



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

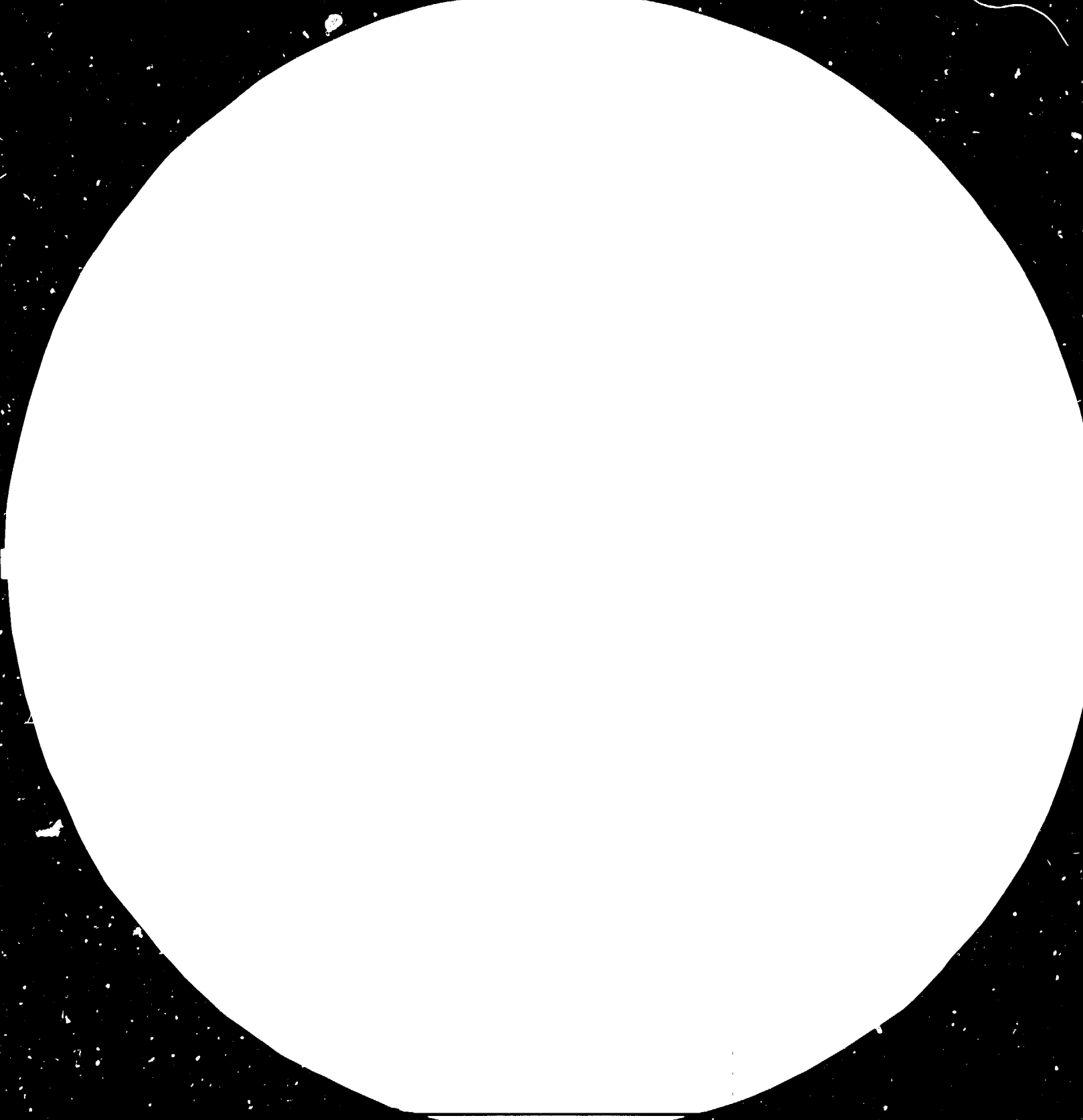
FAIR USE POLICY

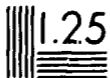
Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org





1.6

1.8

2.0



MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A



UNITED NATIONS INDUSTRIAL DEVELOPMENT
ORGANIZATION



FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

FIRST CONSULTATION
ON THE WOOD
AND WOOD PRODUCTS INDUSTRY

Helsinki, Finland
19 - 23 September 1983

Distr.
LIMITED

IL/WG.395/8
20 June 1983

ORIGINAL: ENGLISH

12702-E

Issue Paper No. 2

Measures to promote the use of
wood and wood products*

prepared by the
UNIDO secretariat

203

* This document has been reproduced without formal editing.

