

FORESTRY STATISTICS ASIA-PACIFIC REGION

REPORT AND PAPERS OF FAO SEMINAR 3-7 DECEMBER, 1984 BANGKOK, THAILAND

REGIONAL OFFICE FOR ASIA AND THE PACIFIC (RAPA) FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS BANGKOK, 1985

FAO/Forestry International Statistics





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TABLE OF CONTENTS

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Report of the Seminar on Forestry Statistics in the Asia-Pacific Region	1
Economic and Statistical Information for the Forestry Sector by P.A. Wardle	16
Forestry Trade Statistics by Y.S. Rao	27
Forestry Statistics in Bangladesh by Jamil Ahmed Chowdhury	52
Report on Collection, Processing and Publication of Forestry Statistics in Fiji by Ram Swarup	63
Collection and Dissemination of Forestry Statistics in India by C. Narayan Singh	71
Indonesian Forest Products Statistics by J. Bagio Widjanarko	89
Forestry Statistics in the Republic of Korea by Jeon Jin-Pyo	100
The Collection and Dissemination of Forest Statistics in Malaysia by Lockman M. Sirin	<u>108</u>
Collection and Processing of Forestry Statistics in Pakistan by Mohammad Amjad	122
Forestry Statistics in Papua New Guinea by Kini Karawa	142
Philippine Forestry Statistics by Juliet U. Texon	154
Forestry Statistics in Sri Lanka by Maria Arlene Kumardasa	16 <u>3</u>
Forestry Statistics in Thailand by Anan Nalampoon	173
Data Processing and Forestry Statistics in FAO by F. Padovani	180

REPORT OF THE

SEMINAR ON FORESTRY STATISTICS IN THE ASIA-PACIFIC REGION

FAO REGIONAL OFFICE, BANGKOK

3 - 7 December 1984

Agenda Item I: Functions of statistical information on the forestry sector and general considerations on their collection, processing and dissemination; the FAO programme in Forestry Statistics

1. Various aspects of economic and statistical information for the forestry sector were discussed. It was recognized that the summary check lists presented by FAO constitute a basic framework for developing and organizing centralized statistical units in member countries. Forestry data in developing countries should include, as far as possible, items enumerated in the summary check lists contained in the discussion paper on this item.

2. It was <u>recommended</u> that the statistics of the forestry sector should be brought together in a centralized system covering all aspects including forest resources, forest products, industry and trade and social and environmental aspects.

3. Some areas of statistical information on forest industry trade and social aspects may lie outside the immediate jurisdiction of the forest departments. It is essential that strong links with bodies collecting such information, and particularly with the central statistical offices, should be established to ensure full coordination. It is recognized that there should be a two-way flow between the central statistical offices and the forestry statistics system. The aim should be to reinforce forestry statistical organizations and central statistical units, to develop standards and mutually compatible approaches.

Agenda Item II: Presentation of Country Status Reports

4. Ten countries presented the status reports which are fully reproduced elsewhere in this Report.

Agenda Item III: Production Statistics

- (i) traditional sector products fuelwood, charcoal, unprocessed roundwood, poles and posts;
- (ii) <u>industrial wood sector</u>, roundwood, <u>sawnwood</u>, wood-based panels, pulp and paper.

5. Under this agenda item questions of (a) classification and definition of products, (b) measurement conventions and units, (c) sources and methods of collection of data were considered. The objective of this discussion was to determine the extent to which current national reporting was adequate to national policy formation on the sector and also in conformity with international standards of the FAO Yearbook of Forest products and capacity surveys. The observations, conclusions and recommendations are dealt with under these headings: Sawlogs/Veneer Logs; Fuelwood; Sawnwood; Wood-Based Panels and Pulp and Paper.

Sawlogs/Veneer Logs

- 6. The following observations were made in respect of sawlogs/veneer logs:
- (i) <u>Definitions</u>

Bangladesh: In general logs used for sawmilling or veneering are classified as saw logs/veneer logs; diameter should be about 20 cm. and length about 1 m.

Fiji: The selection of logs for sawing or veneering are entirely the choice of the users. There is no fixed diameter and length. In some cases small diameter (20 cm.) logs of high value species (Mahogany) are accepted for sawmilling. In general logs about 25 cm. diameter and 3 m. in length are used by sawmills. In the case of logs derived from Pine plantations the diameter can be as low as 15 cm.

