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Expert Group Meeting on the  
Wood and Wood Products Industry  
Vienna, Austria, 4-7 December 1989

REPORT\*

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\* This document has not been edited.

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### Consultation on the Wood and Wood Products Industry

1. The Industrial Development Board, at its Fourth Session in October 1988, recommended to include the Second Consultation on the Wood and Wood Products Industry in the programme of Consultation meetings for the biennium 1990-1991.
2. In accordance with the above-mentioned decision and the established work programme, the Consultation on the Wood and Wood Products Industry will be convened in 1990. In order to identify the priority issues to be submitted for consideration at the Consultation, the UNIDO Secretariat has convened an Expert Group Meeting in preparation for the Second Consultation.
3. The Expert Group Meeting was held in Vienna from 4 to 7 December 1989.
4. The objectives of the meeting were:
  - a) Discuss the present situation of the wood and wood products industry with emphasis on secondary wood processing industry;
  - b) Identify common and specific constraints which hamper the development of this industry in developing countries such as raw material supply, technology, marketing, technical and managerial skills.
  - c) Examine and propose ways and means for international co-operation and action needed to overcome identified constraints;
  - d) Select specific issues for further elaboration to be discussed at the Consultation Meeting.

#### I. ORGANIZATION OF THE MEETING

5. The Meeting was convened at Vienna from 4 to 7 December 1989 as part of the preparations for the Second Consultation on the Wood and Wood Products Industry. It was attended by high level experts and representatives from international and United Nations Organizations (see Annex I).

#### Opening of the Meeting

6. The meeting was opened by the Chief of the Light Industries Unit, System of Consultations Division of UNIDO, who explained the origin and scope of the System of Consultations. He indicated that the purpose of the meeting was to advise UNIDO on the identification of priority issues to be further analysed, discussed and studied before the Second Consultation. He stressed that concrete ways and means to promote secondary processing and to solve constraints which hinder its development were to be sought to translate into action-oriented programmes the results of the meeting's discussions.

### Election of officers

7. Mr. Dato' Baharuddin Haji Ghazali (Malaysia) and Mr. Geoffrey Pleydell (United Kingdom) were elected Chairman and Rapporteur respectively.

### Adoption of the Agenda

8. The following agenda was adopted:

1. Opening of the meeting
2. Organization of the meeting
3. Overview of UNIDO's activities in the field of wood and wood products industry
4. Problems and prospects of secondary wood processing industry in developing countries. Case studies presentation by experts and general discussion
5. Main issues for further elaboration and proposals for future action
6. Consideration and adoption of the draft report and recommendations of the meeting
7. Closure of the Meeting

### Documentation

9. The documents issued for the Meeting are listed in Annex II.

### Adoption of the report

10. The report was adopted by the Meeting.

## II. SUMMARY OF DISCUSSIONS

### Overview of UNIDO's activities in the field of wood and wood products industry

11. A representative of the System of Consultations informed the participants of the follow-up activities to the First Consultation on the Wood and Wood Products Industry. Among others, the preparation of a Manual on Technology Transfer Negotiations was mentioned which, when ready in 1990, will respond to the need expressed by developing countries at the First Consultation of being provided with contractual checklists for long term cooperation agreements in fields such as joint ventures, transfer of technology and licencing.

12. Another activity carried out by UNIDO, in cooperation with the International Union of Forest Research Organisations (IUFRO), is aiming at fostering co-operation agreements between research and development institutes in developed and developing countries. This activity consists of questionnaires being circulated to IUFRO members to ascertain their readiness to cooperate with similar institutions in areas such as exchange of information, provision of training and joint research work.

13. A main follow up study requested by the First Consultation is addressing the issue of maritime transport of wood and wood products and the influence of transport costs on the final cost of wood products.

14. A UNIDO consultant elaborated on the content of the study illustrating the three main trade routes for tropical hardwood, namely, South East Asia to Northern Asia, South East Asia to Europe, West Africa to Europe. He stressed the influence of the inland delivery system in affecting the overall transport costs and consequently the overall trade. Finally, the consultant underlined the impact of the environmental aspect on logging and wood production, impact which so far has not been taken in full consideration in analysing trade routes and maritime transportation of wood.

15. In informing the participants of the preparatory activities being carried out by the System of Consultation in view of the Second Consultation, the Secretariat mentioned the study being prepared by the U.N. Centre of Human Settlements, Habitat on the promotion and utilisation of secondary species in housing and construction. The three regional studies aimed at analysing problems and prospects of wood and wood products industry in Asia, Latin America and Africa were also mentioned and a UNIDO consultant was requested to outline the main conclusions derived from the study covering the Africa region.