V.83-57376

TABLE OF CONTENTS

	<u>Page</u>
I. CONSUMPTION OF WOOD PRODUCTS	1
II. THE DEVELOPMENT OF LOCAL MARKETS	1
III. THE PROMOTION OF WOOD IN CONSTRUCTION	3
IV. PROMOTION OF COMMERCIALY LESS ACCEPTED SPECIES	6
V. TRADE PROMOTION MEASURES INCLUDING MARKETING	12
- - - - -	
Points for discussion	15



UNITED NATIONS INDUSTRIAL DEVELOPMENT
ORGANIZATION



FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

FIRST CONSULTATION
ON THE WOOD
AND WOOD PRODUCTS INDUSTRY
Helsinki, Finland
19-23 September 1983

Distr.
LIMITED
ID/WG.395/8/Corr.1
28 July 1983
ORIGINAL: ENGLISH

with

12702 -E

Issue Paper No. 2

Measures to promote the use of
wood and wood products

Corrigendum

Page 2, table 1

The entries for wood-based panels should read

Developing countries	9 (7,6%)	20 (10,3%)	39 (11,9%)
World	118	194	328

Page 3, paragraph 8

Line 4: For 10,1% read 7,6%

Line 5: For 17,1% read 11,9%

I. CONSUMPTION OF WOOD PRODUCTS

1. The world consumption of roundwood has been increasing at an annual rate of 1.3 % between 1971 and 1980, to reach around 3.000 million m³ in 1980. Of this total, fuelwood represents more than half (1.626 million m³ in 1980), 60 % of which is consumed by developing countries. ^{1/} Consumption of industrial roundwood grew by 0,8 % yearly in the 70's, to a total of 1.393 million m³ in 1980, 83.5 % of which was consumed in developed countries.

2. Around 61 % of the industrial roundwood goes to the sawmills for conversion to sawn timber or to peeling and slicing mills for cutting into industrial veneers for manufacture of plywood and blockboards, decorative veneers, etc. Another 23.5 % is used for pulpwood and the rest (15.1 %) goes to other uses. ^{2/}

3. There does not exist a world-study on the end-uses of timber. Nevertheless, available information compiled by the ECE/FAO Timber Committee on the end-uses of sawnwood and wood-based panels in 1969-71 for the European market helps to define what the main end-uses of timber in developed countries are, and may show at the same time what the trend in developing countries will be in the years to come. According to this study, more sawnwood and wood-based panels are used in construction than in all other sectors put together. Packaging ranges second as an end use for wood, followed by the furniture industry. ^{3/}

II. THE DEVELOPMENT OF LOCAL MARKETS

4. Even taking into account that during the last years wood consumption has been growing at considerably higher rates in developing countries, the contrast between developed and developing countries is still very striking if per caput consumption of the main primary products is considered. According to FAO, the following consumption was registered in 1976 (per 1.000 caput):

	<u>Sawnwood</u> (m ³)	<u>Panels</u> (m ³)
Developed countries	300	100
Developing countries	20	2

^{1/} Wood, cut and carried home by the family is the only source of domestic energy for millions of the very poor and approximately 2.000 million people presently depend on fuelwood and other traditional fuels for their daily domestic needs. Agriculture toward 2000, FAO, C/79/24, Rome, 1979, p.125.

^{2/} FAO, Yearbook of Forest Products, 1969-80, Rome, 1982.

^{3/} See European Timber Trends and Prospects 1950 to 2000, ECE/FAO, Geneva 1976, p.54.

