted on Internet, the UN/ECE Timber Committee web-site <<<http://www.unece.org/trade/timber> >>.
8. The information received from countries was generally of a high quality, and country replies were fairly well documented. Still, the secretariat in cooperation with the national correspondents had managed to settle quite a number of difficult issues and points in the country data sets. This concerns the completeness and consistency of the replies from some countries, as well as the comparability of the supplied data within country replies, and between countries. The improvements and modifications made in the process of checking and validation were mainly not fundamental in nature. The process of closing the information gaps, done by the secretariat in close cooperation with the TBFRA-2000 country focal points, was very productive and helped a lot in completing and finalizing the data-set.
9. The preliminary temperate/boreal FRA-2000 results were reported to the Ministerial Conference on the Protection of Forests in Europe (Lisbon, June 1998). The Conference acknowledged the collaboration with the FRA process, and particularly the “support given in data collection by inclusion of most of the existing pan-European quantitative indicators (of SFM)” in the temperate and boreal forest resources assessment programme.
10. The first draft report, including its analytical chapters accompanied by tables with the data by country, was reviewed and analyzed by the Team of Specialists (ToS) in March 1999. The Team concluded that the draft “provided a good and well elaborated basis for the preparation of the final Main TBFRA-2000 Report” by the year 2000. The recent meeting of the Team (Joensuu, Finland, 21-22 May 2000), reviewed and analysed the final results of the Assessment, first of all the Main TBFRA-2000 Report “*Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand*”, and confirmed the successful implementation of the project (TIM/2000/5/Add.1).
11. The report “*Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand*” was published as a UN/ECE Timber Committee study paper. It presents the most recent, the best possible and the most comprehensive ever information on the forest resources of the 55 industrialised temperate and boreal countries, covering practically all aspects and functions of the forest. The TBFRA-2000 was presented in May 2000 to the Joint Bureaux of the UN/ECE Timber Committee and FAO European Forestry Commission, which endorsed the main findings of the Assessment, and proposed to review the subject as a special topic at the Joint Session of these parent bodies in October 2000.

12. The statistics and descriptive information analyzed in specific thematic areas was presented in the following chapters of the Main Report: “Area of Forest and OWL: Situation and Changes”, “Ownership and Management Status of Forest and OWL”, “Wood Supply and Carbon Sequestration: Situation and Changes”, “Biological Diversity and Environmental Protection”, “Forest Condition and Damage to Forest and OWL” and “Protective and Socio-Economic Functions”. The main findings are summarized in the Executive Summary.
13. The information on the accuracy, comparability, and reliability of TBFRA-2000 data (quality of data) forms a special section in the Report, and provides a scientific background for further analysis of the forest resources data. This approach is a new and important feature of the assessment, and more detailed presentation of findings in this area could be published as an accompanying/satellite TBFRA paper.
14. All the national statistical data and the key descriptive (supplementary) information and comments are loaded into the TBFRA-2000 electronic database. Work is being done on the preparation and presentation (placing) of the TBFRA-2000 electronic database in the most user-friendly format within the Internet environment. In fact, the database could be considered (and further developed) as a specific product elaborated in the process of the Assessment 2000.
15. Concerning the electronic database, two principles should be accepted: a) data be available in a user-friendly form, b) but that the raw data should be protected so that they could not be changed and then presented as “TBFRA data”. Of course, they can always be exported into other formats and then used in any way, but then it would be the user’s responsibility. The decision should be taken by the secretariat and the parent bodies on whether the database should be of “an interactive structure”, “read-only” or with any other operational functions. At a later stage, the database should be transformed into executable stand-alone version which can be used without Access. The alternative version might include possibilities for users to define queries on the information needed.
16. The processing and analysis of the TBFRA-2000 data, as well as the publication of the Main Report, have proved to be even more time and labour consuming exercises than it had been expected. The timing for the implementation of the TBFRA follow-up work, and preparation for the next round of the assessment should be considered specifically, depending on the availability of the secretariat resources.
17. In general, the TBFRA-2000 results have justified and satisfied the high expectations, and has been widely well received. The timely publication of the challenging Main Report, and the Internet presentation of the TBFRA results was helpful in this respect. The problems encountered in the process of the TBFRA data collecting and analysis (and their solutions) were discussed in depth (chapter by chapter) by the team of specialists in May 2000, and summarized in the report of the ToS meeting (TIM/2000/5/Add.1, item 8).