16. The consultant stressed that the situation of the wood industry sector in Africa has, statistically, changed little in the past seven/ten years except for those countries, like Cote d'Ivoire, that have strongly reduced log exports. Notably, secondary processing has not progressed and assistance is needed to revive this particular sector.

17. Problems such as non effective promotion of lesser known species, waste utilisation, lack of training, non availability of statistics were mentioned as affecting African countries and requiring urgent solutions. Statistical information on consumption of secondary wood products within the producing countries are especially needed.

18. A representative of the Department of Industrial Operations made a comprehensive presentation of UNIDO technical assistance programmes and projects giving detailed information on type of assistance provided and its objectives. Among other objectives he mentioned the more rational use of resources, the reduction of waste, the development of appropriate technology, the creation of employment and the improvement of living standards. Projects aimed at increasing the use of wood residues, providing assistance to existing mills in particular production line planning and promoting timber in construction were illustrated in depth.

19. The issues of freight costs, the role of conference shipping groups, the importance of volume in setting lower freight rates as well as the need to alert governments of developing countries towards transport related issues, were raised by participants in relation to the study on the maritime transport of wood and wood products.

20. On the question of forest management one participant said that the price of timber should be increased to make the resource more valuable. In fact the

price of wood reflects so far the cost of harvesting, not that of replacing it. On the other hand other participants stressed that too high prices of tropical timber would increase the use of substitutes and could lead to timber export decrease from producing countries.

21. A typology study leading to a development strategy framework for the wood industry sector was presented to the participants. The aim of the study is to produce a framework for classifying developing countries with respect to their level and type of wood-based industries so that integrated technical assistance programmes can be developed that will be applicable to each group with relatively common factors.

22. One main feature became apparent during the presentation of the study, namely, the non availability, in the majority of developing countries, of reliable data/statistics and information on the secondary wood processing industry. This constitutes a hindering factor not only in the collection of data but also in the development of this specific industry which, not having the support of an autonomous infrastructure, rather depends from the forestry sector infrastructure.

23. In commenting on the study some participants stressed that while the development of the primary wood sector is driven by the available supply, the development of the secondary wood sector is rather driven by the demand. Therefore factors like markets, customer preferences and competition should be added in the study. Other participants recommended the inclusion of qualitative judgements for those factors relating to secondary wood processing which cannot, because of their abstract nature, be quantified, - such as the industrial environment, management skills or the level of technology.

24. Agreement among the participants was expressed on the importance of population and its urbanisation rate in giving an indication of the potential demand of the local market. A reduced number of additional indexes such as raw material availability, level of sophistication of domestic market and its size, human resources, seen as driving force independent from available resources - were suggested as essential to re-focus, complement and expand the study. Within the same framework it was suggested the inclusion of some additional countries to demonstrate other scenarios in domestic markets and raw material availability.

25. In introducing the subject of raw material availability Mr. Baranek stressed the efforts of his country, Brazil, in the area of reforestation during the years 1967 - 1987 when fiscal incentives made possible an increase in the plantation areas up to more than six million hectares. Besides the utilization of plantation species another area offering an untapped potential of raw material is waste utilization, both from the tree and from processing. It is accepted that while sophisticated equipment and trained personnel to develop waste utilization are often outside the financial means of many developing countries, research work should be promoted locally with the support of international organizations.

26. On the subject of secondary wood processing industry as a source of employment Mr. Lyons stressed the important role played in some Asian countries by Government policies and investment programmes, domestic as well

as foreign. The consequent increase in exports of finished and semi-finished products contribute to earning of foreign currency, improvement in the standard of living and creation of employment.

27. On the question of technology Mr. Wehiong raised a number of issues. These included: how to develop local technological capacity in developing countries, the problem of absorption of technology by small-scale industry and the need to adapt technology to their economic size, the choice of advanced technology when aiming at a particularly sophisticated market, labour intensive technologies vis-a-vis high technology, the selection of the level of technology to be applied, the industrial infrastructure needed to facilitate the introduction of technologies in developing countries.

28. A participant drew attention to the informal sector and its, perhaps not noticeable but important, contribution to the wood sector. It can, if quality is acceptable, be a possible supplier of components for export products or producer of import substitution products. Its activities in furniture manufacturing for example, sometimes cover up to 50 per cent of local market demand. A definition of the "informal" sector is perhaps that which falls outside the recorded economic activity of a country.

