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Global Preparatory Meeting for the
Second Consultation on the Wood
and Wood Products Industry*

Nairobi, Kenya, 24-27 April 1990

REPORT**

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* Organized by UNIDO in co-operation with the United Nations Centre for Human Settlements (Habitat).

** This document has not been edited.

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PREFACE

The System of Consultations is an instrument through which UNIDO serves as a forum for developed and developing countries in their contacts and consultations directed towards the industrialization of developing countries. Consultations permit negotiations among interested parties at their request, at the same time as or after the meetings. Participants of each member country include representatives of governments, industry, labour, consumer groups and others, as deemed appropriate by each government.

Benefits emerging from this activity include the identification of obstacles to industrial development in developing countries, monitoring trends in world industry in order to identify action-oriented measures for increasing the share of developing countries in world production; determination of new forms of international industrial co-operation in North-South and South-South relations.

Second Consultation on the Wood and Wood Products Industry

In accordance with the decision of the Industrial Development Board in October 1988 and the programme of work adopted, the Second Consultation on the Wood and Wood Products Industry will be convened during the 1990-1991 biennium. The Executive Director of UNCHS (Habitat) and the Director-General of UNIDO have agreed that the two organizations will collaborate in the preparations for the Second Consultation. The UNIDO Secretariat convened this Global Preparatory Meeting in order to identify priority issues to be submitted for consideration at the Second Consultation .

Preparatory activities carried out by UNIDO

In preparation for the Consultation and prior to the Global Preparatory Meeting, UNIDO carried out studies analysing the problems and constraints of the wood and wood products industry in Africa and Asia and organized two expert group meetings, in Guarujà, Brazil, for Latin America and in Vienna, Austria.

I. ORGANIZATION OF THE MEETING

1. The Global Preparatory Meeting for the Second Consultation on the Wood and Wood Products Industry was held in Nairobi, Kenya, from 24 to 27 April 1990, in co-operation with the United Nations Centre for Human Settlements (Habitat). The meeting was attended by 23 participants from 12 countries, and 7 international and other organizations. (See Annex I for List of Participants.)

Opening of the Meeting

2. The meeting was opened by the Director of the Office of Programme Co-ordination of the UNCHS (Habitat) who stressed the importance of timber in construction, especially in promoting the use of locally available building materials as one of the priorities of the Global Shelter Strategy to the Year 2000. He also pointed out that most developing countries still have a sizeable stock of secondary timber species which, if properly managed and used, could serve as an important renewable source of low-cost building materials. The meeting was then addressed by the Director of the System of Consultations Division of UNIDO, who welcomed the participants and explained the origin and scope of the System of Consultations. He indicated that developing countries had a potential comparative advantage in secondary processing of wood and wood products, as shown by some traditional log-exporting countries which, in recent years, have started to implement policies aimed at increasing their value added and have made remarkable progress in domestic processing of wood. He also stressed that the Consultation, taking place at a time when the international community was particularly concerned with environmental issues, should through its recommendations, aim at balancing divergent interests and consequently at fostering a positive interaction of policy makers, environmentalists, entrepreneurs and technologists.

Adoption of the Agenda

3. The following Agenda was adopted:

1) Opening of the meeting
2) Adoption of the agenda
3) Election of officers
4) Presentation of a UNCHS paper on the promotion of secondary species
5) Presentation of a UNIDO paper based on the conclusions reached by the preparatory studies and at the expert group meetings, on the situation of the secondary wood processing industry in the regions
6) Discussion of topics related to the development of the secondary wood processing industry
7) Selection of issues to be considered at the Second Consultation
8) Consideration and adoption of the report of the meeting.

Election of officers

4. Mr. Amantino Ramos de Freitas (Brazil) and Mr. Christopher Muraya Myamu (Kenya) were elected Chairman and Vice-Chairman respectively. Mr. Lew Wing Hing (Malaysia) was elected Rapporteur.