5. The main problem in the development of a domestic market for mechanical wood products in developing countries is that most of them have not traditionally been large consumers of these products. As has been indicated above, the principal use of wood in developing countries has been as a domestic fuel. Where wood is used in construction it is often in the homes of the very poor, where more often than not it is used in pole or rough hewn form, or in the homes of the very wealthy, where it is used for decorative purposes and furniture. It is also used in temporary works as framing, forms or scaffolding in the construction of concrete and steel buildings.

6. The possibilities of expanding the local use of wood in construction will be discussed in the next chapter. In general, there is reason to believe that the demand for wood for structural and non-structural purposes will increase. Countries with forest resources and dependent on imports of fuel would be well advised to increase the use of wood commodities that can be produced in manufacturing facilities that are energy-self sufficient. It will be necessary to be innovative in the way in which tropical woods are used and in the applications of preservatives treatments to counter the conditions conducive to decay that prevail in the tropics.

7. The FAO Forestry Department has estimated future consumption levels of the main wood products to the year 2000. Although the assumptions underlying the projections may be changed by different per caput levels of income, changes in the relative prices, preferences and substitution, the figures provide a useful insight into possible growth rates.

Table 1

Present and projected future consumption of the main industrial wood products in the world, and in developing market economies

	1980	1990	2000
<u>Sawnwood (million m³)</u>			
Developing countries	48 (10,4%)	65 (12,4%)	91 (14,5%)
World	458	525	626
<u>Wood-based panels (million m³)</u>			
Developing countries	9 (10,1%)	20 (14,1%)	39 (17,1%)
World	89	142	227

Source: World Forest Products Demand and Supply - 1990 and 2000.
FAO, Rome, 1982, p.ix, Assumptions of Scenario A.

8. It follows from the above-mentioned study that the rate of growth of demand in developing market economies will more than double the rates in world demand for the main industrial wood products, increasing their share in total world consumption from 10,4 % and 10,1 % for sawnwood and wood-based panels to 14,5 % and 17,1 % respectively.

III. THE PROMOTION OF WOOD IN CONSTRUCTION

9. Many developing countries with important underutilized forest resources have high and increasing housing deficits, which might not be covered in the foreseeable future with conventional building materials due to their high costs nor with the existing building methods which, in general, are not aimed at low-cost housing. Recent studies in some Latin American countries have shown that in the next fifteen years these countries would have to increase their building activities fourfold to meet the increased demand in housing. In other regions the problem is similar or even more acute. For example, in India, Pakistan, Zaire and Cameroon building would have to increase between five and eight times to be able to satisfy the existing deficit. ^{4/}

10. The urban building material (bricks, steel and concrete) and building techniques do not offer an acceptable solution to this problem due to their high cost. Both (materials and techniques) are the result of the indiscriminate import of foreign patterns of consumption and as a result of it the use of wood in construction in developing countries has been diminishing progressively. New information on its technical properties and conditions of use has stagnated and efforts to develop time and cost-saving techniques have been insufficient.

11. Among the main advantages of the use of wood in housing are that wood is a renewable resource, that it has a high relation between resistance, weight and resilience, it is easy to work and to handle and has esthetic values besides its versatility. Last but not least in many instances it is a low cost building material.

12. Many factors have so far limited the use of timber in housing in developing countries. Legislation and financial limitations are the most important ones. Besides, the resistance of the local population (mainly the urban one) to the use of wooden houses due to prejudices against its behaviour under fire or biological factors, e.g. the lack of dissemination of technical information against these prejudices, the inexperience of the productive sector, etc. are worth mentioning.

4/ M. Tejada, Promoting the use of wood in construction, UNIDO. ID/WG.395/2.

13. Technical impediments against a more expanded use of wood in housing in developing countries include:

- a) The lack of specialized technological research on tropical species;
- b) The heterogeneity of the tropical forests;
- c) The lack of design techniques for tropical wood and tropical climates;
- d) The lack of an appropriate industrial structure;
- e) The lack of acceptability of wooden housing due to socio-economic factors;
- f) The lack of codes and regulations to promote the use of timber in construction.

14. A great part of the technological information available and the criteria utilized for the design with tropical wood is based on experiences gained with coniferous species, which are different in anatomic properties and behaviour to tropical woods. Due to the lack of laboratories and personnel in the area of timber engineering and the limited reliability of existing studies it is difficult to establish representative design properties for hitherto unutilized tropical species. So far research had been limited to study small specimens free of defects, and the information did not cover all the significant properties needed for design.