29. The need to support and upgrade the informal sector as well as to organize it through extension services, establishment of co-operatives, provision of credit lines for raw material supply or marketing activities was stressed by several participants. Trade associations were mentioned as playing a catalytic role in supporting small-scale industries in their efforts to approach export markets. But overall it was agreed that there are considerable difficulties in expecting simple, craft-level carpentry, to make direct contribution to exports.

30. Subcontracting is a possible answer to the needs of smaller wood manufacturing units while vertical integration can be encouraged as a means to optimize production most suited for larger plants.

31. Research and development activities in the wood sector aim among others at solving the problems related to wood preservation in their environment and safety acceptability. Natural chemicals, preservative disposal and environmental impact were among the issues covered by Mr. Rajkovic's presentation. One participant felt that not enough has been done so far to enforce standards of preservation, to design durable, or develop designs for, timber structures, to encourage plantation of durable species and to promote more research in the field of natural preservatives.

32. Furniture manufacturing was covered by two presentations respectively - Mr. M.M. Maharaullee and Mr. D.Baharuddin.

33. The challenge to pass from the craft stage to the industrial stage was illustrated by Mr. Maharaullee who stressed the difficulty to be met of trying to turn a craft activity into industrial production. Multi skills are required to enable the entrepreneur to solve problems related to source of raw material, financing, marketing, purchase of equipment, factory planning and



cost control. However, Government support, receptive industrial environment and availability of skilled labour constitute the external favourable factors to enable the development of entrepreneurship.

34. The presentation of Mr. Baharuddin dealt with progress made by countries in South East Asia in recent years.

35. Factors such as investment, promotional assistance and modern technology are behind secondary wood processing growth in the region as well as targeted Government measures aimed at decreasing tax and interest rates.

36. Boards of investment and trade development, chambers of industries and other similar institutions play a major role in actually supporting the development of downstream wood-based industries in timber producing Asian countries. No doubt that some problems still remain to be overcome but the general climate is one of support and encouragement.

37. Some participants explored the possibility for small entrepreneurs to closely collaborate with each other or to enter into subcontracting arrangements with larger companies. The question of technology was raised again in this context and the alternatives of choice among basic, intermediate or advance technology mentioned by several participants.

38. Joint ventures were indicated as a way to transfer technology and providing related training. Entrepreneurial development of a quality which would attract foreign capital also constitutes a starting point for development. There are, however, factors outside the specific area of secondary wood processing such as the socio-economic state of the country, which can be critical in decisions about investment and business development.

39. The presentation by Mr. Lomax on the subject of training outlined three main categories of timber industries, namely the first aimed at the provision of domestic fuel, the second aimed at primary processing, the third aimed at converting timber in finished or semi-finished goods. Another classification made, in terms of training, related to capital, labour and skill intensive type of industries.

40. Skills and characteristics needed for each of the above industry categories were illustrated in depth showing that the issue of training for its non-homogenous nature must be approached with appropriate strategies taking into consideration different circumstances and variables. Training should take into consideration the needs of employers.

41. In this connection the representative of ILO mentioned the example of some industrialized countries where industry pays to the Government training fees and advises in the formulation of training programmes so as to update them continuously on technological changes. In this respect all participants agreed on the need to closely involve industry in the formulation of training programmes since content, location, length, level of technological sophistication have to be adjusted to the particular needs of the recipient companies.

42. On the question of trade of wood and wood products Mr. Pleydell remarked that the flow of tropical timber products remains essentially a movement of raw materials, showing that in spite of the fact that further processing of wood before export would attract higher revenues, several producing countries have not yet re-oriented their policies towards added value production.

43. Sawn wood, panels, veneers and plywood constitute the basic range of products exported after logs while more complex products such as furniture, flooring, window frames, doors and prefabricated building components, requiring more complex production, assembling and packaging lines as well as high market specifications, still represent a non significant figure in the world trade of wood.

44. The importance of local markets, their existence and size as factors to be considered in any strategy aimed at developing export, was stressed by some participants. Other participants elaborated on the different policies and measures adopted by some producing countries aimed at fostering secondary wood processing for employment generation purposes through the issuing of embargos and the diversion of sawn timber from export to local secondary production.

45. Parallel to new production techniques new marketing techniques have to be applied if export of secondary wood products is to be promoted. Besides statistics, guidance and information have to be provided to developing countries as well as country profiles of potential markets and specific products market reviews.