<u>Indonesia</u>: Generally the diameter of logs for sawmilling and veneering is about 30 cm. and the minimum length is about 1 m.

<u>Malaysia</u>: There is no standard definition for saw logs and veneer logs. The diameter is measured at the small end. In general logs of 24 to 40 cm. and above are accepted for sawmilling/veneering. The length preferred is 5 ft. and above.

<u>Pakistan</u>: Logs of 20 cm. and above in diameter are accepted for sawing or veneering. In coniferous species the length tends to be 6 ft. and above. For hardwood even smaller lengths (5 ft.) are accepted. Peeler logs for plywood are larger in diameter and longer than those meant for the match industry. <u>Philippines</u>: The dimension of saw logs and veneer logs are determined by the diameter limit at the time of felling. In general 60 cm. and above dbh are accepted as saw logs and veneer logs.

<u>Papua New Guinea</u>: The diameter limit at the time of felling for saw logs and veneer logs is 50 cm. and above.

Rep. of Korea Three classes of saw logs/veneer logs are recognized: small: 6-30 cm. dbh and 1.8 m. in length; medium: 30 to 60 cm. dbh and 1.8 to 2.7 m. in length; large: 60 cm. and above dbh and 2.7 m plus in length.

Sri Lanka: Logs above 35 cm. dbh are considered as saw logs/veneer logs.

<u>Thailand</u>: The sizes of the logs for sawing/veneering depend on the market requirements. The felling rules are: teak - 190 cm. gbh, non-teak - 100 cm. gbh.

ii) <u>Coverage</u>

Bangladesh: The removals from state forest areas are recorded using prescribed forms. Such official coverage extends to removals by right holders. A survey has been carried out of the total consumption of logs by the Industry.

Fiji: The indigenous sources of supply include: native land, free-hold, Crown Plantations and Extension Plantations. These data are available from Forest Department and the Pine Commission. Production from all these areas is registered, recorded and included in total production.

Indonesia: All forests are managed by government and their production is recorded. Unrecorded production only relates to wood from farms and plantations other than teak.

<u>Malaysia</u>: All forests are owned by the State Government. There are no private forests. All production is licensed and logs entering sawmills are hammer marked. Even logs from private tree lands are recorded. The production record is thus complete.

<u>Pakistan</u>: Only products from State forests are recorded; production from private forests and farmlands is unrecorded. However an estimate of total log production is prepared.

<u>Rep. of Korea</u>: The coverage extends to state forests, private forests and village woodlots. All production is recorded.

<u>Sri</u> <u>Lanka</u>: Deliveries to state-owned mills (with STC operating the forests) are recorded. Illegal fellings that are detected have a record. Certain species removed from home gardens are recorded. Timber demand study allows for indirect estimation of illegal fellings and timber derived from non-forest areas. The total unrecorded removals are estimated to be 70% of the total log production. Returns to FAO includes only the production through STC.

<u>Thailand</u>: Permission should be taken from RFD even in the case of private lands. Only legal removals are included in FAO returns. It is recognized that coverage is not complete in that illegal removals are not covered.

Papua New Guinea: All forests are owned by communities. Government enters into agreement with communities for timber production. When customary owners dispose off timber on their own, the records are kept by the government.

<u>Philippines</u>: All forests are owned by the state; gathering and utilization of timber is through license or permit; for long-term licenses record of production is more or less complete; for short-term license records of production may be incomplete.

iii) Units of Measurement

Bangladesh: Volume is measure in cu.ft. (hoppus) over bark. From July 1984 the system is being converted into metric system with true measure.

Fiji: Volume is measured in cu. m. A bark allowance of 2 cm. is given. Logs are measured at mid-point in the case of broadleaved species. The volume formula for pine is based on measurement of top diameter.