15. It has been estimated that there exist more than 5,000 species in the tropical forests, out of which 1,500 might be adequate for use in construction. Comparatively, the number of coniferous species currently used in countries with a long-standing tradition in the use of wood for construction is not larger than twenty. To cope with the heterogeneity of the forests and use them for industrial purposes, intensive research will be needed on the physical and mechanical properties of the species. ^{5/}

16. The anatomic differences between coniferous and tropical hardwoods constitute a major limitation. The legislative texts and design manuals as well as building methods prepared for the use of coniferous timber in construction are not directly applicable in developing countries for the use of tropical hardwood in a different climatic and social environment.

17. Due to the low requirements of local demand, the primary industry in developing countries is in general small and inefficient. The number of species used is low, the equipment used is inadequate and wasteful and as a consequence yields are low (on average around 35 %), drying facilities are lacking and assistance to solve technical problems is missing. This produces as a result a low quality and expensive product.

^{5/} M. Tejada, *Ibidem*, p. 6.

18. Prejudices against the use of wood in housing are very strong, mainly concerning its behaviour in fire and its durability. Also, the lack of adequate technical and financial support has worked against the acceptability of wood.

19. In most tropical countries, there does not exist an appropriate legislation, building codes and standards to guarantee the efficiency of wooden constructions. In many cases, the laws on housing exclude timber as a building material and sometimes even prohibit the construction of wooden houses in regions with rich forest resources. The inexistence of building codes and of an appropriate legislation is mainly due to the lack of technological knowledge of tropical timber. ^{6/}

Elements for the promotion of timber in construction

20. The effective introduction of wood as a building material will have to incorporate a number of factors: Technical aspects related to the knowledge of the raw material and building techniques, industrial and marketing aspects, standardization, institutional aspects and financial and promotional aspects.

Technical aspects

21. It is necessary to strengthen research on the properties of tropical timber in order to a) obtain reliable technical information to propose structural values in timber engineering and b) to obtain improvements in timber processing which can be applied at an industrial level. ^{7/}

Constructional techniques

22. A second area which has to be covered refers to construction techniques. Some basic criteria to be taken into account are:

- a) That the building techniques have to be easy to understand and to implement with simple tools.
- b) They should consider dimensional standardization.
- c) New elements and modules have to be tested before applying them in practice.
- d) Design has to be especially careful with regard to protection against fire and fungi, by specifying for example cement bonded panels and fire-protection walls.
- e) The drafting of building codes for wooden houses has to be a priority.

Industrial base

23. The development of the industrial base is fundamental for the promotion of wood in construction. In this regard the following areas should be considered:

6/ M. Tejada, *ibidem*, p. 8.

7/ M. Tejada, *ibidem*, p. 10.

- a) Studies allowing an overall view of the situation of the industry and its capability to meet the requirements of increased use of wood in construction.
- b) Introduction of new species, their rational grouping and grading, in order to increase the availability of raw material. This would require increased knowledge on the mechanical properties as well as the solution of problems related to processing, preservation and drying.
- c) Programmes aimed at the development of the industrial structure should consider the establishment of centres to service the industry (saw-doctoring, drying, etc.).
- d) Training should be undertaken as suggested in Issue Paper No.1 (paras.31 and 32).

Industrial production of wooden houses

24. The main obstacle to a wider development of wooden building materials and wooden houses has been the lack of a wider market with clear specifications on dimensions and quality. However, the actions are needed to foster the complementarity and specialization in primary and secondary processing, like the production of beams and trusses according to established standards. Also improving efficiency of existing small and medium-scale industries will be necessary (see Issue Paper No.1) to produce components for the constructional sector.

Possible international actions

25. International co-operation should facilitate the transfer of knowledge in the following areas:

- a) Technological knowledge of the raw material, with special emphasis on its use in construction.
- b) The preparation of manuals should include techniques, grouping systems and appropriate model designs for specific codes.
- c) Development of building techniques.
- d) Improvement of efficiency in industry.
- e) Regional and subregional action is needed to modify building codes and regulations in order to allow a wider use of wood.
- f) Regional collaboration in testing.