46. The utilization and marketing of plantation species of tropical soft wood as substitutes to tropical timber, particularly in secondary processing were discussed at length by the participants who agreed on the need for further studies on the issue.

47. Finally, the discussion focussed on the Tropical Forestry Action Plan (TFAP) in which, the participants felt, UNIDO involvement has been, so far, too indirect and limited. UNIDO should be more closely associated in the Plan so as to ensure more attention being given to issues such as industry and marketing.

### III. CONCLUSIONS, RECOMMENDATIONS AND MAIN ISSUES

48. The Expert Group Meeting on Wood and Wood Products Industry held at Vienna from 4 to 7 December 1989 in preparation of the Second Consultation on the Wood and Wood Products Industry fully recognized the importance of secondary wood processing industry for the economic and social development of developing countries in obtaining value added products from their natural resources.

49. As a result of the discussions, the following conclusions were agreed upon by the participants:

-Secondary wood processing industry is a valuable tool in the rational utilization of forest resources and in increasing returns on investment.

-The role of governments is important in creating the appropriate climate for the development of the secondary wood processing industry, through resource management and protection, fiscal policies aimed at orienting production towards domestic use or export markets, support measures to stimulate the sector such as decrease of interest rates, export refinancing and other strategies leading to employment generation.

-National organizations, such as investment and trade development boards and chambers of industry, helping manufacturers through the granting of special assistance and investment permits, encouragement of overseas promotional activities and the establishment of training, research or advisory centres, constitute the appropriate institutional infrastructure for the development of the sector.

-Research and development, information, training and other centres for the strengthening and fostering of the secondary wood processing industry should be seen as autonomous institutions specialized in the sector and not as part of forest institutions. Besides, being information on the status of secondary wood processing industry and relevant sectoral statistics not or only partially available for most developing countries, surveys should be carried out as an essential means for the design and implementation of appropriate development programmes.

-The availability of raw material through conservation, reforestation and afforestation programmes can be increased by better utilizing forest and industry residues for downstream processing. Within the same context, research needs for development and improvements in conversion processes to obtain value added products should be met. Wood preservation as a means to avoid degradation and therefore extend wood service life deserves more investigation and research work. Careful consideration should be given however to its impact on the environment.

-Specific economic approaches have proven to be in several cases effective means to foster the industrial development of the secondary wood processing and therefore are worth being further analyzed for possible wider application. Among others, joint ventures, vertical integration, subcontracting might offer viable solutions to problems such as lack of capital, technology, training and markets. However, without financial support provided by national and international institutions, such as easier access to credit, reduction of duties and taxes, investment programmes and creation of investment opportunities, the secondary wood processing sector will not be able to develop at the right pace.

50. The potential of the informal sector should be recognized as producer of secondary wood products for the local market, supplier of components for the export market and potential contributor to import substitution. Support measures aimed at increasing its specialization would contribute to its development.

51. The development of local technology was recognized to be the most suitable answer to the problems related to transfer of technology. In view of the high cost involved, it is however important to bear in mind in the selection of the technological level of a given industry all the range of technologies from

basic to intermediate to advanced and highly sophisticated and their suitability to meet quality and market objectives as well as to achieve economies of scale.

-The importance of manpower in all stages of production and marketing of the secondary wood processing sector was fully recognized. In this context Governments should consider policies aimed at creating suitable industrial environment for the introduction and absorption of technology, developing national consultancy capabilities and encouraging entrepreneurship as one of the main factors for attracting investment.

-It was generally agreed that the commercial viability of secondary wood processing industry depends on the presence of a network capable of providing quality control standards, related equipment, spare parts, transportation, storage facilities and services.

52. Without appropriate market studies covering potential importing countries and markets for specific products, developing countries risk missing export opportunities and not meeting set export targets.

53. Market intelligence and market research analysing and forecasting customer requirements for planning of production are basic tools when approaching export markets. The importance and potential of domestic markets has however not to be undervalued for they can develop quickly and absorb large share of production.

54. New markets and market niches for plantation species need to be identified and promoted as additional opportunities for wood products export.

55. Finally the participants agreed that the typology study on the wood sector expanded as per Annex III could constitute a basic strategic tool providing evaluation methods to assist developing countries in the development of the secondary wood processing industry. A standardized appraisal system providing checklists for different types of commercially viable operations as well as country-by-country assessments on the status of secondary wood processing industry and the business climate need however to be further developed and expanded for their practical utilization.

