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UNITED NATIONS

ECONOMIC
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SOCIAL COUNCIL



GENERAL

E/CN.12/858
ECLA/FAO/UNIDO
FORIND 70/Proceedings
UNIDO-OR-410-ECLA
25 June, 1970
ENGLISH
ORIGINAL: SPANISH

ECONOMIC COMMISSION FOR LATIN AMERICA

PROPIEDAD DE
LA BIBLIOTECA

ACCOUNT OF PROCEEDINGS AND RECOMMENDATIONS OF THE
REGIONAL CONSULTATION ON THE DEVELOPMENT OF THE FOREST AND
PULP AND PAPER INDUSTRIES IN LATIN AMERICA

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INTRODUCTION

1. The Regional Consultation on the Development of the Forest and Pulp and Paper Industries in Latin America was held at Mexico City from 19 to 26 May 1970.
2. The Consultation was organized jointly by the Economic Commission for Latin America (ECLA), the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Industrial Development Organization (UNIDO), and was co-sponsored by the Mexican Association of Technicians of the Pulp and Paper Industries (ATCP), on the occasion of its Tenth Annual Meeting.
3. The Consultation was attended by representatives from the following countries in the Latin American region: Argentina, Brazil, British Honduras (Belize), Chile, Colombia, Cuba, Ecuador, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Surinam, Uruguay and Venezuela; and by representatives of the following non-Latin American countries: Australia, Canada, Finland, France, Netherlands, Sweden, United Kingdom and United States of America.
4. Representatives of the World Health Organization (WHO), the United Nations Development Programme (UNDP), the Organization of American States (OAS), the Inter-American Development Bank (IDB), the Latin American Free Trade Association (ALALC), the Central American Research Institute for Industry (ICAITI) and the Caribbean Free Trade Association (CARIFTA) also attended the Consultation as observers.
5. A complete list of these representatives appears in Appendix 1.
6. The Consultation was also attended by approximately 180 members of the Mexican Association of Technicians of the Pulp and Paper Industries.
7. At the inaugural meeting, held on 19 May 1970, Mr. Plácido García Reynoso, Under-Secretary for Industry and Commerce, welcomed the participants on behalf of the Honorary President of the Consultation, Mr. Octavio Campos Salas, Minister of Industry and Commerce of Mexico. He said that the

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problems of the forest industries and the possibilities of co-ordinating their development were matters of particular concern to Latin America, in view of the need to integrate the exploitation of forest resources and upgrade the technologies currently being used in order to meet the region's ever growing demand for forest products. In that connexion, it was encouraging that, at the Third Sectoral Meeting of the Pulp and Paper Industry (Montevideo, 16-20 March 1970), held under the auspices of ALAIC, a draft complementarity agreement covering intra-area trade in forest products had been prepared.

8. Mr. Carlos Quintana, Executive Secretary of ECLA, said that the development of the Latin American forest industries was an effective means of promoting regional development and a powerful instrument for economic and social progress. The region faced a serious unemployment problem, with 25 per cent of its working force unemployed or under-employed, and the working population growing by 3 per cent each year. The forest industries, taken together with their sources of raw material - natural forests or plantations - and the services they required, were important sources of employment and could make a very effective contribution to the decentralization of the Latin American economies by establishing nuclei for new centres of development far away from the crowded cities.

9. The forest industries could also help Latin America to increase its exports of manufactured goods. Export expansion was very much needed to pay for Latin America's growing imports and, with respect to traditional exports, to counteract increasing competition in world markets from new producers of natural raw materials and from synthetic substitutes.

10. The region must, in his view, equip its industry with selected modern techniques to enable it to compete with Europe, Japan and the United States. Specifically, more attention should be paid to expanding softwood plantations, replacing softwood species with hardwoods, and using raw materials not of forest origin, such as cane bagasse, for manufacturing pulp.

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11. He observed that, for ecological reasons, Latin America had certain advantages with respect to the manufacture of forest products. In certain areas, softwoods grew at an annual rate of 20 to 25 cubic metres per hectare, with rotations of 20 to 25 years, while in Canada, for example, the rate was only 7 cubic metres per hectare, with rotations of 45 years. Latin America could profit from this comparative advantage if it had efficient plants, suitable techniques and adequate distribution facilities.

12. He considered that technological research in Latin America should be adapted and intensified, so that it could find its own path - a path that was completely Latin American in terms of means, social and political criteria, attitudes and brain power. Unless it created the technology it needed to ensure that its development was truly Latin American, the region would run the risk of wasting its efforts, or of becoming a distorted imitation of the industrialized countries.

13. Greater efforts should be made to create integrated markets, for without such markets the countries of the region would inevitably remain weak and isolated units, instead of presenting a united front to the rich countries. And this at a time when even the rich countries themselves, despite all their economic power, were joining together to form blocs.

14. In his view, the Consultation provided a further opportunity for the United Nations to help in clarifying the economic problems of the region and establishing guidelines for useful action.

15. Mr. Börje Steenberg, Assistant Director-General, FAO Forestry Department, said that the link between forests and industry should be strengthened so that national and regional planning could be undertaken in an integrated manner. Planning must be carried out on the basis of tomorrow's technology, so as to derive maximum advantage from new techniques and machinery. Unless an integrated approach was followed,

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it was possible that man-made forests might be established to supply raw material not demanded or not usable by industries, and that wood-hungry industries might be set up to convert raw materials which was in inadequate supply.

16. In his view, Latin America's immense forest resources were capable of making a significant contribution to the economic and social growth of the region. The current substantial trade deficit in forest products pointed up the need for greater trade among the countries of the region - a trade flow which could be increased if the development of the forest industries was planned on a regional rather than a country scale.

17. Large-scale integrates - or complexes of forest industries - were needed to meet the test of economic viability. But these involved not only high capital and operating costs, but also larger markets that were available in many of the individual countries. Building these industrial complexes in stages, as, for example, setting up sawmills to which pulp and paper mills might later be added, could be done effectively only with proper planning.

18. The basic factor in such investment planning was the size of the market for the eventual produce. Noting that common markets and free-trade areas existed in Latin America, he said that the utilization of trade agreements to promote the growth of the forest industries, and thus the development of the region, ought to be an important aspect to be considered at the Consultation.

19. FAO, for its part, would help the countries of the region to ensure that country and regional plans, in both forestry and forest industries sectors, were soundly drawn up and carried out; that the indispensable links between forestry and the forest industries were maintained; and that forestry was given its proper place in over-all land use.

20. Mr. Aguilar Bolaños, representative of UNIDO, said that the Consultation would make an important contribution to industrial progress in Latin America, and noted that the region was in a privileged position as regards the forest and pulp and paper industries.