IV. PROMOTION OF COMMERCIALY LESS ACCEPTED SPECIES

26. Tropical forests are currently being logged for only a few selected species. Removals of industrial wood from areas being logged in the tropical forest are usually limited to a selected, and often small portion of growing stock, with many species and grades left unharvested. FAO in its recent study of tropical forest resources estimated that the volume per hectare actually commercialized from undisturbed productive closed broad-leaved forest is on average 8.4 m^3 from a volume of 157 m^3 or 5.4 %. ^{8/}

^{8/} O.P.Hanson, Promotion of commercially less accepted species, UNIDO, ID/WC.395/1, 1983.

27. The division between the so-called "primary" and "secondary" species is based largely upon occurrence. The existence of small quantities of a large number of individual species has led to the selective felling of the few dominant ones. The heterogeneity of tropical forests varies according to the regions, South-East Asia having the most homogeneous forest and the Amazon area the most heterogeneous one with Africa in between.

28. The following data on the number of tropical species may provide a helpful insight into the heterogeneity of the tropical moist forests. According to Erfurth and Rusche in South-East Asia among the "commercial species" there are 290 species of the dipterocarpaceae family, and some 310 of the non-dipterocarpaceae families; in the category of "lesser-used species" there are some 87 species of the dipterocarpaceae family and 376 species of the non-dipterocarpaceae families, making a total of 600 "commercial" and 463 "lesser-used" species. In West Africa, there are 105 "commercial" species belonging to about 20 genera and some 111 "lesser-used" species belonging to about 32 genera. In South America there are some 210 "commercial" species belonging to about 37 genera and 260 "lesser-used" species. This adds up to a total of 910 "commercial" and 836 "lesser-used" species in all three regions. ^{9/}

29. The same study concludes that in South America out of 470 wood species more or less known to the trade, 28 are of significant production but 5 species represented over 50 per cent of production and in broad terms only these five species were exported. It also concludes that the volume may vary between 100 - 270 m³/ha and the volume of commercial wood ranges normally between 5 and 20 m³/ha.

30. The progressive reduction in the availability of established species, together with the need for a more rational management and utilization of forest resources calls for a better and wider use of species which are currently less commercially accepted.

31. A great deal of information concerning the technical properties of many hundreds of species is already available from research establishments around the world, but it is of paramount importance for their promotion that the correct information be available and in the hands of the right people. It is the end-user who will become expert in the utilization properties of the species. To avoid duplication and research into properties which are not related to the end use, research should be conducted bearing especially in mind the properties their

9/ T. Erfurth and H. Rusche, The Marketing of Tropical Wood: (A) Wood Species from African Moist Forests (FAO 1976), (B) Wood Species from South American Tropical Moist Forests (FAO 1976), (C) Wood Species from East-Asian Tropical Moist Forests (FAO Misc./76/8, April 1976).

eventual user is interested in. For example, research in depth into the mechanical properties of a particular species in the solid form may be largely wasted if the eventual utilization of the species is likely to involve chipping, defibration or pulping, or vice versa.

32. The need for technical research into the properties of species should not be overemphasized in comparison with the need for research into the occurrence of the same species. From a marketing point of view continuous supply is an absolute necessity. Resource and marketing research are both necessary and any lack of information regarding inventory can only compound marketing problems. Applied research is needed for certain end uses (e.g. staining characteristics for decorative woods).

Grouping

33. The low occurrence of a large number of species obviously suggests the possibility of grouping, something that has already been done effectively in several parts of the world including the tropics, for both utility and structural purposes. Only the truly decorative uses should be thought to be necessarily unsuitable for grouping. Successful grouping will require careful selection of species from the technical point of view. Appropriate technical properties need to be carefully established and the final selection of species to make up a group will need to take these into account.

34. Grouping for utility purposes is likely to be best achieved on decisions made in producing areas or regions rather than in accordance with international agreement on a global basis. Nevertheless, technical meetings supported by adequate research and development could well be the basis of guidelines for grouping for utility purposes, and adherence to the guidelines would help to harmonise the grouping criteria used in different regions without imposing unacceptably rigid rules.