Documentation

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

Adoption of the report

6. The report was adopted by the Meeting at its morning session on 27 April.

II. SUMMARY OF DISCUSSIONS

7. After the presentation of the UNCHS and UNIDO papers, the subject of secondary or currently commercially less accepted species was brought up by several participants. The definition "commercially less accepted species" (CLAS) was modified by the participants to "currently commercially less accepted species" so as to underline the potential of those species to become commercially acceptable within a relatively short time, provided that adequate research work was carried out.

8. In that respect participants stressed that information on technical properties of CLAS was available in many research institutions but not disseminated to the end users. Architects and structural engineers usually specified according to their knowledge and therefore tended to use a limited number of well-known species.

9. Before encouraging the utilization of new species, however, it was pointed out that market requirements at local, subregional, regional and international level should be well-known as should the technical viability of those species so as to attract investors and make them competitive vis-a-vis other building materials. Joint-ventures between enterprises of developed and developing countries in that area have proven to be successful and could be further promoted.

10. The representative of UNCHS stressed that particularly in Africa where more than 30% of building materials was imported, the shelter sector represented a large captive market in which CLAS and plantation timber could be used.

11. However, the participants agreed that although the subject of CLAS

utilization had been discussed for many years, no real progress had been achieved in R & D for stress grading or for assessing other structural characteristics.

12. In that connection a proof grader for timber strength developed in Australia and also used for field testing was mentioned as an example of equipment at affordable prices which could foster the utilization of CLAS for structural use.

13. With respect to the use of timber in construction, the representative of FAO pointed out that a number of serious constraints had to be borne in mind when discussing the particular sub-sector of secondary wood processing, namely, building codes, which, in developed and developing countries were not conducive to the use of timber, higher premia charged by insurance companies for wooden houses, credit facilities not easily given for building in wood, architects' attitudes towards wood, and finally concern of environmental groups for dwindling forest resources.

14. Successful examples of utilization of certain species such as coconut wood in the Philippines and rubber wood in Malaysia, were mentioned as well as the need to promote them further through demonstration projects for the potential manufacturers and end users. The problem, however, related to the thousands of CLAS cannot be solved in the same way. In fact technical and financial viability had to be assessed and a mechanism set up to demonstrate, through comparative cost analysis, the economic benefits which could be derived from the utilization of CLAS.

Raw material availability

15. One important aspect in the availability of timber for the secondary wood-processing industry was related to the possibility for timber-deficit countries to establish regional/sub-regional co-operation projects with timber-surplus countries. In that respect producers as well as consumer associations would play a role in analysing market problems and streamlining the commercial terms of such co-operation.

16. The participants agreed that forest policies aimed at encouraging logging of more CLAS and at channelling them to the local wood-processing industries could be conducive to their successful promotion. Those policies, however, had to be harmonized with financing policies, often non-existent, and market intelligence.

17. The suitability of CLAS for furniture manufacturing, combining one of more species, was also mentioned for furniture where good performance was needed and where the wood could be easily painted.

18. Another important factor in every policy aimed at encouraging secondary processing was the linkage with the primary processing industry through backward or forward integration from and to sawmills. The participants stressed that despite their dissimilarity, particularly evident in the different skills needed, little migration was to be observed from primary to secondary processing industry. Complementarity rather than integration through joint ventures encouraged by government incentives could lead to reduced costs of production and increased productivity.

19. On the subject of plantation species, a participant mentioned that in his country's 25 year forestry programme industrial tree plantations were included as well as second-growth forests. Plantation species had several advantages and for their sustainability could help relieve pressure on primary forests. To obtain better quality of plantation, however, more research was needed as well as accurate classification. Plantation of both exotic species and of natural forests was one way to counteract deforestation and the greenhouse effect.

Manpower development

20. Some participants underlined that in developing countries vocational schools often had unutilized facilities which could be used for training in secondary wood processing. It was stressed, however, that the curricula had to be developed and a number of industry-oriented trainers prepared for training in the secondary wood processing industry. In that context attention was drawn to the ASEAN Timber Technology Centre and its activities as an example of a regional centre offering, among others, industry-oriented training.