21. Mr. Jaime Reyes Montoya, President of ATCP, welcomed the participants on behalf of the Mexican Association of Technicians of the Pulp and Paper Industries. It was a matter of particular satisfaction to the ATCP that the Consultation was being held in conjunction with its Tenth Annual Meeting.

22. At the close of the inaugural meeting, the following officers were elected:

Chairman:	Mr. Plácido Garofa Reynoso (Mexico)
First Vice-Chairman:	Mr. Jorge Catepillán (Chile)
Second Vice-Chairman:	Mr. Joseph Tyndall (CARIFTA)
Rapporteur:	Mr. Salvador Carrasco (Mexico)

23. The provisional agenda before the Consultation was adopted. The agenda as adopted appears in Appendix 2.

24. Drafting committees were established and discussion leaders appointed for each substantive item of the agenda. The composition of the drafting committees is shown in Appendix 3.

25. The report of the Consultation was adopted on 26 May 1970.

I. RAW MATERIALS FOR FOREST INDUSTRIES IN LATIN AMERICA:
POTENTIAL AND PROBLEMS

(a) Wood

1. The Consultation reviewed the raw materials situation for the development of forest industries in Latin America on the basis of Secretariat paper I A.
2. The attention of participants was drawn to the fact that, while Latin America had 900 million hectares of forest resources (one of the largest reserves in the world), its net deficit in respect of forest products currently amounted to some 300 million dollars annually.
3. The region's forest resources comprised extensive natural forests, chiefly hardwood species (876 million hectares), with some softwoods (22 million hectares) and plantations (slightly over 2 million hectares).
4. The Consultation noted that the region made very inadequate use of its forest resources, and that around 85 per cent of all wood extracted from forests was used as firewood.
5. The Consultation showed great interest in the possibilities of utilizing mixed tropical forests, which account for 70 per cent of the region's total wood reserves. The Consultation believed that one of the best ways of valorizing such forests would be to establish integrated industries of a suitable size, so as to take advantage of economies of scale. The Consultation was also informed of recent advances in the study of forest resources, using a combination of forest inventory and wood technology studies of the various species. This method, together with the use of appropriate techniques, was making it possible to overcome the difficulties formerly involved in utilizing tropical forests with a large variety of species.
6. The Consultation recognized that the region's forest industries would require large amounts of wood in the future to be able to cover all their needs, and considered it unlikely that the supply from coniferous

/forests would

forests would be adequate over the short and medium term. In this connexion, the attention of the Consultation was drawn to the urgent need to bring into use those areas of coniferous forest in the region which were not yet being adequately drawn upon on a permanent basis, and to the advisability of undertaking reforestation on a massive scale, in view of the exceptionally favourable ecological conditions of certain areas in the region which had an abundance of suitable land and an adequate supply of labour. The Consultation recognized that financing was the main problem with regard to the establishment of plantations, since the region had an ample fund of experience in plantation methods and in selecting the species most suitable for particular areas.

7. There was general agreement among participants that, for the most part, existing forest industry had not demonstrated sufficient flexibility and initiative in seeking to improve the utilization of the region's forest resources, and that efforts had been confined to copying the methods and techniques used in the developed countries, where the problems were different from those in Latin America. Fortunately, the region had shown some signs of progress in the development of technology in recent years, which made the future prospects look brighter. An example of this was the establishment of pulp plants in Brazil and Colombia using mixed tropical woods.

8. The Consultation emphasized that governments had the major responsibility for managing national forests and ensuring that privately owned forests were utilized rationally. For this purpose, it was essential to have a high quality forest service, equipped with financial means and staff consonant with the size of the natural resources it had to supervise. It was also stated that governments should assist in training the professional and technical staff needed to implement forest policy measures.

9. The Consultation approved the following recommendations:

- (a) The terms of reference of the ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America should be expanded, with a

/view to

view to ensuring that planning for the integrated development of forests and of the forest industries was closely co-ordinated.

- (b) International financial institutions should make credit available on the most favourable terms possible for the expansion of Latin America's forest plantations.
- (c) FAO should make a comparative study of existing forest legislation in Latin America and of the results of the application of the various types of legislation, and should develop integrated technical training programmes comprising courses at periodic intervals in the various countries of the region. FAO should also collect, bring up to date and disseminate on a wide scale all data that would help to increase knowledge about the management and use of forests, with special reference to mixed hardwood forests.
- (d) In view of the close relationship between the forest resource and industries based upon it, governments should implement democratic and integrated planning programmes, linked with national development plans, to promote the improved use of forests, in order to ensure that forest resources are utilized on a permanent basis.
- (e) Governments should foster greater public and individual awareness in order to facilitate the implementation of a dynamic forestry policy in line with human rights, and with the national interest and the social needs of each country. They should provide fiscal incentives to forest industries engaged in or co-operating in the development of new technologies aimed at widening the utilization of the region's forest resources.
- (f) In promoting the development of forest industry, governments should include the necessary measures in their forestry policy to ensure that there is a guaranteed supply of raw materials over a substantial period of time, and that industry undertakes the technical management of forest resources allocated to it.

/(g) Governments

- (g) Governments should take such measures as they deem appropriate in order to encourage the manufacture of finished or semi-finished products in the country of origin, so that few if any forest products are exported in their raw state.
- (h) Governments should review their forestry legislation and provide guarantees and incentives to promote the development of forest industries.

(b) Bagasse

10. The Consultation reviewed the supply of bagasse for the production of pulp and paper on the basis of Secretariat paper I B.

11. The Consultation noted that, since Latin America was responsible for some 60 per cent of world production of crude cane sugar, bagasse was of great importance to the region as an industrial raw material. Latin America had a comparatively large number of industrial plants using bagasse, which manufactured a wide variety of products, chiefly pulp, paper, boards and furfural.

12. Even so, as some participants pointed out, no more than approximately 5 per cent of the bagasse produced in the region was being transformed into manufactured products, which meant that possibilities for increasing its use were very promising.

13. The discussions that followed made it clear that the basic value of bagasse was the cost of fuel used to replace it in mill power boilers, and that its fuel replacement value was dependent, inter alia, upon (a) the fuel used (oil, gas or coal); (b) the thermal efficiency of the bagasse-burning boilers, which was affected by the moisture and fibre content of the bagasse; and (c) the thermal efficiency of the boilers using the replacement fuel, which depended on the particular characteristics of the boilers. In addition, the cost of bagasse and its fuel replacement value depended in large measure on the cost of operations required in order to use it for other purposes (depithing, handling, transport, etc.).

