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27-30 September 1999

PROGRAMME OF WORK: RECYCLING, ENERGY AND MARKET INTERACTIONS

(Item 6 of the Provisional Agenda)

Note by the secretariat

The Team of Specialists on Recycling, Energy and Market Interactions fulfilled its mandate and finalized its work by conducting a workshop on these same subjects in Istanbul, Turkey in November 1998. The workshop report is set out in the annex.

The Timber Committee is invited to thank the Team for its work and consider how to follow up on the workshop conclusions (paragraph 30 of the report) and the recommendation: "that the Timber Committee encourage member governments to implement policies and cooperative projects to promote comprehensive recycling systems for paper and wood fibre and wood-based energy systems. In designing and implementing these systems, the potential effects on timber markets and forest management must be carefully considered."

Introduction

1. The Team of Specialists on Recycling, Energy and Market Interactions was created by the Timber Committee in 1996 to follow the work and implement the recommendations of two former teams of specialists: Wood and Energy; and New Products, Recycling, Markets and Applications of Technology. Dr. Bengt Hillring (Sweden) is the team leader.

2. In lieu of a report, the Team presented the special topic at the 56th Timber Committee Session on recycling, energy and market interactions. A Timber and Forest Discussion Paper is to be issued with the papers from the special topic presentations.

3. The Recycling, Energy and Market Interactions Workshop followed the mandate to "analyze the influences and interactions of technological and legislation developments on recycling (solid wood and fibre), energy and timber markets. It will also provide technology transfer to countries in transition." The workshop was conducted in Istanbul, Turkey in November 1998 and was attended by 70 delegates from 22 countries, of which 14 central and eastern European and Asian countries. The report of the workshop is set out in the Annex. Readers attention is drawn to the conclusions (para 30) and the recommendation(para 31).

4. Indeed the workshop succeeded in transferring technical information amongst participants, and now with the proceedings published (available through the secretariat), that information should be transferred beyond the workshop. The workshop's study tour, was successful in not only bridging Europe and Asia, but also in building bridges between those fortunate people who took part and some collaborative efforts have been established as a result.

ANNEX

**"UN-ECE TIMBER COMMITTEE WORKSHOP ON RECYCLING, ENERGY AND MARKET INTERACTIONS
3-6 November 1998, Istanbul (Turkey)**

REPORT

1. A UN-ECE Workshop on "Recycling, energy and market interactions" was held in Istanbul (Turkey) and with its study tour spanned two continents. Speakers and participants from Asia and Europe discussed the status, opportunities and problems in wood and paper recycling, generation of energy from wood and the current and future effects on timber markets.

2. Seventy participants from the following 21 countries ensured diverse viewpoints in the presentations and discussions: Albania, Austria, Azerbaijan, Croatia, Denmark, Estonia, Finland, Germany, Kyrgyzstan, Latvia, Lithuania, Poland, Romania., Slovakia, Slovenia, Sweden., Switzerland, Turkey, Turkmenistan, United States and Uzbekistan. Simultaneous interpretation enabled everyone to communicate. Special thanks go to the generous contributions from Norway, Sweden and Turkey which funded all expenses for nine participants from countries in central and eastern Europe and Asia.

3. The goals of the workshop revolved around the fields of expertise of the Timber Committee Team of Specialists on "Recycling, Energy and Market Interactions". The workshop being the final major activity of the Team was designed to promote an exchange of information and transfer of technology between members of the Team and representatives from ECE member countries in central and eastern Europe, including Asian members of the ECE. The topics of the workshop presentations focussed on:

- (a) developments and trends of wood residue use, wood and paper recycling and wood-based energy generation;
- (b) current national and international legislation and policies which impact recycling rates and energy generation;
- (c) impacts on traditional timber markets.