35. Global agreement regarding grouping for structural purposes is more likely to find favour when numerous disparate species have to be grouped purely for structural purposes, the decision as to where to place group boundaries inevitably becomes arbitrary. The Australian system already has international reputation and is applicable to a great range of timbers and world regions, and its adoption or adaptation for universal use should be considered. However, structural design in many countries is dominated by a few important temperate softwood species, and it is necessary to evolve a system of grouping that is very efficient for use with the most common softwoods, but that can also take account of the full range of other species including tropical hardwoods.

Promotional actions

36. The first requirement that can be established regarding the problem of the "lesser-used" or "lesser-known" species is to identify and evaluate those that need be in no way commercially less accepted. This is a matter of research into both occurrence and properties and will be referred to again later. Prospects for such species will be progressively improved by the reduced availability of currently used species.

37. The marketing of a new species of sawn timber typically passes through several stages, in the first of which hand samples and information regarding the properties of the species are presented to the potential customer. The customer may receive larger samples for experiment and then perhaps small parcels at a discount price. Unfavourable comment is sometimes made when the customer comes face to face with the intended standard price, and it is recommended that a true indication of eventual price level should be given in the first place or that the basis of discounting the price of trial parcels is made clear.

38. A recent study carried out in the United Kingdom concerning the successes and failures in the introduction of new species indicated that the best general approach was the insertion of a species into the stockholding of a merchant who is known to stock a wide range of species. According to this study, merchants have three main criteria in judging the prospects for a new species and these rank more or less equally. The three are: occurrence and likely reliability of supply, the suitability of the species for specific end-uses, and ease of processing. Merchants are also concerned with the likely grading and specification of supplies.

39. The amount and quality of information available regarding the species may well affect the possibility of introducing the species to a potential user but does not seem to have any significant effect on the outcome of that introduction, once made. The user himself will quickly become more expert in the utilization of a particular species for his particular end-use than any research institute could achieve by providing information on properties.

40. The end-user's unit production costs will rise according to the number of different species that he has in use since production control is simpler and less costly for the few species being catered for. The cost of inventory also rises with the introduction of new species, and these are two reasons for caution on the part of the end-user in accepting or even trying a new species.

41. The effort that is necessary to introduce new species to potential users is quite costly for the importers or merchants involved, and this consideration reinforces the concern for the reliability of supply. Trading arrangements which provide for some exclusivity of supply to the importer or merchant concerned could be thought to be reward for his effort while also possibly being beneficial to the producer. Such arrangements would help cope with a small but potentially reliable volume of supply of an individual species.

Generic promotion

42. The most important form of promotion of "lesser-used" species must in the final analysis be carried out by the sellers of the wood in the market-place. There is however much scope for the generic marketing of tropical wood on a co-operative basis. There are probably two main reasons for this:

- 1) Both producers and consumers of raw materials may be wide-spread and numerous; the multiplicity of the direct links between them can only result in a fragmented marketing process lacking co-ordination and common purpose despite the obvious community of interest.
- 2) The direct links may be largely manned by commercially oriented persons and companies who may tend to lack the more technical skills necessary for promotional activities.

Essential promotional activities include: marketing research, publication of technical and promotional literature, the provision of information on request, exhibitions, seminars and courses aimed at the education of the specifier and user, development of end-uses appropriate to the market concerned, representation of the interests of tropical wood on standardization committees, advertising and obtaining editorial publicity and inclusion of references to those species in the curricula of technical schools.

Promotion on the local markets

43. One reason for the difficulty of marketing the "lesser-used" species in importing countries is the length and complexity of the supply chain which is well served by the more trouble-free characteristics and general availability of the well-established species. It has already been noted that the less favourable characteristics of generally available species can typically be coped with, but the handling of a larger number of species in small individual quantities is rather more difficult. Local - domestic and regional - markets are likely to be decidedly easier in this respect, particularly since there can be closer vertical integration between the primary forest industry, the construction and wood-based manufacturing industries. Individual smaller scale requirements can be satisfied more directly. The use of these species will "liberate" corresponding volumes of better known species for export.