### **TBFRA contribution to the Global FRA-2000 and international forest policy dialogue**

18. The ECE/FAO work was not designed or carried out in isolation, but as an integral part of a global programme - the Forest Resource Assessment, led by the FRA team in Rome, to provide the best ever information on the world's forests. For practical and historical reasons, notably because of the huge differences between countries in capacity of forest inventory institutions, different approaches were adopted to data collection, although the core definitions and concepts are the same world-wide, so that final output will be a single "seamless" global data set. For industrialized temperate and boreal countries, the work was led by ECE/FAO and for the rest of the world by the FRA team at HQ, which is also responsible for the global synthesis.
19. The importance of improving the quality and scope of the information available has been recognized the highest level. Since UNCED (1992) the majority of industrialized countries have reviewed and revised their national forest policies, and prepared strategies on sustainable forest management (SFM). The high-level international forest policy dialogue, which was going on under the CSD umbrella, had emphasized that comprehensive and reliable information on forest resources is indispensable for sustainable forest management. It was widely expected that the work on FRA-2000, which had been done by FAO (Rome) and UN-ECE/FAO (Geneva), should provide this kind of factual and reliable information, and the project would properly serve the SFM objectives.
20. The ECE/FAO secretariat has supplied the TBFRA data in the requested format for the incorporation into the Global FRA 2000 data set. The country comments and notes to the TBFRA data will be included also in the Global FRA-2000 publication, as they form an integral part of the data set. Brief introductory texts on forest resources of industrialized temperate/boreal countries together with forest cover digital maps were also sent for posting on FAO Internet page. It was proposed that one of the future TBFRA ToS meetings could be organized in FAO headquarters. This would bring much closer together the temperate/boreal and tropical parts of the Global FRA, and some key players of the tropical FRA could participate in the TBFRA ToS discussion.
21. The UN-ECE/FAO co-operation with the Ministerial Conference on the Protection of Forest in Europe has been fruitful and mutually beneficial. An important part of the pan-European indicators (as many as possible) were included in TBFRA-2000. The preliminary (interim) results were summarized in the report for the Lisbon Ministerial Conference (June 1998). The TBFRA data included in the Lisbon report (28 country-wise tables accompanied by charts, graphs and explanations) were supplied before the validation and analysis process was completely finished, so they were not be considered final and did not correspond in full with those published in the Main TBFRA-2000 Report as a part of the information presented to Lisbon has been modified since June 1998.
22. The published report is able to provide objective information not only on most of the indicators of sustainable forest management drawn up by the pan-European process, but could also respond to

other initiatives, such as the Montreal Process, as well as to provide information for the international policy dialogue within CSD/IFF/UNFF, and for a number of international forestry related conventions.