4. The workshop was opened in a welcome address by Mr. Nevzat Özer, Under-Secretary, Ministry of Forestry, Turkey who cited several forestry-related problems that he said should be tackled, 1. comprehensively from forest owners to industries to governments, and 2. cooperatively on a global basis by governments, universities, institutes and intergovernmental organizations. Next, Mr. Yavuz Yüksel, Deputy Under-Secretary added his greetings, introduced the programme and study tour, and in stating that increased production, including recycling, is critical to economic growth, asked the workshop to consider environmental aspects. Dr. Bengt Hillring, Leader of the Team of Specialists on Recycling, Energy and Market Interactions stated that growing populations will require increasing renewable resources, which presents market opportunities for wood and wood products. Furthermore, an increasing energy demand will be met by a rising percentage of renewable energy sources, where both commercial and governmental incentives are important driving forces. Mr. Ed Pepke, Forest Products Marketing Specialist, UN-ECE and FAO, welcomed participants on behalf of the ECE Timber Committee, gave more details on the programme and challenged

participants to get the maximum information from the workshop and then transfer that information back to their countries.

5. Mr. Yüksel was elected workshop chairman and Dr. Inan Güler was elected vice-chairman. Mr. Pepke was appointed rapporteur.

6. The provisional programme of the workshop was adopted.

Keynote speeches

7. The workshop began with two keynote addresses. The first was by Dr. Ali Sencer Birlir, Director, Poplar and Fast Growing Forest Trees Research Institute, Izmit, Turkey, who said that growing populations will create greater demands for wood and wood products, which would necessitate greater wood supplies. He said that future wood needs would have to come from a combination of: 1. increase harvests where possible (not in Turkey in the short to medium term); 2. importation which is limited by affordability; 3. greater use of recovered wood and paper; 4. substitution of non-wood materials which consume a disproportionately higher amount of energy in their manufacture; and 5. increasing plantations of fast growing tree species. Dr. Birlir forecast that with adequate private investment in afforestation in Turkey that Turkey's dependence on imported wood could be significantly reduced through the production of affordable domestic wood fibre.

8. Dr. Arno Frühwald, Director, Federal Research Center for Forestry and Forest Products, Hamburg, Germany, gave the second keynote address. He said that the life cycle of wood products is evolving and will encompass greater recycling and use of biomass for energy. He mentioned the specific environmental concerns of recycling or burning contaminated residues. Within Europe there are great differences in recovery rates for paper and wood residues, indicating great potential for gains in recycling. However products are competing for some of the same small-diameter roundwood with wood-based energy and thus having effects on the market in terms of costs and prices. He recommended development of products and processes for recovery, grading, sorting and cleaning and the development of appropriate legal frameworks to promote them.

First technical session: Legislation and its effects on recycling and energy

9. Mr. Johannes Hangler, Ministry of Agriculture and Forestry, Austria, chaired the session.

10. Mr. Andreas Lang, University of Hamburg, presented some aspects of the German legislation and its effects on recycling and energy. The goal of the laws is to stimulate recycling and guarantee environmentally friendly waste management.

11. Dr. Peter Ince, USDA Forest Service, spoke on the United States legislative developments which had both supply-side effects (eg, 20,000 municipal recycling programmes) and demand-side effects (eg, tax credits, grants and loans coupled with purchasing requirements for recycled paper content). In 25 years the paper recovery rate doubled to 50%.

12. Dr. Inan Güler, Gazi University, described renewable energy systems and the establishment of energy plantations in Turkey.

13. In an open discussion participants learned about the existence of legislation in other countries and the need for regional coordination of policies to ensure efficient systems of energy generation and residues transportation.

Second technical session: Recycling

14. Dr. Hrvoje Turkulin, Faculty of Forestry, University of Zagreb, Croatia, chaired the session.

15. Dr. Ince spoke on the "North American paper recycling situation and pulpwood market interactions" and said that despite rising recovery of paper, that pulpwood prices in the United States are forecast to increase due to an even larger demand for paper and paperboard.

16. Mr. Atilla Gedikoglu, Dönkasan A.S., an Istanbul paper recycling company, spoke on the rapid rise in paper and paperboard recovery in Turkey, but he lamented that it still remains at only 33%.

17. In the following discussion suggestions were given to increase recovery rates, for example to begin with consumer education to raise environmental awareness combined with legislation to initiate comprehensive collection systems. Again the need for international cooperation was mentioned.