#### IV. RECOMMENDATIONS

56. At the meeting the following recommendations were agreed upon by the participants:

- UNIDO, in co-operation with international and national research organizations, should assess the status of forest and industrial residues utilization and available technologies to obtain value added benefits;

- Relevant institutions should continue efforts for substitution of chemical preservatives with more environmental accepted products, and alternatively, for developing new structural designs as well as promoting the use of natural durable species so as to minimize the negative environmental impact of chemical preservatives;
- Assistance in drafting, adopting and applying mandatory regulations on handling and use of wood preservatives should be provided;
- Assistance programmes for the upgrading of the informal sector as a route to incorporate it in the main economy of the sector should be developed;
- UNIDO should work more closely with the private sector and provide information on business opportunities through such mechanisms as data banks, joint venture opportunities, etc.
- The development of local technologies should be encouraged through technological and educational industrial centres with the involvement of the industrial community. These centres should be seen as autonomous institutions specialized in the secondary wood processing and not as part of forest institutions. In the field of transfer of technology, co-operation with UNCTAD and other international organizations can be sought;
- Government educational policies should be aimed at the improvement of technical and management skills at all levels and in all fields of specialization and at the encouragement of local entrepreneurship;
- With the assistance of the ILO, measures should be taken to identify training and manpower development needs of developing countries in secondary wood processing industry so that appropriate training strategies may be designed and implemented, emphasizing the need of training within industry;
- With the assistance of ITC and other relevant organizations studies to identify market opportunities and market needs should be carried out;
- Potential-end users for secondary products from plantation and lesser known species should be identified;
- Efforts should be made to demonstrate the permanence and adequacy of raw material resources and to encourage recognition of the place of timber as a renewable and environmentally friendly material;
- At the international level, UN and intergovernmental organizations should focus more their activities and programmes towards the development of the secondary wood processing industry. In this respect the meeting agreed that though the Tropical Forest Action Plan (TFAP) include industry and marketing, not enough attention is being given to these important activities. Greater use of UNIDO expertise would be desirable.

## V. MAJOR ISSUES PROPOSED

57. On the basis of the above conclusions and recommendations, the meeting recommended that the following possible issues be considered at the Global Preparatory Meeting:

### 1. Critical components for the development of secondary wood processing industry

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- Government strategies and policies
- Raw material availability
- Technology
- Manpower
- Small-scale enterprises
- Trade and markets
- Finance

### 2. International co-operation

- Regional co-operation, exchange of information, creation of regional markets, regional training/research centres
- South-South co-operation, especially in fostering market outlets, transfer of technology, human resources development
- International co-operation with regard to financing, technology and market through such instruments as joint ventures, trade arrangements, venture capital funds, research and development centres and training institutions, promotional services.

Annex I

LIST OF PARTICIPANTS

Brazil

Jose A. Baranek, Vice-President, Director Foreign Affairs,, Asociacao Brasileira Produtores de Madeiras, Rua Col. Savier de Toledo 220, 11o andar Ap. 01048, Sao Paulo

Cameroon

Makon Wehiong, Directeur général, Centre national de développement des forêts, P.O. Box 369, Yaoundé

Czechoslovakia

Eduard Rajkovic, State Forest Products Research Institute, 89129 Bratislava, Lamacska 1

Malaysia

Dato' Baharuddin Haji Ghazali, Director General, The Malaysian Timber Industry Board, 5th Floor, Bangunan Sateras, P.O. Box 10887, Jalan Ampang, 50728 Kuala Lumpur

Samad Bin Kassim, Commercial Counsellor, Permanent Mission of Malaysia to UNIDO, Vienna

Michael J. Lyons, Managing Editor, Asia Pacific Forest Industries, Safan Publishing SDN BHD, Suite 2403, 24th Floor Plaza See Hoy Chan, Jalan Raja Chulan, 50200 Kuala Lumpur

Mauritius

Mohammad M. Maharaullee, Director, The Furniture People, Eau Coulée, Curepipe Road

United Kingdom

Peter J. Lomax, 10 Summingdale Road, Chelmsford, Essex

Geoffrey Pleydell, Market Development and Information Services - Forest Industries, Cotter Cottage, Bug Hill, Woldingham, Surrey, CR3 7LB

United Nations, Non-United Nations Organizations

Centre for Human Settlements (UNCHS/HABITAT)

Mario Piche, Chief, Building and Infrastructure Technology Section,  
Research and Development Division, P.O. Box 30030, Nairobi

International Labour Organization (ILO)