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14. The Consultation approved the following recommendations:
- (a) Since not all the bagasse produced in the region can be utilized economically, careful analyses should be made, by means of technical and economic studies, to determine how much bagasse is available for specific industrial projects, particularly in view of the fact that it is not possible to establish realistic average values for such factors as the sugar and fibre content of cane, yields per hectare, and the ratio between bagasse used and sugar produced, for these vary not only between regions in a single country but also between one harvest and the next in the same sugar plantation.
 - (b) Since, in practice, conditions vary greatly between one sugar mill and another, and also since the fuel equivalent factor and the value of bagasse as a fuel are also very variable, calculations should be made in a realistic manner for each individual case, so as to avoid generalizations that do not reflect conditions in many areas.
 - (c) Since local conditions, scales of production and the goods to be produced are factors of fundamental importance, they should be examined with great care, in the light of the individual requirements of each project, for these factors may have a considerable influence on project viability.
 - (d) In so far as possible, governments, international organizations, enterprises and financial institutions should take advantage of the region's technical resources and special skills to undertake studies designed to solve the problems arising in the industrial use of bagasse, including the question of making increased use of bagasse in the manufacture of pulp and paper.

/II. DEVELOPMENT

II. DEVELOPMENT OF THE SAWMILLING INDUSTRY IN LATIN AMERICA

1. The Consultation reviewed the development of the sawmilling industry on the basis of Secretariat Paper II.
2. The Consultation was informed that Latin America's 900 million hectares of forest land were currently producing approximately 42 million m³ of industrial roundwood annually, of which more than 60 per cent were sawlogs. However, the sawmilling industry had not yet developed to the extent that might have been expected. Despite the abundant supply of raw material resources, sawnwood production increased by only 2 per cent annually on average, as compared with an annual population increase of 3 per cent.
3. The Consultation was advised of measures that should be adopted, particularly in native forest areas, in relation to the intensification of forest inventory work, building more access roads, rationalizing logging operations by introducing a higher degree of mechanization, and bringing more species into use through technological and marketing research.
4. The Consultation agreed that the industry's installed capacity should be better utilized, not only through better systems for supplying the raw materials, but also through reorganizing and modernizing existing mills.
5. Participants drew attention to the great need for more skilled personnel, at all levels, in logging and sawmilling.
6. The Consultation considered the fact that consumption of sawnwood had dropped from 68 m³ per 1,000 inhabitants in 1956 to about 52 m³ in 1967, and concluded that this negative trend could perhaps be reversed by (a) improving the quality of the sawn product; (b) reducing the sales price of the product; (c) wider application of grading rules; (d) establishing better distribution systems; and (e) increasing the uses of sawnwood through impregnation and other improvements.

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7. Although the trade balance had shown an improvement in recent years, the Consultation considered that it could certainly be improved even further, providing regional production expanded and exports to other regions were more actively promoted.

8. With a view to expanding exports to other regions, the participants discussed various measures, inter alia, the introduction of new species in the world market, the use of grading and product control systems and the establishment of joint machinery, for export marketing and shipping.

9. The Consultation approved the following recommendations:

- (a) The authorities should allocate the necessary funds to the administrative agencies responsible for enforcing compliance with forest laws.
- (b) Co-operation and collaboration between governments and private enterprise in the region should be increased in order to secure proper co-ordination of research designed to promote wider and better utilization of Latin America's forest resources.
- (c) A greater effort should be made at the national and international levels to increase and improve training facilities for personnel at all levels, in particular with a view to the formation of a skilled labour force.
- (d) Research into the physical and mechanical properties of timber and into the drying and, in particular, the preservation of wood should be intensified, in order to promote and broaden market opportunities.
- (e) The ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America should plan and carry out a specific study of the utilization of sawmill residues, with a view to developing their industrial use.
- (f) Countries or groups of countries in the region, in collaboration with the Advisory Group should undertake further studies of the sawmilling industry, to be used by governments in formulating appropriate policies for the expansion of the industry in the Latin American countries.

/III. DEVELOPMENT

III. DEVELOPMENT OF THE WOOD-BASED PANEL INDUSTRY IN LATIN AMERICA

1. The Consultation discussed the development of the wood-based panel industry in Latin America on the basis of Secretariat Paper III.
2. The Consultation was informed that, in 1967, seventeen Latin American countries were producing plywood, fifteen were producing particle board and eight fibreboard. With a total of some 234 mills between them, these countries accounted for an over-all estimated production capacity for wood-based panels of around 1.2 million tons per year. Plywood accounted for roughly half this total, and particle board and fibreboard for about 30 per cent and 20 per cent respectively. Four countries alone (Argentina, Brazil, Mexico and Venezuela) accounted for no less than seven-tenths of the Latin American total.
3. The Consultation noted that a major reason for the extremely small production of wood-based panels in Latin America were that suitable forest areas were not easily accessible; that securing raw material supplies from these forests and transporting them to processing factories was expensive; that unsuitable methods were being used to exploit forests; and that, little use was being made of processing residues.
4. The Consultation was informed that in 1975 Latin America was likely to need twice the quantity of wood-based panels that it had consumed in 1967, and five times that quantity by 1985. Yet in 1968, despite its vast forest resources, the region's share of world production was only 1.7 per cent for plywood, 3.1 per cent for fibreboard and 2.3 per cent for particle board. The corresponding figures in 1957 were 2 per cent, 2 per cent and 1.06 per cent, respectively.
5. Trade in wood-based panels, the Consultation was informed, had continued to increase since 1963, but the 1969 export surplus of slightly more than one million dollars was not very large, given the size of the region's timber resources.

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6. The Consultation noted that, because of the wide variety of physical characteristics of the raw material (wood) available from the type of forest predominant in Latin America, the most rational basis for programmes to utilize these forests might be the organization of integrated forest industry enterprises, producing lumber, veneer, blockboard, hardboard, particle board and pulp and paper products. Development of integrated operations would, in turn, make adequate resource management planning possible and ensure the best utilization of the region's vast natural resources without destroying or degrading the production capacity of the land. It was stated that international, national and private organizations should devote more resources to the development of integrated enterprises.

7. In its consideration of the development of local markets, the Consultation noted that the wood-based panels industry in Chile was tied directly to the furniture and housing markets. Trends in these two markets greatly influenced the market potential for panel products. Consequently, every effort should be made to increase the use of wood and wood-based panels in the construction of housing and other buildings, such as schools, government offices, industrial plants, etc. and in the furniture, transportation, packaging, display, do-it-yourself and other markets.