### **Partnerships, co-operation and contributions to TBFRA**

23. The implementation of such a challenging project would not be possible with only the limited secretariat resources. The role of national correspondents and the team of specialists on TBFRA-2000 was invaluable and decisive. Many countries, international organizations and individual experts contributed significantly in different forms at each stage of the TBFRA preparation and implementation. Austria, Finland, France, Switzerland, United States of America hosted important meetings and workshops. Austria, Norway, Portugal and Switzerland have provided an important manpower and financial support. FAO, EU/EEC, EEA, IUFRO, SAI/JRC, WCMC, WWF, EFI, CBD, ICP-Forest, and some other organizations have shared their knowledge, expertise and supportive information.
24. The programme of work of the Ministerial Conference Liaison Unit in Vienna had been developed taking full account of the close co-operation with the UN-ECE/FAO, Geneva, and it had relied on the support of the TBFRA process. The Liaison Unit expressed its high satisfaction with the existing co-operation, and would like to maintain and further develop the working contacts.
25. An excellent example of the ECE/FAO co-operation with the regional processes in the TBFRA area is a supplementary survey on the "protected forest areas", which is being done by the pan-European Ministerial Process in co-operation with the ECE/FAO secretariat. In TBFRA, the countries interpreted differently the IUCN protection categories, so that their replies to the enquiry were not consistent, and the information supplied by national correspondents appeared to be non-comparable and non-representative (actually IUCN categories had been elaborated for ecosystems, but not for forests). A new more detailed questionnaire was sent to countries, and the information on the "protected forest areas" is being compiled into the electronic database and analyzed. The report will be presented to the next round-table meeting of the pan-European process (autumn 2000), and published as an ECE discussion/study paper later on.
26. The ECE/FAO Team of Specialists (ToS) on the Temperate and Boreal Forest Resources Assessment (TBFRA) started its activities in March 1995 (the inaugural meeting). The Terms of Reference (ToR) and the ToS Mandate were approved by the Joint FAO/ECE Working Party on Forest Economics and statistics in June 1995, and confirmed/extended by the 22<sup>nd</sup> session of the Working Party (26-28 May 1999). In accordance with the Working Party's programme of work, the team has guided the preparation of the TBFRA enquiry and helped a lot in the implementation of the project.
27. In March 1998 the team reviewed the status and progress made in the TBFRA-2000 implementation, noted achievements and gains, as well as difficulties and problems. The ToS defined the scope of work to be done in the forthcoming months and provided useful recommendations on the preparation

of the interim report for the Lisbon Ministerial Conference. At its recent meeting held in Joensuu (Finland), in May 2000 Report, the team reviewed and analysed the final results of the Assessment, first of all the Main TBFRA-2000, and considered direction of further analyses and dissemination of the TBFRA information, TBFRA follow-up work, and preparation for the next round of the temperate/boreal assessment.

28. The team endorsed the approach which had been used in the TBFRA-2000 process, reviewed the strengths, weaknesses and missed opportunities in the project implementation. The team confirmed the success of the implementation of the TBFRA project, which is the main UN/ECE contribution to the Global Forest Resources Assessment 2000. The ToS meeting appeared to be an important “benchmark event” in this forest resources assessment process. The outcome of the meeting has formed the basis for conclusions and recommendations.
29. The team noted that the Joint FAO/ECE Working Party had extended its mandate until the year 2002 taking account that it had already got a very good “grasp” of the issue which would be helpful in the future TBFRA work. The experience of the team, and the lessons learned from the Assessment 2000 will help to propose optimal solutions for the problem areas in the future. The Terms of Reference for the Team should be adjusted at the next Working Party session.
30. TBFRA-2000 was made possible by contributions from many sources. First is the effort required at the national level to collect the data and to adjust them to international definitions. Then comes participation in the team of specialists and contribution of resources, in cash or in kind to help the secretariat. Many distinguished experts have contributed their knowledge and experience to the preparation and review of TBFRA data and chapters. Governments and partner organizations have provided resources. All of these contributions are acknowledged in the publication. The secretariat takes the opportunity to express its heartfelt thanks to all who contributed to preparing TBFRA.