21. The representative of UNCHS pointed out that, as far as utilization of wood in housing and construction was concerned, universities were generally more conversant with other building materials and there was therefore a need to re-organize university curricula. There was consensus on the importance of "wood culture" and on the necessity of its further promotion.

22. Several delegates pointed out the importance of assessing the type of training which was needed so as to tailor specific programmes to actual needs. In that respect the AITC crash programme approach for supervisors aimed at obtaining a multiplier effect, the training at the mill for small-scale industrialists as well as the production of simplified training material (videos, manuals, films, audio-visual aids) were mentioned.

Equipment and technology

23. On the subject of machinery, the participants agreed that the gap

between developed and developing countries had increased due to the fact that the rise in the level of complexity of machinery had also increased the level of trained manpower needed.

24. Maintenance, spare parts availability and re-tooling should be given careful consideration. Guarantees are not a solution but rather local production of spare parts would be the most appropriate measure leading from spare parts production to woodworking equipment manufacture.

25. Model contracts as well as checklists with the main requirements and terms of negotiation for the acquisition of machinery such as the UNIDO publication "Technical Criteria for the Selection of Woodworking Machinery" should be broadly publicized or, if necessary, prepared.

26. Several participants pointed out that equipment for processing plantation timber or CLAS could be different if intended for smaller diameter trees or softwood. Often, however, equipment only required slight adaptation without extra-investment. Within co-operation programmes among R & D institutions appropriate equipment for developing countries could be designed in developed countries.

27. Regarding technology one participant mentioned that technology used for rattan furniture, quite advanced in his country, could not be applied in another country of the same region where the raw material, the machines and the manpower levels were different.

28. In connection with technology sources, the participants agreed that entrepreneurs should be involved in negotiations from the initial stage in order to orient technology acquisition towards their needs. It was therefore suggested that a co-ordinating body should be created involving all partners such as government, industry and R & D., whereby the linkages between R & D and industry would be strengthened.

29. It was pointed out that another effective means to adopt and modify technology to local conditions in developing countries would be the establishment of domestic consulting engineering services as an alternative to the use of international consultants or as sub-contractors.

Government strategies and policies

30. One participant mentioned that in his region some governments had set up furniture villages where, to obtain economy of scale, joint services were provided to furniture industries.

31. Some participants stressed that interaction between industry and

government could also be fostered by creation of associations, industry involvement in the formulation of National Plans and sectoral Master Plans as well as by relevant government conferences aimed at stimulating private sector investment.

32. There was consensus that government policies ranging from fiscal policies for the establishment of new industries, monetary policies regulating the availability of hard currency for the purchase of machinery from abroad, trade policies imposing import restrictions and, therefore, hindering production, to resource management policies aimed at conserving the forests or reserving them for tourism and recreation are vital for the development of wood processing sector. If coherently formulated in an industrial plan providing focus to the development of value added industries, they could boost domestic processing for export markets even above the set targets.

Institutional infrastructure

33. Participants agreed upon the definition of institutional infrastructure as indicating the support to industry of national institutions such as R & D, trade associations, sectoral chambers, standard bodies.

34. In this respect, one participant mentioned three examples of support areas, namely, (a) provision of product design for domestic and international markets, (b) formulation, adaptation, application of product standards as well as of specifications for raw materials, and (c) establishment of bonded warehouses, mainly for small manufacturers.

35. The representative of IUFRO mentioned, within the same framework, the establishment of co-operatives for cottage industries which could increase their potential for production intended for the local market. All participants agreed on the importance of promoting the participation of manufacturers to international trade shows and fairs, as well as of common service facilities and industrial estates to support SME.

Small and medium enterprises

36. Participants agreed that only a relatively small percentage of existing small and medium enterprises had the characteristics which allowed them to grow. One of the best means to facilitate migration from small to large size was the undertaking of subcontracting for a large company. In that respect the question was to what extent the secondary wood processing subsector was suitable for entrepreneurship in terms of technology to be absorbed, financing, managerial and organizational capabilities.