44. It is possible that local wood-based industries may be inefficient, poorly trained and equipped, and possibly incapable of coping with the more troublesome characteristics of some species. It is important that the training is provided to help improve any such situation and that equipment should be adaptable to cope with the use of such species. Equipment should be properly selected and maintained and provision must be made for the availability of spare parts. Saws and cutters need to be properly maintained and drying techniques correctly applied.

45. It is often recognised that it would be helpful to have a large number of uses for wood and wood-based panel products in producing countries and that the larger volume uses that might be encouraged in the construction industry would be particularly helpful. Quite typically, there are consumer prejudices in producing countries against the use of wood in housing and there is need for promotion of the concept. Other constructional uses such as industrial buildings and bridges could also be encouraged.

46. Codes and standards relating to housing and construction could well be examined to ensure that they do not tend to frustrate the use of a wider selection of species. At the same time, genuine problems such as resistance to termite attack and fire protection should receive full attention. One useful aspect of the use of wood in tropical climates is that the less dimensionally stable species are less troublesome in respect of movement than in temperate climates. The increased use of timbers in construction calls for the availability of fire-insulating panels in the country (e.g. gypsum board).

Possible actions for the promotion of commercially less accepted species

47. Possible areas for action at either the national or international level by governments, UN and other international organizations include:

- 1) Dissemination of available information on commercially less accepted species and research regarding a) resource research on species composition of the forest with emphasis on those parts of the forest available for earlier harvesting, and on forest management implications of the extraction of lesser known species; b) technical properties, with emphasis on outstanding features and main disadvantages having in mind the end-use of the species.
- 2) Need for preparation of guidelines for grouping and where found appropriate to encourage international standardization (regional and international expert group meetings).
- 3) Generic promotion of tropical wood and wood products, so that such promotional methods are available for use on species where proper application might remove their "less-accepted" classification.

- 4) Further consideration on regional and international level is required in order to study the possibilities of the utilization of low quality wood and wood residues for further processing and production of energy and fuelwood.
- 5, Assistance to solve the problems of the use of "lesser-known" species in secondary wood-using industries in producing countries especially in housing and construction and advise on incentives that governments might provide.

V. TRADE PROMOTION MEASURES INCLUDING MARKETING

48. Forest products constitute a major component in international trade with certain regions being heavily dependent on imports for their current level of consumption. The current value of international trade of forest products increased from \$ 6.700 million in 1961 to \$ 58.851 million in 1980. Over the past two decades the volume of trade has grown at 5 per cent per annum.

49. Although around 85 per cent of industrial forest products trade originates and terminates in developed countries, developing countries have assumed a significant position. The value of exports of forest products from developing countries increased from \$ 530 million in 1961 to \$ 8.682 million in 1980. The bulk of these exports is represented by sawlogs, sawnwood and wood-based panels which amounted to \$ 7.472 million in 1980, that is 86 % of the total. In value terms Asia, where there has been a spectacular growth in exports of roundwood, sawnwood and plywood, is the main exporting region, accounting for 70 % of exports from developing countries, followed by Latin America with 18 % and Africa with 12 %.

50. Developing countries are major exporters of hardwoods: exports (fob) of hardwood sawlogs amounted to \$ 4.037 million in 1980 and 88.6 % of this value was supplied by developing countries. Imports (cif) of hardwood sawlogs were up to \$ 6.065 million in 1980 and developed countries imported 77 % of the total. The difference between fob and cif prices reflects the incidence of high transport costs. Developing countries also exported \$ 1.769 million of sawn hardwood (60 % of world's total), \$ 1.313 million of plywood (51 % of the world total), and \$ 1.447 million of other wood products (joinery and furniture).

51. Trade of these products is linked to specific markets. Nearly all logs from West Africa and Latin America go to Western Europe, nearly all those from South-East Asia to Japan, who is by far the largest importer in the world of sawlogs and veneer logs both coniferous and non-coniferous species. The market for West African processed wood is Europe which also is the main outlet for sawnwood from Latin America. Only plywood from South-East Asia has more diversified markets.