#### **Lessons learned for the future**

31. The following factors predetermined a good level of cooperation within the team of specialists with the TBFRA partner institutions and organizations, with individual experts, and first of all with the TBFRA national correspondents:
  - TBFRA-2000 has been initiated by participating countries, and its general scope and coverage has been defined from the very beginning with countries’ support;
  - The global platform for the Assessment was agreed in good time at the world level expert consultation;
  - The network of TBFRA national correspondents was established on an official, ministerial (or governmental) basis, and in good time before the project initiation;
  - The network had been kept operational from the very beginning of the process through the information needs enquiries, adjustment issue, data checking and updating figures for SOFO-97 and 99, other concise queries, Gmunden and Geneva briefing meetings, etc;

- Preparation for the Ministerial Conference (Lisbon, June 1998) was a stimulating factor for accelerating the whole project;
  - The role and contribution of the team of specialists on TBFRA-2000, as a factor in this successful development of the project was vital;
  - TBFRA-2000, as a part of the Global FRA-2000 process, received important support and partnership from a number of international organizations, as well as support from the CSD/IPF/IFF international forest policy dialogue;
  - Good partnership and the important support which TBFRA, as part of the Global FRA-2000, has been receiving from the FAO Forestry Department;
  - The participating countries, through their national correspondents, have demonstrated their good will and provided necessary support at each stage of the project implementation.
32. Nevertheless, there is still considerable scope for improvement in future forest resources assessments, and in the international forest and forestry relating data sets for policy discussion, notably in the following areas:
- measurements of change: to remedy this implies continuity and stability in the core FRA terms and definitions;
  - in some areas, notably protection of biodiversity (protection areas), biomass assessment, non-wood goods and services and forest damage/condition, there is need for further reflection on how to evaluate the data already collected and how to improve their comparability;
  - there may be a need to expand in future assessments the information in the field of social and economic aspects, and to initiate data collection in these areas;
  - countries should review their regular national information collection systems on the forest resource and their methods of adapting national data to international definitions, to ensure that they will be able to continue to provide on a regular basis the information necessary for international discussion of developments in the forest sector;
  - international organizations involved in the collection and dissemination of information on sustainable management of the forest resource should continue to co-operate and harmonize their activities, sharing information collection and dissemination activities as appropriate.
33. To a great extent the success of the temperate/boreal FRA in the industrialized countries depends on the level of national forest inventory systems, and the ability of national correspondents to provide comprehensive, consistent and reliable replies to the questionnaires. Much of the information called for in the enquiry and supplied by countries was derived from data collected in the national forest inventories. The network of country correspondents, whose knowledge in many countries is based, along with the traditional forest inventory methods, on aerial photos, satellite images, GIS, etc, will remain one of the main driving forces of the assessment and sources of information in the future.
34. There should be a strong UN/ECE and FAO commitment to keep the TBFRA-2000 terms and definitions, which are being used at present internationally, substantially unchanged and stable in future assessments. If any changes were to appear necessary, they should be undertaken immediately on completion of the Global FRA-2000 project, and on the basis of its results and on a global level.



This should be the subject of the consideration at the next meetings of the ToS on TBFRA and the Joint FAO/ECE Working Party, as well as global FRA fora.

35. Despite difficulties, missed opportunities and problems listed above, the TBFRA process has created many positive effects at the international and country levels, and could be considered as valuable in itself. Among these positive features are:
- TBFRA has had a stimulating role which has helped to improve national and international partnerships;
  - elaboration of the internationally agreed set of terms and definitions;
  - further development of the national forest inventory and data collection systems; some countries reported their international data requests, such as TBFRA, stimulated reappraisal of national data systems;
  - increasing application of the internationally standardised definitions at national level;
  - countries' direct and indirect benefits from "newly done assessments of non-traditional parameters", and bringing more knowledge on this issue within country;
  - opportunity to check the integrity and consistency of national data on the basis of the Global FRA platform and TBFRA standards, etc.
36. Some countries have noted that they will further improve their data collection and reporting capacities to the international level, especially with regards to non-traditional parameters and socio-economic data, and that they will be in a better position to respond to the next TBFRA enquiry.