8. In considering the export market situation, the Consultation emphasized that it was necessary to meet the quality standards and specifications of the importing countries; to have guarantees of continuing production to meet long-term contracts; and to anticipate the changes in colour, texture and finishes dictated by style changes in furniture, wall panels, and the like. The Consultation also pointed out that all these requirements must be recognized and fulfilled if export markets were to be developed and maintained.

9. A number of participants drew attention to problems that had been encountered in the production of wood-based panels. The variability of the raw material base posed a continuing problem for the selection and use of wood species employed. The high cost of adhesives and binders had virtually precluded the production of wood-based panels in some cases and further research was needed to provide inexpensive resins based on locally available raw materials.

10. Trained personnel to operate and maintain the highly specialized imported equipment required for manufacturing panel products were in short supply in the region, and a large amount of training would be needed. Variations in the quality of wood-based panels and a high percentage of waste were often the result of an inadequate supply of skilled operators and process supervisors.

11. The Consultation recognized that among the fundamental obstacles impeding the development of the panel-products industries in the region were high costs compared with competing products and a lack of co-ordination regarding: (a) quality standards and specifications; (b) units of measurement and nomenclature; (c) production statistics; and (d) market development procedures.

12. The Consultation therefore strongly recommended that, under the auspices of governments and industry, and with the co-operation of the international agencies (ECLA/FAO/UNIDO) and national trade associations concerned, the possibility should be explored of establishing a "Co-ordinating Centre for Latin American Wood-Based Panel Industries" to provide technical, marketing and sales promotion information to member countries. The Centre would serve as a mechanism through which standards and broad guidelines for the development of the panel industries could be formulated and promulgated, and information disseminated. One of the Centre's specific activities could be to review national policies, including tariff barriers regarding synthetic adhesives or binders (or components employed in their manufacture) which currently inflated manufacturing costs in some countries in the region.

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13. The Consultation also recommended that:
- (a) The Latin American governments should revise their policies relating to imports of adhesives or raw material for adhesives, so as to reduce the production costs of wood-based panels; they should also review their existing policies with regard to such products, with a view to promoting and increasing overseas sales.
 - (b) ECLA, FAO, and UNIDO should promote research and evaluation projects on adhesives, and the possibilities for their replacement, in order to reduce or eliminate imports of adhesives by the countries of the region. Member governments and industry should be informed of the results of such studies.
 - (c) The sponsoring agencies, in collaboration with the UN Centre for Housing, Building and Planning, should examine the possibility of expanding the ECLA/FAO/UNIDO Advisory Group for Latin America to include specialists in the use of wood in housing and other construction. This would assist in promoting the increased consumption of wood-based panels and in finding solutions to problems connected with the use of wood in housing.
 - (d) Machinery should be established, in co-operation with the Pan American Committee on Technical Standards (COPANT), with a view to promulgating uniform regional standards, in order to facilitate and expand Latin American exports of wood-based panels. Such standards should cover the following:
 - (i) The nomenclature and units of measurement used in the wood-based panel industry.
 - (ii) The quality of raw materials used in the manufacture of wood-based panels.
 - (iii) The specifications of finished products, by end use.

/(e) The

- (e) The appropriate industrial and trade associations in the region should examine the possibility of establishing a regional organization embracing all wood-based interests, whose main objective would be the exchange of information and experience relating to the manufacture and marketing of such materials.
- (f) The ECLA/FAO/UNIDO Forest Industries Advisory Group should intensify its activities with respect to marketing studies on wood-based panels and specifically, make a study of the demand for such products with a view to providing guidelines regarding type of plant and minimum economic size.
- (g) Governments and industry should plan the development of forest industries within the context of integrated industrial complexes, so that the heavy capital investment required to create the necessary infrastructure may be distributed between the government and the various industries, in the light of the particular circumstances of each individual country. In addition, governments and industries should try to obtain international financing for such infrastructure, since it takes a long time for the high cost to be recovered.

IV. WORLD PULP AND PAPER PRODUCTION, CONSUMPTION AND TRADE,
WITH SPECIAL EMPHASIS ON LATIN AMERICA.

1. In reviewing world pulp and paper production, consumption and trade, the Consultation based its discussions on Secretariat Paper IV.
2. The Consultation noted that, although Latin America's pulp and paper industry was relatively small in world terms, its percentage share of the world total was on the increase. Regional demand had amounted to almost 2 million tons of pulp and 4 million tons of paper in 1967, and it was expected that it would amount to 4 and 7 million tons respectively by 1975.
3. It was noted that, while the number of small non-integrated plants in the region was unusually high and the stock of equipment was extremely old, the main bulk of production was concentrated in a small group of efficient and modern plants.
4. The Consultation agreed that, owing to the rapid rate of growth of the production of both pulp and paper, the industry was now one of the region's more dynamic manufacturing industries. Nevertheless it still had an unfavourable trade balance of some size and, despite the considerable increases in regional capacity planned and under way, the paper deficit in the region would be even greater in 1975, mainly on account of a shortfall in the production of such papers as newsprint and kraft.
5. In its consideration of operating conditions in the pulp and paper industry, the Consultation emphasized the need to improve the utilization of installed capacity, since it considered that plants were operating at only 70 per cent of capacity. The Consultation also stressed the importance of taking advantage of economies of scale, in view of the fact that in 1967 only 26 of the 640 pulp and paper plants in the region had an annual capacity exceeding 60,000 tons.

/6. There

6. There was general agreement that prerequisites to a reduction of the currently high production costs in Latin America were modernization of equipment, greater use of plant capacity and better plant integration, specialization, and the more efficient employment of labour.
7. The Consultation agreed that the ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America was making a valuable contribution with respect to projects for expanding the pulp and paper industry. Several participants were of the opinion, however, that the work of the Group would be even more useful if all countries in the region could be kept regularly informed not only about projects for new pulp and paper mills within Latin America but also about progress in their development. This would help to make regional planning of pulp and paper development more effective.
8. The Consultation called upon FAO to develop basic general criteria for analyzing projects for the manufacture of pulp and paper, with a view to standardizing the framework for securing financing for such projects. The Consultation also considered that FAO should give more attention to studies of demand elasticities for the different paper grades.
9. In discussing the market situation, several participants observed that it was not absolutely essential to achieve self-sufficiency before endeavouring to expand exports, since Latin America had very real opportunities for broadening its overseas markets in some products, especially short-fibre pulps. In order, however, to secure a proper expansion of its export trade, the region would have to correct certain inherent weaknesses, such as inadequate infrastructure, high freight rates and poor port facilities. The Consultation considered that the excessively high customs tariffs for all pulp and paper products except newsprint, which prevailed virtually throughout the entire region had led to the establishment of plants with a very uneven level of efficiency; accordingly, it was necessary to lower intra-regional tariffs.