Bernt Strehlke, Forestry and Wood Industries Specialist, Forestry and Wood  
Industries Committee, Industrial Sectors Branch, 1211 Geneva

International Tropical Timber Organization (ITTO)

Manoel Sobral Filho, Assistant-Director for Forest Industries, Sangyo  
Boeki Center Bldg. 8th Floor, Yokohama 231, Japan

International Union of Forestry Research Organizations (IUFRO)

Heinrich Schmutzenhofer, Schönbrunn, A-1131 Vienna

United Nations Conference on Trade and Development (UNCTAD)

G. Dedeystère, Chief, Shipping Section, Palais des Nations, CH-1211  
Geneva 10

UNIDO Consultants

Alastair Fraser, 10 Woodhall Millbrae, Edinburgh EH14 5BJ Scotland

Gordon E. Gresham, 9 Westmoreland Avenue, Bridlington YO15 2QG, East  
Yorks, England

Brian B. Tate, 48 Ogilvie Place, Kooralby, Queensland 4285, Australia

UNIDO Secretariat

Antonio Sabater de Sabatés, Chief, Light Industries Sector, System of  
Consultations Division

Alexei Goldabekov, Industrial Development Officer, Light Industries  
Sector, System of Consultations Division



**Ida di Pietro, Industrial Development Officer, Light Industries Sector,  
System of Consultations Division**

**Antoine V. Bassili, Industrial Management and Rehabilitation Branch,  
Industrial Institutions and Services Division**

**Robert Hallett, Industrial Management and Rehabilitation Branch,  
Industrial Institutions and Services Division**

Annex II

LIST OF DOCUMENTS

- The Development of Secondary Wood Processing Industry** IPCT.94 (SPEC.)
- Raw material availability. Potential for increased conversion efficiency, waste utilization, vertical integration by Jose A. Baranek**
- Furniture Manufacturing in South East Asia by Dato' Baharuddin Haji Ghazali**
- Human resources development - Institution and Curricula, in-service possibilities, external programmes by Peter Lomax**
- Log export embargoes in the Southeast Asian Region. Influence on processing degree, foreign investment, trade**
- Furniture: From handicraft to industry by Makon M. Maharaullee**
- Major Flows of Trade by Geoffrey Pleydell**
- Wood Preservation by E. Rajkovic**
- Technology inputs to wood industry by Makon Wehiong**

Annex III

**TYPOLOGICAL STUDY - WORKING GROUP**

The Group discussed the paper and the general objectives of the study and made the following recommendations:

1. The typological study should be further developed to:
  - a) Provide a structural methodology for characterizing the forest and wood industry sector in a country, (a whole country, part of a country or a group of countries) as a means of improving the direction of technical assistance.
  - b) Create a data base on the state of the wood industry (principally the secondary industry) and the factors contributing to its performance, to be used through a "decision tree" or "expert system" to recommend a development strategy.
2. That the study should focus on investigating the elements which make up the following broad categories, and finding quantitative or qualitative means of specifying them:
  - a) The reserve:
    - forest resource
    - primary industry
    - import potential
  - b) The market:
    - domestic market - size, purchasing power
    - export market - accessibility, size
  - c) The commercial environment:
    - finance
    - communications
    - structure
    - dynamism
  - d) The investment environment:
    - political environment
    - fiscal/financial incentives
    - stability
  - e) Human resources:
    - availability of entrepreneurs
    - availability of skills
    - training facilities.
3. That UNIDO should seek funds and resources to further develop the methodology considering the above, and present it for discussion at the Global Preparatory Meeting, with a view to strengthening UNIDO's role in the TFAP programme and country master plans to ensure that the wood industry is given appropriate consideration in planning forest and wood industry sectoral development.
4. Means of collecting data should be investigated so that classification and analysis procedures can be made effective for endorsement by the Second Consultation on Wood Industries.

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REPORT

Corrigendum

Page 5, paragraph 18

Line 5: after technology, insert manpower development,  
Line 8: after production delete line

Page 8, paragraph 41, line 2

For industrialized read developing

Page 14, entry for Czechoslovakia

The address should read Lamacska 1, 89129 Bratislava

Page 16

Line 3: after the name insert Senior Industrial Development Officer,  
Line 5: after the name insert Industrial Development Officer,

Page 17

Fifth entry: after trade insert by Michael J. Lyons  
Sixth entry: the name should read Mohammad M. Maharaullee  
Seventh entry: the name should read Geoffrey Pleydell