18. Mr. Özdemir Demirtas, Yonga Levha San., Turkey, gave the industry's perspective on both virgin and recovered fibre supply and called for integrated policy and industrial development, in part to reduce dependence on imported wood and to hopefully reduce centrally-established timber prices.

19. Mr. Aziz Bozatli, Consultant for the Ministry of Forestry, Turkey cited the need for effective governmental policies to promote environmentally-friendly, cost-effective energy sources.

20. In a wide-ranging discussion which followed, participants from Asian countries underscored the need to resolve major political and socio-economic problems before initial steps towards development of forest products markets, recycling systems and wood-based energy systems. It was pointed out that in some countries where markets for energy wood exist, that forest owners have benefitted by having an outlet for small-diameter trees from thinnings and logging residues.

21. Dr. Hillring opened the discussion of sources of technology transfer and related assistance by presenting the "Swedish programme for an environmentally adapted energy system in the Baltic Region and eastern Europe." The programme promotes reduction of green house gas emissions through development of sustainable, energy-efficient systems using local energy sources, including wood fuels.

22. During a discussion, the participants from the Baltic countries announced significant developments of wood-based energy systems, sometimes through technology transfer from Nordic countries.

Third technical session: Energy generation from wood

23. Dr. Jan Ilavsky, Director Forest Research Institute of Zvolen, Slovakia, chaired the session and opened with a global description of fuelwood use. Some 90% of fuelwood and charcoal is used in developing countries, mostly inefficiently for heating and cooking. In Europe, 27% of the wood-based energy is produced and consumed by the forest products industry.

24. Dr. Hillring detailed the Swedish wood fuel market which now represents 18% of their energy needs due to the combination of CO₂ taxes on fossil fuels plus incentives for establishing biofuel energy.

25. Dr. Nedim Saraçoglu, Bartın Forestry Faculty, explained the wood energy situation in Turkey. Oil imports could be reduced by 10% in the early 2000s by the promotion of wood energy, based partly on energy plantations established in the 1970s.

26. In the discussions, some countries, like Slovakia and Romanian, noted encouraging developments in wood-based energy, however, production is still very small. Considerable volumes of fuelwood are consumed in rural areas, especially where countries are dependent on imported energy.

Fourth technical session: Market interactions

27. Ms. Anu Karessuo, Environmental Manager, Finnish Forest Industries Federation, chaired the session.

28. Mr. Ramazan Bali, General Directorate of Forests, spoke on the effects on timber markets since recycled paper has become a vital resource for paper and paperboard manufacturing and recycled wood fibre could become an equally vital resource for panel manufacturing. Stating that higher-value forest products are marketable, the problem in Turkey is how to give more value to the other 70%. In Turkey, an integrated system of collection, processing and use of wood-based residues is needed.

Poster session

29. A poster session was held in conjunction with the workshop with the following posters:

"Swedish forest policy and forest legislation" by Ms. Katarina Ekberg, National Forestry Board, Sweden.

"Forests and wood: recycling, energy and market," was the theme for a series of four posters on "Harvesting of roundwood," "Supply to paper and board industry," "Development of fuelwood use," and "Draft of new energy legislation" by Mr. Thomas Grunenfelder, Swiss Agency for the Environment, Forests and Landscape.

"The Energy System in Sweden" by Dr. Bengt Hillring, Swedish University of Agricultural Sciences.

"Aspects of wood recycling and wood energy within the framework of the German legislation" by Mr. Andreas Lang and Dr. Arno Frühwald, Federal Research Center for Forestry and Forest Products, Germany.

"Forestry, Timber Industry and Use of Wood Biomass in Slovenia" by Ms. Nike Pogacnik, Slovenian Forestry Institute.

"Strategy on renewable energy sources" and "Development of pulp, paper and board production in Romania" were the themes of two posters on "Some aspects concerning the use of chemical additives in papermaking when recycled fibres are used" by Messrs. C. Stanciu, Ion Popescu and Nicolae Balan, and on "Some aspects concerning the situation of collecting and re-using wastepaper in Romania" by Messrs. Popescu and Balan, S.C. Ceprohart S.A., Romania.