10. One participant was of the view that tariffs should be applied to discourage imports of waste paper, in order to promote the production of short-fibre pulp in the region. Another participant considered that imports of waste paper should be completely free of duty since, if they replaced imported pulp, the net result might be a saving of foreign exchange.

11. The Consultation approved the following recommendations:

- (a) Governments should encourage and wherever possible have market studies undertaken to provide proper guidance for enterprises producing pulp and paper in the region.
- (b) Governments, international agencies, and enterprises should intensify their efforts with regard to technological studies designed to increase the region's use of tropical woods in the manufacture of pulp and paper.
- (c) The ECLA/FAO/UNIDO Forest Industries Advisory Group should update and disseminate available information on the dissolving pulp industry in the region as soon as possible.
- (d) Research work should be stepped up by existing laboratories in the region, in order to identify the different wood species in the countries of the region that are suitable for the production of pulp and paper.
- (e) The ECLA/FAO/UNIDO Forest Industries Advisory Group should examine the possibility of establishing standard criteria for determining the installed capacity and actual production in individual pulp and paper plants.
- (f) The Pan-American Committee on Technical Standards should make renewed efforts to complete the work it is doing on pulp and paper standards, especially with regard to the nomenclature for pulp and paper products.

/(g) A

- (g) A number of participants representing Latin American countries recommend that those countries which are party to the Montevideo Treaty should, as soon as possible, sign the protocol of the complementarity agreement for the pulp and paper industries approved during the Third Sectoral Meeting of ALALC, held at Montevideo,, Uruguay, in March 1970.
- (h) Governments should provide a full range of facilities and incentives for the decentralization and suitable relocation of industries, where and when such measures are deemed necessary and advisable. Similar incentives should be granted to industries seeking to replace obsolete equipment.
- (i) Government should study the possibility of establishing multinational enterprises financed by regional capital and situated in the country offering the greatest comparative advantage.
- (j) Governments should grant tariff reductions on intra-regional trade in pulp and paper products in order to stimulate effective competition.
- (k) Given the fund of expert technical knowledge available within the region of Latin America's particular problems with respect to natural resources and raw materials for the forest and pulp and paper industries, governments, international agencies and financial institutions should, unless special circumstances dictate otherwise, entrust the technical and economic studies to find a solution to such problems to Latin American experts.

V. AN APPRAISAL OF THE NEWSPRINT DEVELOPMENT
OPPORTUNITIES IN LATIN AMERICA

1. In reviewing the opportunities for newsprint development, the Consultation based its discussions on Secretariat Paper V and its annexes. During the debate, reference was also made to the other Secretariat papers before the Consultation.
2. The Consultation emphasized the special importance of newsprint production to the countries of the region, which was characterized by a large and growing shortfall estimated to reach about 100 million dollars in 1970. Since the industry had not expanded since 1965 and no new mills had been constructed or were under construction, unless there was a fundamental change in the development policy of the kind proposed by the Consultation, it would in all probability be several years before there would be any material increase in production capacity.
3. The Consultation recognized the great value of a regional analysis of the problems of newsprint production, consumption and trade. However, since the technical, economic and political content of Secretariat Paper V had provoked serious objections from the majority of the participants, it was formally requested that it should not be considered a secretariat document and that it should be thoroughly revised before its possible publication. It was emphasized that the document was a preliminary text, that the views expressed were those of its authors and did not necessarily represent those of the sponsoring agencies, and that its distribution was limited to participants.
4. In view of the fact that such countries as Brazil and Argentina were manufacturing, and had also exported, newsprint produced from eucalyptus and/or poplar, and considering the successful industrial experience achieved by Italy with poplar and Australia with eucalyptus, it was proposed that raw materials other than coniferous raw materials should not be classified as "secondary raw materials". This classification had

/been rendered

been rendered unnecessary by the rapid development of manufacturing techniques, and by the definitions of newsprint adopted at the FAO meetings at Tokyo in 1960 and at Cairo in 1965. It was stated, however, that this was in no sense meant to detract from the importance of continuing to develop coniferous plantations.

5. In reviewing the main reasons hampering the development of newsprint production, many participants made mention of the lack of suitable systems to promote the regional industry and provide protection against the unfair price and marketing policies applied by major exporters, a fact that was corroborated by the data in Secretariat Paper IV, prepared by the ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America, entitled "World Pulp and Paper Production, Consumption and Trade, with special emphasis on Latin America".^{1/} It was also stated that systems to promote and protect the newsprint industry were being applied in more developed regions.

6. Accordingly, the Consultation recommended, as its first and major recommendation, that governments should, as soon as possible, establish a system to provide the protection essential to ensure the stability and security required for the development of the newsprint industry in the region. Due regard should be paid to the interests of consumers with respect to both quality and price, given that the price of newsprint should be related to the prevailing economic situation and cost structure. The representatives of Canada and the United States stated that they did not support this recommendation.

7. It was stated that another way to eliminate unfair trade practices would be to establish, where so permitted, non-profit sales organizations of newsprint producers of the major exporting countries that would ensure normal marketing conditions.

8. The Consultation also recommended that the Latin American countries that had only a small amount of coniferous resources or had not yet assessed their potential, but which possessed other relatively low-cost

^{1/} See pp. 39 and 54 of Secretariat Paper IV.

fibre raw materials, should, as soon as possible, undertake specific projects which were technically and economically feasible for the production of newsprint.

9. The attention of governments was drawn to the fact that the ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America was available to assist them in technical and economic research work into the utilization of local raw materials in the manufacture of newsprint; and that official requests should be transmitted to the United Nations Development Programme with a view to obtaining the appropriated allocation of funds.

/VI. PACKAGING

VI. PACKAGING PAPER DEVELOPMENT IN LATIN AMERICA

1. In reviewing packaging paper development, the Consultation based its discussions on Secretariat Paper VI.
2. The Consultation was informed that, in the 22 Latin American countries surveyed, 54 per cent of the paper consumed was used for packaging; that the consumption of paper-based packaging materials had increased at an average annual rate of 12.8 per cent between 1960 and 1967, when it amounted to 2 million tons; that per capita consumption of non-converted material had reached an average of 9.1 kilogrammes in 1967; and that 40 per cent of total consumption was in the form of corrugated boxes, and 14 per cent in multiwall paper sacks.
3. The region was 80 per cent self-sufficient in terms of non-converted paper production and 99 per cent in terms of converted paper-based packaging products. The export trade was negligible, and the region imported 20 per cent of its paper requirements for conversion to packaging (460,000 tons in 1967), mainly kraft liner and kraft paper for sacks.
4. The increasing volume of imports highlighted the need to step up the utilization of local raw materials, a major material in this respect being bagasse. The Secretariat Paper drew attention to the fact that, when using local raw materials, it was not always necessary to aim at achieving the same specification levels as in the imported products being replaced.
5. In contrast to a capacity utilization of 80 per cent in the production of packaging papers, the converting industry, which was largely composed of individual non-integrated plants, used only 34 to 55 per cent. Consequent high production costs were an obstacle to the expansion of export trade, and made paper-based products even more vulnerable to increasing pressure from competitive packaging materials, especially polyethylene films.