Indonesia

Measuring/Scaling of Logs

Diameter Measurement

- Formulae: D = $\underline{D1 + D2 + D3 + D4}$ centimetre (full) 4
- D1, D2, D3 and D4 shall be measured under bark.
- Diameters D1 and D3 are measured in full half centimetre through the geometric centre at each end.
- Diameters D2 and D4 are measured in full half centimetre through the geometric centre, at right angle to D1 and D3 at
- Sum of D1 + D2 + D3 + D4 is divided by 4
- The nominal diameter is calculated to the full odd or even centimetre by deleting all decimal digits of the quotient

Length Measurement

- The shortest length between both ends, is measured in metre along a line parallel to the central axis.
- The nominal length in metre is calculated to the nearest lower full odd or even decimetre.

Volume Computation

- The applied formulae shall be: $V = 0.7854 \times D2 \times L$ 10,000
 - V = volume in cubic metres (m3)
 - D = diameter of log in centimetres
 - L = length of log in metres
- The volume is determined from the Indonesian Standard Volume Table for Logs

Rep. of Korea: Uses metric units and under bark measurement.

<u>Peninsular Malaysia</u>: Uses metric units and under bark measurement. Small end diameter is measured. In <u>Sabah</u> and <u>Sarawak</u>, there are different measurement conventions generally based on mid-diameter; hoppus measure and under bark measurement.

<u>Pakistan</u>: The government uses metric system whereas in the market place cu.ft. are still common. Previously quarter girth formula is used. Currently true volume measurement is practised.

Papua New Guinea: Scaling tables based on metric system are used.

<u>Philippines</u>: Logs are measured by taking the average diameter at the small end and large end. Volume is reported in cu. m. under bark.

<u>Sri Lanka</u>: Logs are measured by taking the average diameter at the small end and large end. Volume is reported in cu. m. under bark

Thailand: Uses mid-diameter under bark measurement and calculates volume in cu. m.

General conclusions and recommendations on Sawlogs and Veneer logs

7. The Seminar considered that the definition and units of measurement were reasonably clear and formed a basis for compatible reporting. In a number of countries the coverage of official statistics was incomplete and it was most important that estimates of total product were maintained and reported in international statistics. Ideally these estimates should be based on survey.

Fuelwood

8. The meeting discussed the definition, coverage and units of measurement of fuelwood. The following observations were made.

<u>Bangladesh</u>: Below 20 cms. billets are considered as fuelwood; only recorded production from state forest areas and removals of right holders are reported; 1 stacked cubic metre is taken as equal to 0.65 cubic metres solid volume.

Fij¹: Stems, branches, twigs, sawmill slabs and off-cuts are included in the definition of fuelwood; a factor of 0.75 is used to convert stacked volume to solid volume. Dometic fuelwood licensees are estimated to remove 1.3 m3 per month. However, family consumption greatly exceeds this amount.

<u>Indonesia</u>: Stumps, stem and branches are included in the definition of fuelwood. Usually billets of 1 metre in length and below are classified as fuelwood. Consumption in Java and Madura is covered by surveys. It is estimated that 1 stacked cubic metre equals 0.75 solid cubic metre.

<u>Rep. of Korea</u>: Branch wood and other biomass is generally used as fuelwood. Records of fuelwood are maintained by local county councils and they in turn report to Forestry Statistics Wing. The coverage is complete.

<u>Malaysia</u>: Stump, stems, and branches can be classified as fuelwood. Most fuelwood comes fromforest lands, mangrove forests and rubber plantations. Fuelwood from rubber plantations is used in rural industries (smoking rubber; tobacco curing; brick kilns) these volumes are not recorded. Stacked volume measurement is generally used. Annual report gives only the value of fuelwood removed which has been recorded; it is converted approximately while completing FAO returns. Only 10% of probable consumption is reported.

<u>Pakistan</u>: Roundwood of less than 20 cms diameter is considered as fuelwood. All kinds of biomass is used as fuelwood. Estimates pa given to FAO cover all consumption of fuelwood on the basis of 0.2 m3 per caput. 1 cubic metre stack is taken as equal to 0.5 cubic metre solid volume.

<u>Papua New Guinea</u>: There are no fuelwood figures. Rural people just collect fuelwood from their own forests. The volume of 9880 m3, recorded as fuel-wood, was meant for tea factory.

Philippines: Fuelwood is defined as roundwood used for cooking and heating. Important sources are Ipil-Ipil and mangrove species. Residues of sawmills are also used for fuel but no records are available. Official unit is m3, but sometimes estimates in bundles and pieces are also made. The recorded data are based on production under licenses. This is, however, incomplete. An estimate is available for the total consumption.