30. The UN/ECE Timber Committee Workshop on "Recycling, Energy and Market Interactions", hosted by the Ministry of Forestry of Turkey, held in Istanbul in November 1998 adopted the following conclusions :

(a) Growing populations, incomes and technological developments will increase the demand for wood and wood products. Sustainable forest management may limit timber and energy wood harvests. Both developments require improved wood resource management including higher yields of products, use of wood processing residues and recycling of recovered wood fibre and waste paper.

(b) With development of recycling legislation, infrastructure and consumer consciousness, countries in central and eastern Europe will reach the higher recycling rates of some western European and North American countries, especially since these latter countries rates will reach technological maximums.

(c) Currently pulp, paper, paperboard and composite board products in some central and eastern European countries are in need of appropriate governmental policies, legislation, public relations promotion and collection systems to increase the recovery of suitable paper and wood fibre.

(d) In some European and North American countries, successful collection and recycling systems have resulted from an effective combination of policy, legislation, infrastructure, and favourable economic conditions and environmental consciousness. In the United States, paper recovery rates are forecast to rise to 50% and additional fibre will come from higher harvest rates, imports and industrial plantations due to anticipated high pulpwood prices.

(e) In the European Union and some other countries, classification systems of waste, including wood residues, are established, partly to appropriately recycle or dispose of contaminated wood, in order to harmonize the trade between countries. Similar classification systems are missing in some other countries and regions.

(f) Despite rising recovery of paper and wood residues, supplies are declining. United States pulpwood prices are forecast to rise in the long run. Conversely in Europe, pulpwood prices are generally falling due to the current oversupply situation.

(g) In some countries, forest residues, sometimes from thinnings and fast growing industrial plantations, can be an important source of energy. Where appropriate, biodiversity should be considered.

(h) Introduction of taxes on fossil fuels (CO₂ tax) has been essential to create a viable wood fuel market in Sweden. Such taxes could be necessary to encourage the use of wood-based fuels including recovered residues, in other countries, especially at this time of low fossil fuel prices.

(i) The workshop noted that ecological considerations (like resource management, nutrient cycles, CO₂ balance, ash removal from energy production, etc.) could have an influence on decisions of how to use forest resources, processing residues and recovered wood. Ecological aspects are to be considered in strategy development and decision making in order to minimize negative ecological impacts and to strengthen market competitiveness of wood products and biofuels. Special emphasis should be put on optimal end of product life strategies which includes product design, process design and material and energy recycling aspects.

(j) Market interactions of the supply and use of recovered wood fibre and paper and use of wood for energy are not always analyzed or planned in countries policy development and implementation.

(k) Increasing recycling in many countries results in a loss of market share for forest products. Therefore stronger efforts are necessary to find new markets for wood products taking into account the many environmental advantages of sustainably produced wood.

(l) The workshop only initiated an exchange of information, but a great need still exists for further information exchange on the implementation and effects of recycling and wood energy systems, including technology transfer and continuous education on recycling and energy generation, development of policy and legislation, etc.

31. The workshop recommended that the Timber Committee encourage member governments to implement policies and cooperative projects to promote comprehensive recycling systems for paper and wood fibre and wood-based energy systems. In designing and implementing these systems, the potential effects on timber markets and forest management must be carefully considered.

32. The workshop report was the responsibility of Messrs. Birler, Frühwald, Hillring, Ince and Pepke.

33. The proceedings were to be edited by the USDA Forest Products Lab in conjunction with Dr. Hillring and printed and distributed by the General Directorate of Forests, Turkey.

34. A study tour was held on 6 November: to learn about paper and paperboard recovery and processing by Dönkasan in Istanbul; to see production of paper and paperboard from recycled fibre at Kartosan in Izmit; and to watch production of MDF and wood-based co-generation at Yongapan Plant (Integrated Wood Industry Inc.), Gebze, Izmit.

35. The workshop concluded positively with mutual thanks from organizers and participants."