6. The Consultation was advised that demand was likely to double between 1967 and 1975 and then double again between 1975 and 1985, with consumption of packaging paper and board estimated to amount to 4 million tons in 1975 and 8 million in 1985. The share of packaging paper in total consumption was expected to increase beyond its present level of 54 per cent, and it was anticipated that there would be a deficit of 260,000 tons in kraft liner, fluting and kraft sack paper by 1975.

7. The Consultation considered that the packaging industry should be developed in concert with all the other forest industries in order to utilize local resources and make the maximum contribution to the economies of the region. It discussed the rationalization and interregional integration of the converting industry itself, and the vital aspects of products development and marketing against the background of the large unutilized converting capacity in the region, and the contrast between increasing imports of kraft paper and expanding market demand.

8. The Consultation stressed that increased use should be made of local raw materials and other locally available resources; that production costs should be reduced through integration and rationalization, by concentrating production at the sources of raw materials and developing intra-regional co-operation and trade; that market surveys and analyses were of primary importance to the entire production-processing-converting-marketing chain; that there was a need for national and regional standards; that national and regional industry-based associations should be established and developed; and that further technical facilities for research and development and application were needed in the region on a regional and a sub-regional basis.

9. The Consultation approved the following recommendations:

- (a) The ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America should look into the possibility of establishing a statistical centre for Latin America which could collect, analyse and disseminate relevant data on regional production and trade in paper-based packaging materials.

/(b) The

- (b) The Advisory Group should undertake a survey in order to determine which export markets outside the region might be open to paper-based packaging materials produced within the region, and what steps industry should take in order to take advantage of export market opportunities.
- (c) In view of the importance to Latin America of paper packaging materials, the Advisory Group should request the Pan American Committee on Technical Standards to give preference to the development of nomenclature, testing methods and specifications for these products, having regard to the urgent need to replace existing criteria which are not in line with the regions's circumstances and possibilities.
- (d) Governments, and FAO and ILO, should promote technical training programmes for the paper-based packaging industry in the region.
- (e) The Advisory Group should survey the facilities available in the region for process and product development of paper-based packaging materials utilizing local raw materials and assess the need for their expansion.
- (f) Governments, ECLA, FAO and UNIDO should encourage and assist the countries of the region to establish and develop national packaging associations and a regional federation of such associations.
- (g) The governments of the Latin American countries should consider gravity preferential treatment to goods exported in regionally produced packaging.
- (h) The Advisory Group should study the integrated development of the corrugated-box industry at the national and/or intra-regional level, with special reference to present and potential fruit-exporting countries. In this connexion, the governments of the region, in particular the members of ALALC, CARIFTA, and the Central American Common Market, should explore the possibility of applying tariffs to kraft liner and fluting similar to those currently in force for kraft pulp within ALALC.

/(i) The

- (i) The Advisory Group should undertake feasibility studies relating to the establishment of multinational subregional packaging material enterprises based on local raw materials, with a view to the joint utilization of such resources.
- (j) Latin American countries which are members of ALALC should support the draft agreement on surpluses and deficits formulated at the Third Sectoral Meeting on the Pulp and Paper Industry, held under the auspices of ALALC at Montevideo in March 1970, and take action thereunder to increase sales of both paper-based packaging materials and regional raw materials.
- (k) The Advisory Group should update and complete Secretariat Paper VI as soon as possible, and include in it data on the Caribbean countries.
- (l) The advisory Group should carry out a study of the problems of the packaging of wool, with a view to replacing jute sacking with woven paper string.
- (m) International agencies, especially FAO, ECLA and UNIDO, should undertake studies as soon as possible to determine the technical staff requirements of each Latin American country in the field of forest industries; and governments should make available the necessary means for training such staff as quickly as possible.

/VII. THE

VII. THE OVERSEAS EXPORT POSSIBILITIES FOR SELECTED
LATIN AMERICAN FOREST PRODUCTS

1. In reviewing export possibilities for forest products, the Consultation based its discussions on Secretariat Paper VII.
2. The Consultation was informed of the research undertaken on market prospects for the following products: Chilean Radiata pine, sawn hardwood from the Tumaco area of Colombia, and Paraguayan veneer. Stress was placed on the importance of seeking new potential markets, both inside and outside the region. It was noted, however, that in the cases studied a number of obstacles common to the majority of Latin American countries would have to be overcome, such as high product and transport costs, which were partly attributable to inefficiency in the processing and handling of wood.
3. Participants were advised that success in launching a new product whose characteristics were not well known in export markets mainly depended on giving wide publicity to its inherent technical properties and ensuring constant quality. In many cases, it would be necessary to create a demand for a new product by means of publicity campaigns or specially low initial prices.
4. Participants made special reference to the fact that the high cost of freight had a marked effect on exports, owing, in some cases, to the inadequacy of the infrastructure. In addition, the dispatch of exports was hampered by complicated and costly administrative formalities. To overcome these problems, it would be necessary to improve and make more efficient use of port facilities, and to reduce embarkation costs. In this connexion, consideration might even be given to establishing ports specializing in the export of wood products, to which several countries in the region would have joint access.
5. The Consultation heard that associations or voluntary co-operatives in a number of countries used quality and quantity specifications in handling and marketing all their wood products, and were also responsible for promoting new products.

/6. The

6. The Consultation considered the advisability of establishing a regional marketing agency for tropical forest products.
7. Participants expressed their concern at the small volume of intra-regional trade in forest products, which was mainly the result of high transport costs and the complexity of export formalities. It was suggested that the various free-trade associations in the region (ALALC, CARIFTA, the Andean Group and the Central American Common Market) should, in conjunction with United Nations agencies, study how these problems might best be solved.
8. The Consultation noted that poor handling throughout the entire production and transport process had serious and unfavourable implications for future exports of forest products.
9. The Consultation approved the following recommendations:
 - (a) Countries exporting forest products should establish clearly defined standards for quality and measurement that meet the requirements of international markets. In this respect it is essential to establish national associations specifically responsible for this task, whose work might be co-ordinated by a regional agency, the establishment of which should be promoted by the ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America.
 - (b) A symposium should be organized in the near future for the countries of the Amazonas basin, with a view to determining the areas potential for wood exports. Account should be taken of such points as non-selective utilization, handling, marketing, and research into little known species.
 - (c) Studies similar to those included in Secretariat Paper VII covering three countries of the region should be made of the other Latin American countries, in order to determine the export possibilities for their forest products.