Sri Lanka: Normal unit used is kg. but sometimes estimates in bundles is also made. One bundle is approximately equal to 5 kg. Fuelwood is used in households and in industry. It includes coconut stems, leaves and rubber wood. Fuel consumption survey is being carried out by the Dept. of Census.

Thailand: Charcoal is the principal wood-based fuel. Fuelwood is used mainly in villages. Rural people collect fuelwood from forests for domestic use as also for charcoal making. The Government of Thailand does not collect data on a regular basis. Recently a study on charcoal production and consumption was carried out, but this does not cover fuelwood.

Conclusion and recommendation are as follows:

9. The Seminar was concerned about the lack of information on fuelwood consumption. Fuelwood collection was one of the factors causing degradation of forests. Information on fuelwood consumption of higher accuracy is required as a basis for policy and planning. It was considered that there is an urgent need to have objective surveys on fuelwood consumption. It is recommended that governments should give high priority to improving information in this area. Several countries in the region are embarking on surveys and it is recommended that FAO should give priority to providing information on a standardized approach to surveying consumption and providing technical support to national surveys.

Sawnwood

10. The definition of sawnwood is generally as given in the section on "classifications and definitions" in the FAO Yearbook of Forest Products. The coverage and method of collection of data and the units of measurement used were discussed country by country. The following observations were made.

Bangladesh: Official returns include only data on removals from forest areas and by right holders through pit sawing. Data from sawmills are not included. A sawmill survey is currently in progress. The results are expected in about 3 months.

Fiji: There are only 3 large sawmills in the country; the rest are small and include some portable sawmills. Sawmills are not required to maintain and submit production records. Production of sawn timber is estimated assuming a conversion factor of 50% of sawlog input. The unit of measurement used is: m3. <u>Indonesia</u>: The total sawmill capacity in the country is estimated at 14.4 million m3. The total number of sawmills in the country is about 2500 of which 286 are concession linked sawmills. There are 622 sawmills which are considered as large undertakings and have an annual capacity of 6000m3 or more a year each. These sawmills account for an output of 12.5 million m3 a year. There are 72 sawmills which specialize in producing sawn timber of high value species (Teak and ebony) whose capacity is estimated at 0.3 million m3. The main sources of information on sawmill data are the Indonesia Sawmillers' Association and the Directorate of wood processing of the Forest Department. The data provided by these sources do not always tally.

Measuring/Scaling of Sawn Timber

Thickness Measurement

- The smallest thickness between both faces is measured in centimetres
- The nominal thickness in centimetre shall be the measured thickness corresponding with the standard thickness and or calculated to the nearest lower standard thickness or specific thickness

Width Measurement

- The smallest width between both edges is measured in centimetre
- The nominal width in centimetre shall be the measured width, corresponding with the standard width and or calculated to the nearest lower standard width or specified width.

Length Measurement

- The shortest length between both ends, along a line parallel to the axis is measured in metres.
- The nominal length in metre is calculated to the nearest lower full odd or even decimetre.

Volume Computation

- The nominal thickness is multiplied by the nominal width and the nominal length.

- <u>Calculation to the fifth decimal place</u>

- The nominal volume in cubic metre shall be calculated by the rounding up the sixth decimal to the fifth decimal digits, if the sixth amounts 6 and up, or by deleting it if it amounts 5 and lower.
- The nominal volume in cubic metre shall be determined from the Indonesian Standard Volume Tables for Sawn Timber.

The amount of length-, width-, and thickness allowances, all outside the nominal sizes of sawn timber, shall be excluded.

<u>Rep. of Korea</u>: Customs organization is the source of data on log input to sawmilling; as most logs are imported. Production is fully covered and reported.

<u>Malaysia</u>: Sawmills are licensed by the Dept. of Forests and they monitor the data through the system of shuttle returns. A check is provided by recovery rates indicated. All measurement is in cubic metres.

Pakistan: The metric system is used. There are 6,000 mills, sawnwood production is estimated from sawlog production. No saw mills survey has been conducted so far.

<u>Papua New Guinea</u>: In 1981, 71 sawmills are in operation. The Forest Office keeps records. Some small saw mills are run by private organizations.