#### **TBFRA-2000 follow-up work**

37. The publication of the main TBFRA report is by no means intended to be the end of the process. The follow-up work and the next phase of the assessment have already started, including the provision of the temperate and boreal forest resources data to the Global FRA-2000 database. The TBFRA data will be fully integrated into the global data set, with the notes and comments provided by countries, and presented in country files at the FAO web-site.
38. It was not possible to include all the information provided by countries in the Main TBFRA-2000 Report. In particular, the full list of tree species were omitted (in two cases over 1000 species), as well as the ranges which were applied for key parameters. Further analysis of the collected information and the publication of a number UN/ECE Timber Committee discussion/study papers on the basis of the information received from countries would be desirable and needed. It would also be possible to use in these papers (only for purposes of analysis, or as illustration of specific points) other (non-TBFRA) sources of information.
39. Although the main TBFRA-2000 publication includes sufficient detail which is useful by itself without any external support, a more detailed information still will be published in linked documents

(“working”, “satellite” or “accompanying” papers). The TBFRA ToS has proposed the following list of possible TBFRA satellite and accompanying papers:

- Likely ranges, data quality and reliability, correct use/interpretation, adjustment issue;
- Forest damage and forest condition think pieces, and other similar topics;
- Set of the latest (1998/1999) data on the forest resources of the Russian Federation;
- Analysis of the forest balance (GS/NAI/Fellings) in its dynamic and development;
- Synthesis of the TBFRA information by country groups;
- Forest Protected Areas (in co-operation with the pan-European process);
- Analysis of main TBFRA tree species, their distribution, mapping, biodiversity aspects, etc;
- Producing a set of concise country files: essential data, comparative charts, brief overview

40. It would also be interesting to analyze how far the reported parameters in the “Biological diversity and environmental protection” chapter of the Main Report actually meet the requirements of the various international and pan-European agreements on this issue. This would provide a very useful overview of the current situation, illustrate where the TBFRA-2000 strengths, limitations and gaps lie, and show the direction of future improvements.
41. The follow-up work to produce further TBFRA-2000 products, like satellite or accompanying papers, specific or thematic reports, as well as work on the dissemination of the TBFRA-2000 information has already started and will be continued in the year 2001.
42. The seamless nature of the global FRA data set which brings together the TBFRA data and the data for tropical countries, and which is being collected and validated by the team in Rome, is an important factor of the successful implementation of Global FRA 2000. There is a need for globally coordinated planning of next steps, and for the Global FRA follow-up work.
43. The presentation of the TBFRA information by ecological zones, “regionalisation” of the data, i.e. presenting them at sub-national levels, expansion of the TBFRA data-set into the relevant socio-economic areas, including e.g. “employment” data, should also be considered as possibilities of the TBFRA “value-adding”, especially when preparing for the future assessments, although all of these have significant technical and resource implications and would necessitate further partnership building.
44. The paramount importance of TBFRA terms and definitions and the acute need to maintain their continuity and comparability over the time, i.e. the necessity to maintain the global FRA platform which has already been defined in the process (Kotka-III), should be in the focus of the follow-up work. The definitions help to facilitate the adjustment of national data to international TBFRA standards. The TBFRA satellite paper on data quality, which has to be prepared before the next assessment, should pay a special attention to the definitions and adjustment issues. The need to develop national capacities to adopt international definitions was also emphasized.