37. One participant stressed that governmental support in the form of

creating an environment conducive to investment was a basic requirement to promote SME's as was a reliable supply of raw material, know-how and markets.

38. Other participants pointed out that in many developing countries, SME's belonged to local entrepreneurs who worked at artisanal level and utilized residues of primary industry while larger enterprises manufacturing products for export belonged to expatriates who had commercial links to export markets. SME's compared, therefore, unfavourably with larger ventures and were at a disadvantage since they did not enjoy economy of scale. In many countries, however, the government had a social obligation and the development of SME's was of political importance. In some cases agencies addressing the problems of SME's were created with the purpose of supporting their development. Furniture parks, subcontracting arrangements, co-operatives of production and marketing, as stressed by the representative of IFBW, were other effective means worth mentioning of the positive results obtained so far.

Transportation and marketing

39. In discussing shipping and transport problems related to the secondary wood processing industry, it was noted that multimodal transport involving only one bill of loading and being a combined door-to-door operation represented today the most modern and effective way of transportation. The size of containers could, however, create a problem.

40. Other problems related to high costs of inland transportation also due to bad road conditions and lack of managerial skills, proper packaging for furniture ensuring receipt of products in perfect condition, operation of railways, harbour and storage facilities were also discussed.

41. The representative of UNCTAD outlined some of his organization's programmes in areas related to shipping and informed the participants of some activities undertaken such as the re-organization of railways in Africa and the promotion of multimodal operation companies in developing countries.

42. In relation to trade, the growth of secondary wood products exported from some Asian countries was noted. One participant pointed out that in promoting the development of furniture, SME joint efforts were undertaken by government, the private sector and international traders.

43. In that respect, all participants agreed that knowledge of (a) domestic/export market characteristics, (b) market opportunities and market promotion, and (c) market penetration strategies including tariff and non-tariff barriers, was essential to meet the standards required in the target market.

International co-operation

44. In discussing the advantages of establishing or strengthening co-operation mechanisms at regional and international levels, some participants underlined that, through such co-operation, markets for secondary wood products could be expanded for mutual benefit.

45. In view of the fact that R & D findings did not always reach the potential users, the participants felt that international organizations should increasingly reinforce their role of clearing houses for information. In that respect bulletins and newsletters as well as the establishment of focal points at regional and subregional levels, the exchange of experience through networks, information workshops, and demonstration projects were mentioned as effective means to reach larger numbers of beneficiaries.

46. The ASEAN Timber Technological Centre (ATTC), a regional organization operating in the wood sector, was mentioned as an example of an institution providing training and consultancy, disseminating information, developing research and carrying out upon request of its clients feasibility studies for specific products.

47. As far as financing was concerned, the representative of the World Bank pointed out the role of a number of institutions in promoting entrepreneurship and private industry through the provision of financial support such as lending lines, loans and investment. Among others, the International Financial Corporation (IFC), the African Project Development Facilities, based in Nairobi, and the African Management Service Co-operation, based in Amsterdam, were mentioned.

III. CONCLUSIONS AND RECOMMENDATIONS

Raw material availability

Conclusions

- Information on currently commercially less accepted species (CLAS) is available but the end-users are not aware of this and continue utilizing well-known species.

- Plantations of fast growing species can be established close to the manufacturers and homogeneity can be achieved for specific products. In some countries plantation species represent the only raw material source for the secondary wood processing industry.

- More intensive use of these species will help relieve pressure on natural forests. Environmental concern over the loss of forest resources can be alleviated by the more intensive utilization of plantation species.

Recommendations

- Information on CLAS should be disseminated to the end-users such as architects and structural engineers.

- Technical viability and competitiveness vis-a-vis other building materials should be ascertained for promoting the utilization of wood in construction.

- More research has to be carried out on CLAS. A pragmatic approach such as the introduction of a proof-grader in Australia, could be a solution for the grading of species.

- Design aids and simple tables indicating names of species, their weight per unit, and common uses could be helpful in promoting CLAS and plantation species.

- Demonstration projects to show the viability of utilizing non-traditional species like coconut and rubber wood should be promoted.