/(d) The

- (d) The appropriate agencies of the United Nations should carry out an evaluation of the problems prevailing in Latin American ports, with a view to improving facilities for the handling of wood and forest products.
- (e) The appropriate agencies should explore the possibility of establishing an inter-American fund to assist in the financing of forest industries and associated facilities.

VIII. THE CASE FOR INTEGRATING FOREST INDUSTRIES

1. The Consultation discussed the benefits and problems of integrating the forest industries of Latin America on the basis of Secretariat Paper VIII.

2. The Consultation was informed that the technical integration of industrial plants could lead to the following benefits: (a) maximum use of the forest resource, including optimum breakdown between sawlogs, veneer logs and pulpwood; (b) full use of residues; (c) freedom to balance the cost and quality of intermediate products, so as to achieve maximum benefit from the over-all integrated operation; (d) simplified processing through vertical integration; (e) reductions in service and administrative costs; (f) improved cost-benefit ratio of infrastructure development.

3. Over-all integration could also help to improve marketing situations, lower shipping costs, improve the strategic position of the forest industries through integrated raw material supply, and widen the base of economic and social benefit through the integration of related economic sectors.

4. The Consultation noted that, although there were some examples of integration within the Latin American forest industries, the over-all degree of integration was rather small. There were a number of serious problems impeding the development of integration. Large markets, heavy capital investment and adequate quantities of raw materials, which were essential for the establishment of forest industry integrates, were often difficult to achieve within the present national boundaries. The technical knowledge to ensure maximum utilization of heterogeneous mixed tropical forests was lacking. The markets for products from such forests had not been adequately developed, and there was little knowledge of the forest management techniques most suitable for them. In addition, indiscriminate development in the past and the current lack of proper land-use planning made it especially difficult to plan for the integration of forest resources and forest industries.

/5. The

5. The Consultation approved the following recommendations:
- (a) International agencies, such as FAO, should recommend that the International Bank for Reconstruction and Development and the Inter-American Development Bank should make available increased financing for developing integrated forest industries in the Latin American countries.
 - (b) The ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America should compile data on the experience of countries outside the region in joint consignments of exports by groups of enterprises, with a view to making Latin American products more competitive on world markets.
 - (c) FAO should make a systematic study of ways and means of making better use of waste products, not only those produced by industrial plant, but also those produced in the utilization of forests.
 - (d) At future regional consultations of a similar kind, the maximum contribution should be sought with respect to documents prepared by Latin American experts or professional associations.
 - (e) Governments of the region should take the necessary steps as soon as possible to promote the regional integration of the supply of the forest products industries, as a means of enabling them to compete with countries outside the region.
 - (f) All countries, irrespective of their ideology, should have access to all the technical information that international agencies and the governments of the region have at their disposal, and such information should be made available to them with greater dispatch.
 - (g) The international agencies should develop an over-all strategy for securing maximum utilization of the world's human and natural resources.

IX. PROSPECTS FOR FOREST INDUSTRIES DEVELOPMENT
IN LATIN AMERICA

1. The Consultation considered the prospects for forest industries development in Latin America on the basis of Secretariat Paper IX.
2. The Consultation agreed that the methodology used in the paper, which distinguished three different areas (raw materials, markets and profitability), was very satisfactory.
3. It was stated that the inadequate development of the infrastructure in many countries of the region limited the use of forest raw materials. Moreover, owing to the high cost of providing the necessary infrastructure and of achieving a large enough scale for profitability analyses of projects in the forestry sector, the profitability to the private sector of many projects was very low or even a negative quantity.
4. It was observed that economic appraisals of forest industries development should take account of social aspects from the standpoint of the particular country concerned; otherwise they might be incomplete and distort any decisions that were taken.
5. Governments commonly granted exemptions from taxation or other subsidies to private enterprises to compensate them for the favourable direct or indirect effects produced by forestry development schemes in the social sphere that did not benefit such enterprises directly. A classic example of this was the reforestation of uninhabited land.
6. Given the high level of unemployment in the region, the Consultation considered that the growth of the forest industries could have a very important effect on employment levels in rural areas.
7. It was noted that it might be useful to study new methods of economic organization that would make it possible to incorporate labour into the forest industries, based on co-ownership of resources by means of co-operatives or other types of association.
8. In considering the future activities of the ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America, the Consultation discussed the Group's methods of operation, structure, functions and status and
/concluded that

concluded that the Group should intensify its activities, in view of the fact that at the current stage the forest industries fell so far short of their possibilities.

9. The Consultation noted the need for seeds of high genetic quality for planting programmes in Latin America, and the advisability of establishing a tree centre for the Caribbean, with headquarters in Cuba, using the funds pledged by the Cuban Government (1 million pesos over ten years).

10. The Consultation approved the following recommendations:

- (a) Governments, research institutes and international agencies should give preference in their study and research work at the technical and economic levels to expanding the use of non-traditional raw materials, such as mixtures of tropical woods, eucalyptus and bagasse, in the manufacture of newsprint, pulp and packaging paper. Efforts should also be made to ensure that the assistance furnished by the industrialized countries is channelled towards its development of appropriate techniques.
- (b) The ECLA/FAO/UNIDO Forest Industries Advisory Group for Latin America should evaluate the labour requirements for forestry development in the region.
- (c) Governments and industries in the region should take such measures as are necessary to establish a market for professional skills that is capable of attracting and retaining Latin American technicians within the region.
- (d) Latin American governments should give special consideration to the standardization and improvement of statistics on the production of the forest industries and the marketing of forest products. This would provide the necessary basis for proper planning of the development of the forest industries.