52. A remarkable fact about international trade is that Japan absorbs 51 % of the world's exports of saw and veneer logs (both hardwoods and softwoods), of which 62.8 % in the case of coniferous logs and 43.6% of non-coniferous. Imports of non-coniferous sawnwood by Japan have fluctuated and their share has dropped from 5 % of world imports in the early seventy's to 4.2 % by 1980, whereas imports of plywood by Japan dropped from 5.4 % to 1 % in 1980.

53. While roundwood is admitted free of duty in most consuming countries, processed wood faces a number of tariff and non-tariff barriers. In some cases, for example plywood, the obstacles to enter the markets of some developed countries are serious enough to discourage any attempt in this direction. ^{10/}

Marketing

54. As outlined by UNCTAD in its documentation for an Agreement on Tropical Timber the main obstacles in the international market for wood producers are related to market intelligence, promotion activities and the actual selling process. ^{11/}

55. In most developing countries, the existing institutional machinery to provide information on middle- and long-term market trends is insufficient or simply lacking. Only a few producing countries have established their own information system and some regional organizations, like SEALPA and the African Timber Organization, pool information on markets and on supply of tropical timber. The need to establish adequate information systems on market and technical intelligence has been recognized on different fora.

56. Although many developing countries have established promotional councils to organize promotional campaigns for several products, only very few have established a specific entity dealing with timber. Promotional activities should be enhanced in this direction. Such centres exist in developed countries and their experience should be made available to developing countries.

57. Producing countries which intend to enter the international markets more often than not, lack the distribution channels for their products, and this limits their capacity to develop new products and adapt them to foreign markets. Marketing arrangements with existing companies might be a way to face these problems.

10/ Prospects for the Expansion of Timber Processing Activities in Developing Countries, UNCTAD, TD/B/IPC/Timber/37, Geneva, 1982, p.16.

11/ See in particular Infrastructural and institutional obstacles to more efficient and optimal utilization, processing and marketing of tropical timber, UNCTAD, TD/B/IPC/Timber/16, Geneva, 1978.

Nomenclature, grading rules and standardization

58. The use of different names for similar species still prevails in many regions and limits the possibilities of common actions to promote their use. Considerable efforts have been undertaken towards an international tropical timber nomenclature by the International Technical Tropical Timber Association (ATIBT). There are still gaps to be filled and need for action on national, regional and international level.

59. The application of the Malaysian Grading Rules by some South-East Asian countries has certainly helped to promote exports of sawwood. This experience shows that further improvement, dissemination and uniformization of grading rules helps to improve international trade and should be promoted.

60. In the case of the use of timber for structural purposes, the development of stress grading rules seems to play a vital role for the product and market development. Some countries have already introduced stress grading methods linked with the desire to expand the use of timber for load-bearing uses, like in construction. The desirability of a more widely spread application of stress grading of hardwood is hampered by the need to increase research on the characteristics of the different species, the need to train graders and the cost of the machinery as well as the cost of calibrating and inspecting the machines and administering the quality label (in the case of machine stress-grading).

61. Standardization plays a vital role in the promotion of further processed products. In the case of plywood the large variety of sizes, qualities, technical properties, etc. in the different markets require a careful adaptation of the exporter. For producers for the local market national standards would be a way to develop markets.

62. In the case of joinery products in particular product specifications and standardization, dimensional accuracy, tolerances, moisture content and quality control have to be developed in the local market and careful consideration has to be given to them when exporting. The possibility of international action to establish standard rules for a limited number of tropical wood products which are suitable for them should be envisaged.

63. For the establishment of grading rules, the adoption of specifications and standards as well as quality control, local trade associations have a vital role to play. For this and other purposes mentioned in other parts of this paper producers and trade associations both on a national and regional level will have to be strengthened and their functions enlarged.

Points for discussion

Participants are invited to devote special attention to the following points:

- (1) What measures should be taken on an international level to introduce a system of grouping of species, and, where appropriate, to encourage international standardization in order to promote the use of the commercially less accepted species for industrial processing?
- (2) What action on national, regional and international level would be required to promote the use of wood in construction and housing through:
 - Improvement and increasing of industrial processing and building techniques;
 - Modification and adoption of building codes and regulations to allow wider use of wood?
- (3) What measures should be adopted to increase the share of processed products from developing countries in the international market?