### **TBFRA dissemination and public relations**

45. The Temperate and Boreal Forest Resource Assessment 2000 is the most comprehensive data set so far on the world's temperate and boreal forests, and a major research tool and input to the policy debate on sustainable forest management. However, it is only useful if it is known to potential users. After the Main TBFRA-2000 Report is published, all the available instruments and tools for PR and dissemination of the TBFRA information are being used by the secretariat. The press releases were issued by the secretariat in due time, with the aim of facilitating the dissemination of the TBFRA information not only in the international mass-media, but also at the national and local levels. National governments are encouraged to make available all or part of the TBFRA in their own languages.
46. There is a plan to issue an information flyer based on the Main TBFRA Report, which would be useful in PR and publicity work, and would help in the TBFRA promotion in national and local press. The flyer should be available for all national correspondents, so that they could organize its translation and dissemination. The TBFRA and Global FRA publicity and PR work in the different forms are an important area of the follow-up process, and the TBFRA ToS proposed a list of activities in this area (TIM/2000/5/Add.1, item 17).
47. While retaining a paper publication as the main TBFRA-2000 output, all modern means (Internet, CD-ROM) are being used for the publication and dissemination of the information in electronic form. The further development of the electronic database will facilitate and strengthen the TBFRA client service ("interactive" or "not interactive" database version with a user-friendly architecture, other modern means).
48. The secretariat has already started a TBFRA "marketing" and public relations (PR) campaign, which will further be developed in the forthcoming months. The Main TBFRA-2000 Report was published just in time to be presented at the XXI IUFRO World Forestry Congress (Malaysia, August 2000), and it should be presented by the secretariat at other relevant meetings.
49. With regard to the database, arrangements are being made to ensure that the information is widely available in a user-friendly form, which safeguards ECE/FAO and national "ownership" of the data. In particular, unscrupulous users should not be able to change the data and then present them as "TBFRA data". The modalities of addressing this are under discussion.

### **Forest Resources Information Needs: Preparation for the future ECE/FAO assessment**

50. The preparation for the next round of the temperate/boreal forest resources assessment should start with up-dating and widening the information on TBFRA data users, and present-day forest resources information needs. The TBFRA study has shown that some new demands for the FRA information (carbon flow and sequestration, biological diversity, NWGS, etc) are emerging or increasing. A new user needs/evaluation survey should be carried out to serve as a guide to future FRA activities.

51. The following specific points were noted by the TBFRA ToS in connection with the methodological aspects of the future assessment:
- The enquiry/questionnaire approach should be maintained;
  - The network of TBFRA national correspondents should be maintained and up-dated;
  - Remote sensing (RS) data should be used and applied (link to global FRA);
  - Data from different Internet/web and literature sources should be used;
  - Different auxiliary sources, GIS and other related techniques should be involved;
  - ToS should expand and be completed by new experts with the respective expertise and knowledge.
52. The TBFRA experience suggests that the Global Forest Resources Assessment should be maintained and developed as one single project with regional variations such TBFRA-2000. This approach presumes a common planning of the process based on a common global platform with commonly agreed terms and definitions. The future forest resources assessment should be initiated by an expert consultation with the world-wide participation, i.e. something like “Kotka IV”. The consolidation of efforts in the preparation for the next TBFRA round is indispensable for its success. The FAO and UN/ECE should start the preparation of the next FRA consultation after accomplishing and publication of the Global FRA-2000. Pending this Consultation no firm decisions should be taken on implementation of the next TBFRA.
53. It should be noted that such ambitious and costly survey like TBFRA assumes significant financial and logistic support to National Correspondents, and the solution of practical organizational and financial problems in some countries would be necessary in this connection.
54. The scope of the next Assessment should be defined taking account of the necessity to provide more detailed, reliable and high quality information, first of all on non-traditional parameters and NWGS, i.e. a possible expansion (or decrease) of the TBFRA parameters number. The link to criteria and indicators of SFM defined by the pan-European and Montreal processes should be guaranteed. The Internet links between the TBFRA-2000 and national home pages with the forest inventory information would be a step towards the continuous assessment of forest resources in the future.
55. It might be advisable to analyze which countries were suited for which approach, according to criteria of forest type (e.g. temperate/boreal/tropical) or strength of institutions (ability to collect information and respond to a questionnaire).
56. With regard to the TBFRA periodicity, there are possible several options:
- Continuous up-date of the collected information (on WEB)
  - The next round of assessment, as TBFRA-2005
  - The next round of assessment, as TBFRA-2010
  - “Rolling” regional (within temperate/boreal zones) assessments
  - Updating specific “top importance parameters” (to be identified) at shorter periods

- Periodicity harmonized with dates of important events, such as the next Ministerial Conference on the Protection of Forests in Europe (MCPFE) or UNFF.
57. The 10-year rotation as logical and reasonable period to detect changes in the forest resources of the region, is a preferable choice from the TBFRA ToS point of view: i.e. the next round would be TBFRA-2010. The links with other relevant international processes (events), like global FRA, global forest policy dialogue (CSD, MCPFE, Montreal, etc), co-ordination of the data requests with them, taking account availability of the information after new national inventories, should be taken into full consideration.