/(e) International

- (e) International agencies, with the support of governments, should strengthen the financial and human resources of the Advisory Group to enable it to undertake the many important tasks that need to be carried out in the region.
- (f) FAO, ECLA and UNIDO should establish as standard procedure the participation and collaboration of regional technical personnel in their studies, so as to ensure that a close and realistic contact is maintained with regional conditions.
- (g) Considering the value which can be derived from a permanent exchange of technical and economic information and experience in the fields of forestry and the forest industries, all national technical associations in the region should form a confederation to provide joint services, especially information services, and to promote the organization of periodic meetings to discuss specific problems.
- (h) Governments and the private sector should co-ordinate their research work through the Latin American Forestry Institute (IFLA), and equip it with the resources it needs to carry out a wide-ranging programme of disseminating information about matters relating to the development of the forest industries, such as production, technology, marketing and the possibilities of increasing the utilization of local forest species.
- (i) Whenever FAO, ECLA and UNIDO study the potential for forest industries development in a subregion or a country, or in the region as a whole, they should form a task force comprising, in principle, advisers in the following fields: forest industries, forestry economics and statistics, and forest industries development planning. This would ensure that all relevant aspects are duly taken into account.
- (j) The international agencies sponsoring the Consultation should develop models and of calculation that would provide governments and enterprises with a useful analytical framework on which to base their forestry development plans and policies.

APPENDIX 1
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Sven HAUGAARD
Matthys HEERING
Gerry WELSH

UNIDO Sergio SALCEDO

APPENDIX 2

Agenda

- A. Opening addresses
- B. Election of the Chairman, two Vice-Chairmen and Rapporteur
- C. Adoption of the Agenda
 - Item I Raw material for forest industries in Latin America - Potential and problems
 - Item II Development of the sawmilling industry in Latin America
 - Item III Development of the wood-based panel industry in Latin America
 - Item IV World pulp and paper production, consumption and trade with special emphasis on Latin America
 - Item V An appraisal of the newsprint development opportunities in Latin America
 - Item VI Packaging paper development in Latin America
 - Item VII The overseas export possibilities for selected Latin American forest products
 - Item VIII The integration of forest industries
 - Item IX Prospects for forest industries development in Latin America
- D. Adoption of the report

APPENDIX 3

Drafting Committees

Item I (a) Raw materials (Wood)

Members:

P. Asenjo (Chile)	<u>Discussion leaders:</u> N. Carneiro
J. Catepillán (Chile)	L. Sangri
S. Bonet (Cuba)	
V. Díaz Serrano (Cuba)	
C. Claverie Rodríguez (Venezuela)	<u>Secretariat:</u> S. Salcedo

Item I (b) Raw materials (Bagasse)

Members:

I. Cepero Acan (Cuba)	<u>Discussion leader:</u> L. Galeazzi
J. Gil de las Casas (Cuba)	
J. Amador (Mexico)	<u>Secretariat:</u> R. Aguilar Bolaños

Item II Sawmilling

Members:

E. Susaeta (Chile)	<u>Discussion leaders:</u> T. Hederström
S. Bonet (Cuba)	R. Cataño
H. Parreño Torres (Ecuador)	
R. Eklund (Finland)	<u>Secretariat:</u> S. Haugaard
O. Wahl (Honduras)	
J. Bueno (Peru)	

Item III Wood-based panels

Members:

N. Carneiro (Brazil)	
H. van der Slooten (Costa Rica)	<u>Discussion leaders:</u> H. Josephson
M. Han (Chile)	N. Escalante
I. Cepero Acan (Cuba)	
J. Gil de las Casas (Cuba)	<u>Secretariat:</u> G. Welsh
G. Guevara (Mexico)	
J. Bueno (Peru)	
E. Palmer (United Kingdom)	
C. Mc Donald (United States)	
J. Yavorsky (United States)	

Item IV

Pulp and paper

Members:

M. Han (Chile)
G. Fu Peñalba (Honduras)
J. Díaz Barreiro (Mexico)
R. Rojas Gutiérrez (Mexico)
J. Bueno (Peru)

Discussion leaders: M. Diena
M. Zamora

Secretariat: S. Salcedo

Item V

Members:

E. Paul (Argentina)
A. Besa (Chile)
A. Falla-Ramírez (Colombia)
S. Bonet (Cuba)
G. Fu Peñalba (Honduras)
R. Rojas Gutiérrez (Mexico)
B. Cuadra (Nicaragua)

Discussion leaders: R. Henry
F. Camargo

Secretariat: E. Garnum

Item VI

Packaging Paper

Members:

M. Pilar (Brazil)
R. Emery (Canada)
J. Gil de las Casas (Cuba)
H. Parreño Torres (Ecuador)
K. Hall (Jamaica)
J. Arbitman (Mexico)
D. Vacuña (Mexico)

Discussion leaders: J. Gall
J. Hinojosa Petit

Secretariat: M. Heering

Item VII

Export possibilities

Members

T. Hederström (Colombia)
K. Haggemiller (Paraguay)
J. Bueno (Peru)

Discussion leaders: Lars Bratt
J. Hinojosa Petit

Secretariat: J. Schuster

Item VIII

Integration

Members:

L. S.A. Lindo (British
Honduras (Belize))
S. Bonet (Cuba)
N. Ryti (Finland)
G. Grayum (Guyana)
J. Bueno (Peru)
C. C. Rodríguez (Venezuela)

Discussion leaders: Risto Eklund
M. Vigna

Secretariat: S. Salcedo

Item IX

Future Prospects

Members:

P. Asenjo (Chile)
V. Díaz Serrano (Cuba)
O. Wahl (Honduras)

Discussion leaders: E. Susaeta
A. Tirado

Secretariat: Seppo Raisanen

APPENDIX 4

List of Secretariat Papers

Item

I	Secretariat Paper I A	Raw materials for forest industries in Latin America: Potential and problems
I	Secretariat Paper I B	A review of bagasse technology for the production of pulp and paper
II	Secretariat Paper II	Development of the sawmilling industry in Latin America
III	Secretariat Paper III	Development of the wood-based panel industry in Latin America
IV	Secretariat Paper IV	World pulp and paper production, consumption and trade, with special emphasis on Latin America.
V	Secretariat Paper V	An appraisal of the newsprint development opportunities in Latin America
VI	Secretariat Paper VI	Packaging paper development in Latin America
VII	Secretariat Paper VII	The overseas export possibilities for selected Latin American forest products
VIII	Secretariat Paper VIII	The case for integrating forest industries
IX	Secretariat Paper IX	Prospects for forest industries development in Latin America

APPENDIX 5

Other documents discussed

Risto Eklund and Matti Kirjasniemi, "An approach to Economic Planning of Forest Industry Integrates", Reprint Paper Trade Journal, 10 November 1969.

Risto Eklund, "Integration of Forest Industries" (Conference room paper, Mexico City, May 1970).

Klabin do Paraná, "Aproveitamento de Eucalipto na Fabricação de Pasta Mecano-Química", Monte Alegre, Paraná, Brazil, May, 1970

Börje Steenberg et al., "Competition in Rigid Packaging Materials"
Reprint, Svensk Papperstidning 73 (1970): 4, 77, Stockholm, 1970.