Manpower Development

Conclusions

- Specialized technical and design skills for secondary wood processing are not covered by existing curricula. Universities and other training institutions are generally more conversant with other building materials.

- Small-scale entrepreneurs cannot afford training outside the mill, neither are they inclined to hire skilled workers.

Recommendations

- Curricula should be developed and/or introduced in training institutions for design and technical skills relating to secondary wood processing.

- Video programmes, films, and simplified manuals should be developed for entrepreneurs who should be made aware of the need to invest in training to increase future productivity. Governments should apply tax reduction policies for training expenses.

- Due to the large numbers of qualified workers needed by the secondary wood processing industry, urgent attention should be given to the training of trainers. This training should preferably be carried out at regional and national centres and supported by international organizations.

Equipment

Conclusions

- Basic wood-working machinery is already being manufactured in a number of developing countries. Local capabilities for repair and service have the potential to develop into equipment manufacture capacity.

- Performance and service life of imported wood working equipment is often adversely affected by the lack of after-sale services.

Recommendations

- South-South co-operation should be exploited to a larger extent in the field of local manufacture of wood working equipment following the example of a number of countries in Latin America and South East Asia.

- When importing wood working equipment the utilization of checklists would help to avoid problems at a later stage. In this connection, available checklists prepared by UNIDO and other international organizations should be promoted.

Technology

Conclusions

- R & D institutions in developing ocuntries have an important role to play in generating and adapting technology to local needs because they are better aware of the local environment including raw material availability and level of skills.

- Frequently, R & D institutions work in isolation, without taking into consideration the real needs of the industry in their research programmes.

- Experience in developing countries has shown that the existence of national capabilities in consulting engineering services has facilitated transfer of technology from developed countries.

Recommendations

- R & D institutions should work in close co-operation with industry in order to find solutions to immediate and long-term problems regarding secondary wood processing. In return, financial support provided by industry should help R & D institutions become less dependent on government funds.

- The utilization of local consulting engineering firms as technology transfer agents should be encouraged by governments by every feasible promotional measure. In developing countries where such services are not yet available, international agencies and governments should take steps to encourage their development by providing fellowships and other forms of training abroad.

Government strategies and policies

Conclusions

- Government policies range from fiscal and monetary loans, industrial development, trade, investment, labour, and resource management to housing and construction policies, etc.

- In most developing countries building regulations restrict the use of wood in construction. Technical and institutional constraints such as insurance premia and lack of credit facilities have to be counter-acted.

Recommendations

- Existing investment laws should be reviewed and amended, wherever necessary, in order to attract both foreign and local investors to invest in the secondary wood processing industry of developing countries. In developing countries where similar laws do not exist, legislation providing incentives to investors will help develop the secondary wood processing industry.

- Governments should undertake forward and comprehensive planning of the industrial sector for the formulation of policies and strategies with the objective of stimulating private sector participation.

- Before promoting the development of secondary wood processing industries, governments should take the necessary measures to establish backward and forward linkages, such as raw material supply, manpower availability, transport infrastructure, etc.

- The establishment of "villages" (industrial estates) for furniture manufacturers has proven successful in some Asian countries. Common services

provided could bring about substantial savings. This example should be followed in other developing countries.

- Governments, the private sector and professional groups should work together in the review of building codes and regulations in order to allow for a wider scope in the utilization of wood in construction.

Institutional infrastructure

Conclusions

- The majority of the secondary wood processing industries are small and medium enterprises which require support measures such as credit facilities, manpower training, standards and quality control, technical assistance, etc. from the public sector. They also usually need assistance with regard to organizational, financial and managerial capabilities.

Recommendations

- Governments, through small industries development organizations (SIDO's) and with the assistance of regional and international organizations should whenever necessary, provide adequate extension services to those secondary wood processing industries that show potential to expand and consolidate themselves as truly industrial enterprises. Special support should be given to cottage industries that show a trend to remain at the artisan or semi-industrial level of production.