### **Conclusions and recommendations**

58. The following specific notes, conclusions and recommendations of the TBFRA-2000 team of specialists are summarized below for consideration by the Joint Session:
- The TBFRA-2000 has proved to be a “continuous multi-level and multi-functional complex process”, rather than a “one-time collection/compilation” of the forest resources information;
  - Many national correspondents underestimated the workload requested to prepare country replies to the TBFRA enquiry, especially when different data sources and partners had to be consulted, and when the difficult process of “trouble-shooting” and checking inconsistencies in the data-sets had been done;
  - Lack of sufficient information and data at the national level to respond to all the elements of the ambitious TBFRA enquiry, especially on non-traditional parameters, should be taken into account; more consultation with other agencies at the national level would be needed and helpful;
  - Involvement required to provide TBFRA data should be clarified at the beginning of the process, so that resources of national correspondents would be sufficient to provide the best quality information; It is essential for countries to be informed about attributes and their definitions at an early stage;
  - More strategic planning, profiling and resources at the national level should originally be anticipated, and must be done for the future assessments, especially taking into account the pressure of “new information demands”; some national correspondent would support a possible expansion of the “data acquisition period” at the national level;
  - Some TBFRA categories do not exist in national forest inventory and data collection systems of individual countries, e.g. OWL or FAWS in Australia; Special difficulty was noted in providing data for those TBFRA categories/parameters which are not focussed strictly on forest lands, e.g. protected forest areas (IUCN), biodiversity, socio-economic functions; In some cases the national correspondents were reluctant to provide politically sensitive information, e.g. on forest damage;
  - Difficulties in transferring and adjustment of national data to the TBFRA standard/definitions, especially on “border lines”, e.g. when reporting on “land use” (forest/OWL), “naturalness” (forest undisturbed by man/semi-natural/plantation), “managed forest”, “DBH=0” (not only for small trees 0-7 cm, but also for tops of stems and branches of larger trees) should be taken into account in the future TBFRA work;

- More intensive discussion on a number of parameters, including definitions of “OWL”, “forest available for wood supply”, “managed forests”, “plantation” would be necessary for the next assessment; some TBFRA “soft” and not “self-explanatory” definitions have caused problems for national correspondents;
- There is a need to develop some more definitions, e.g. “Forest damage”, “Protection”, “Soil protection”, with special attention to the categories which do not exist in national forest inventory and data collection systems;
- The present set of TBFRA definitions should be maintained and improved (when necessary). If the definitions have to be (unavoidably) revised (or modified), there should be made a great effort to explain urgent needs of those possible changes to country experts taking account that TBFRA is a continuous process;
- There is a need for a specific international forest resources information needs survey, to clarify and up-date the scope and coverage of the future rounds of the assessment;
- Information on the structure of national forest inventory systems should be collected and included in future TBFRA surveys with the purpose to analyze the accuracy of the delivered information (in particular, the number of sample plots (ground and remote sensing) in individual countries, upon which TBFRA data are based);
- Collection of “employment” and other relevant socio-economic data (if advisable) should be considered specifically when discussing the preparation for the next TBFRA;
- More research would be required in such areas as the assessment of biodiversity, biomass, NWGS, protected areas, and inclusion them in future TBFRA process. For example, in current survey, the NWGS information is more on consumption, than on the actual or potential resources;
- Close links between TBFRA and other international forestry related processes, like pan-European and Montreal, should be maintained and further developed;
- The promotion of the TBFRA-2000 results, and the TBFRA process itself, first of all in the participating countries, and all over the forestry community of the world, will be one of the important issues for the ECE/FAO secretariat, team of specialists and TBFRA national correspondents.