- Associations of professionals and of forest products enterprises should be developed/strengthened so as to make optimal use of government support, technical assistance, financial arrangements and marketing opportunities.

Small and medium enterprises

Conclusions

- Requirements for the growth of small-scale industries are often difficult to meet while larger complexes enjoy the benefits of economies of scale.

- The need for promoting development of entrepreneurship was recognized especially for investment opportunities that arise from expanding markets (domestic and export), new technologies and public promotional measures.

- The lack of suitable sources of financing and access to credits at

attractive terms and conditions, or the lack of knowledge about such sources has acted as an impediment to entrepreneurial development.

Recommendations

- One way to ensure the viability of SME's is to enter into subcontracting arrangements. Product design must be so tailored as to allow for subcontracting. Small-scale industries can also benefit from systems of co-operatives for provision of materials, production and marketing.

- Policy and promotional measures must be taken to create an environment conducive to the participation of local entrepreneurs. Likewise, institutional support measures must be adopted in order to provide assistance in the identification and preparation of investment projects, extension services, training and market information.

- Access to and information about credit and finance sources should be awarded high priority when formulating government policies aimed at mobilizing domestic and external financial resources.

Transportation

Conclusions

- Cost of transportation, inland and ocean, constitutes a serious obstacle in the promotion of trade of both wood raw materials and finished products. Obsolete or missing infrastructure in many developing countries causes additional costs and restricts the full use of modern transport technologies.

- Transportation costs are differently structured in the various geographical areas due to different government policies and market characteristics which make a direct comparison of transportation costs difficult.

Recommendations

- With regard to the export and transportation of secondary wood products containerization of finished products at the premises of the exporter seems to be the only safe and economically viable alternative. A concept of a closed transport chain such as multimodal or combined transport offers the most effective operation.

- The matter of overall transportation costs in the various markets requires further study and examination to determine the actual proportion of transport costs in the c.i.f. value for the goods concerned.

- Governments should support efforts by international organizations such as UNCTAD to establish multimodal transport operators in developing countries. Due to the complexity of transport operations, organizational skills have to be developed particularly in respect of export of secondary wood products.

Marketing

Conclusions

- Marketing activities for secondary wood products from developing countries are hampered by lack of knowledge of market characteristics, both domestic and foreign. This situation, more often than not, leads to non-recognition of market opportunities and loss of sales. Market penetration is seldom successful due to inadequate promotional activities. Access to markets is further curtailed by tariff and other measures designed to protect the wood processing industry of the importing countries.

- A number of instances of successful marketing of wood products from developing countries has been observed in joint-venture arrangements between marketing firms in the target country and the manufacturers of developing countries.

- Environmental concern in developed countries tends to restrict import of tropical wood products to supposedly ameliorate tropical deforestation. Logging and timber utilization by the industry has not a strong impact on tropical deforestation. Government policies regarding livestock development, agriculture, agrarian reform and rural development are the main causes of tropical deforestation.

Recommendations

- Market activities, involving identification of target market characteristics and adoption of marketing strategies to suit such market requirements should be intensified with the help of established trade boards or agencies of government trade ministries.

- In order to ease accessibility to specific markets participation in international trade fairs for secondary wood products and similar promotional activities should be encouraged.

- More vigorous efforts should be exerted by governments of developing countries to include secondary wood products in the list of items favoured in bilateral agreements lowering trade barriers for selected products from developing countries.

- It is of paramount importance to inform the public in general and the environmental groups in particular of the real causes of tropical deforestation.

International co-operation

Conclusions

- Regional and country-to-country co-operation between timber surplus and timber deficit countries could be a means to overcome problems of raw materials availability.

- Information on research results, training, wood market opportunities, technology, and sources of financing might be available but it is not accessible or diffused to the potential beneficiaries.

Recommendations

- Recognizing that export of raw material is regulated by national governmental policies which might aim at preventing the outflow of timber from a country, a mechanism for co-operation should be identified highlighting the mutual benefits of regional links and streamlining the commercial terms of regional interchange operations.

- UN Organizations should act as clearing houses for the collection and dissemination of information in all areas through mechanisms such as the Industrial and Technological Information Bank (INTIB), newsletters, data banks and directories.

ISSUES SELECTED FOR THE CONSULTATION

The development of the wood and wood products industry in the developing countries faces a number of constraints which need to be addressed with a view to finding solutions to overcome them. Although the constraints bear common features with other industrial sub-sectors those that are critical and specific to the secondary wood processing sector were identified by the Global Preparatory Meeting to be: (a) the availability of raw materials on a predictable and sustained basis; (b) the underutilization of wood in housing and construction; (c) the low level of investment in the secondary wood processing industry; (d) the absence of long-term forward and integrated planning of the secondary wood processing industry in the context of resource

management, primary processing and ancillary industries; (e) the lack of coherent policies and strategies and promotional measures to create an environment conducive to investments; (f) the low level of technological development, lack of trained manpower and entrepreneurship; (g) the high cost of production and transportation costs; (h) the need to safeguard the environment, and (i) the shortage of financial resources, limited access to credit facilities and lack of available sources of information on financing.

In light of the above, the Meeting recommended that the Consultation address the following issues:

1. Measures to strengthen environmentally-sound, sustainable supply of timber resources for the secondary wood-processing industry including the utilization of currently commercially less accepted species (CLAS) and plantation species.

2. Greater utilization, on a sustainable basis, of wood including CLAS and plantation species, as a source of indigenous low-cost building material in housing and construction.

3. Prerequisites for the integrated development of the secondary wood-processing industry, namely: policy and strategy formulation, technology, manpower development, transport, marketing, finance and environmental awareness.

4. International and regional co-operation: technical and technological co-operation; co-operation in the development of capacity for design, standards and quality control, machine maintenance, consulting engineering services, adaptation of technology and manufacture of wood-working machinery; exchange of information and networking of research centres, manufacturers' associations, etc.; training; enterprise-to-enterprise co-operation; marketing and financing.

Annex I

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Annex II

LIST OF DOCUMENTS

Expert Group Meeting on the Wood and Wood Products Industry - Report Vienna, 4 to 7 December 1989	IPCT.105(SPEC.) E/F/S
Secondary Wood Processing in Ghana, Liberia, Côte d'Ivoire and Nigeria by Gordon E. Gresham	ID/WG.500/1(SPEC.) E
Secondary Wood Processing in Africa by Gordon E. Gresham	ID/WG.500/2(SPEC.) E/F/S
Report of the Regional Meeting for Latin America in preparation for the Second Consultation on the Wood and Wood Products Industry Guaruja (Brazil), 4 to 6 December 1989	ID/WG.500/3(SPEC.) E/F/S
Secondary Wood Processing in Asia and the Pacific by Horatio P. Brion	ID/WG.500/4(SPEC.) E/F/S
Secondary Wood Processing in the Eastern African Countries by Charles Rodney Francis	ID/WG.500/5(SPEC.) E
Promoting Secondary-Wood Species in Support of the Global Shelter Strategy by UNCHS (Habitat)	ID/WG.500/6(SPEC.) E
Discussion Paper on the Secondary Wood Processing Industry by UNIDO Secretariat	ID/WG.500/7(SPEC.) E/F
Secondary Wood Processing in the UDEAC countries by Benedict A. Fultang	ID/WG.500/8(SPEC.) E
Review of the Wood and Wood Products Industry in Brazil by Reinaldo Herrero Ponce	Conf. Room Paper No.1 E
Colombia: La Madera y la Industria de Productos de Madera con Enfasis en Procesos Secundarios by Arturo Hernández d'Amato	Conf. Room Paper No.2 S

El Sector Fabril Chileno by Agustín Moreno	Conf. Room Paper No.3 S
México: Descripción de la Industria Forestal y la de Productos Derivados, con Enfasis en los Procesos Secundarios by Mario González Rusek	Conf. Room Paper No.4 S
Situación Actual de la Industria Maderera en el Perú by Alberto Palacios	Conf. Room Paper No.5 S