<u>Philippines</u>: Sawmills are licensed by the Bureau of Forest Development. Sawmills are required to report production. They do so in Bd. ft. These figures are converted by BFD into cubic metres and incorporated in the monthly returns.

Sri Lanka: Only production of state-owned saw mills is recorded. Some 90% of the sawmills (out of 50) are small mills; returns to FAO exclude this production.

<u>Thailand</u>: The RFD and the Ministry of Industry approve the establishment of sawmills. Establishment of new saw mills is currently banned by the government. The present number of approved saw mills is 600. No returns are sent by sawmills. The reported production is therefore incomplete.

Wood-Based Panels

11. The Seminar discussed the sources and availability of production and capacity statistics and the units of measurement used by the wood-based panel industry.

Bangladesh: Plywood is measured in sq.ft. in thicknesses of 4-18 mm. Particle board is measured in tons. Capacity information is collected from Bureau of Statistics and Bangladesh Chemical industries Corporation. A special survey has been conducted by Planning Commission.

Fiji: There is one veneer mill and one plywood mill. Production data is reported in square metres: veneer average thickness is 1 mm. and plywood average thickness is 4 mm. The capacity of veneer industry is 45 cu. m./day in two 9-hr shifts. The capacity of Plywood industry is 20 cu.m./day in two 9-hr shifts. A new concession has been signed for an additional veneer plant. <u>Indonesia</u>: Detailed procedures have been laid out in Indonesia for measuring and scaling of veneer and plywood. The procedure is given below:

Measuring/Scaling of Veneer

Thickness Measurement

- Measure in millimetres the smallest thickness between both faces.
- The nominal thickness in millimetres shall be the measured thicksness, corresponding to the standard thickness and is calculated to the nearest lower standard thickness or specified thickness.

Width Measurement

- Measure in centimetres the smallest width between both edges.
- The nominal width in centimetres shall be the measured width corresponding to the standard width and is calculated to the nearest lower standard width or specific width.

Length Measurement

- Measure in metres the shortest length between both ends.
- The nominal length in metres shall be the measured length corresponding to the standard length and is calculated to the nearest lower standard length or specific length.

Volume Computation

- Multiply the nominal thickness by the nominal width and the nominal length.
- The volume of a parcel consisting of veneers with same widths and lengths shall be scaled in cubic metre, derived from multiplying the nominal length by the nominal width by the total of the nominal thicknesses.

Measuring/Scaling of Plywood

Thickness Measurement

- Measure in millimetres the smallest thickness between face and back.
- The nominal thickness in millimetres shall be the measured thickness corresponding to the standard thickness and is calculated to the nearest lower standard thickness or specified thickness.

Width Measurement

- Measure in centimetres the smallest width between both edges.
- The nominal width in centimetres shall be the measured width corresponding to the standard width and is calculated to the nearest lower standard width or specified width.

Length Measurement

- Measure in metres the shortest length between both ends
- The nominal length in metres shall be the measured length, corresponding to the standard length and is calculated to the nearest lower standard length or specified length

Volume Competition

- Multiply the nominal thickness by the nominal width by the nominal length.
- The volume of a parcel consisting of plywood with same widths and lengths, shall be scaled in cubic metres, derived from multiplying the nominal width by the nominal length by the total of the nominal thick-nesses.

<u>Rep. of Korea</u>: Current data on production and capacity are available with the Bureau of Forest Administration.

<u>Malaysia</u>: All wood-based panel industries are licensed by the Ministry of Industry. Data on veneer plant production and capacity are available. The unit of measurement is m3.

<u>Pakistan</u>: Data on wood-based panel industry is available from the Ministry of Industry.

Papua New Guinea: All veneer production is used in local plywood production.

<u>Philippines</u>: The industry provides the information on production. The BFD has no influence over several plants particularly those which have no timber concessions. No other agency is collating the statistics.

<u>Sri Lanka</u>: The figures given to FAO in capacity survey are correct. Thickness of plywood ranges from 1.4 mm to 4.8 mm.

<u>Thailand</u>: The industry is generally not willing to release updated figures.

Pulp and Paper

12. Observations on pulp and paper sector by the concerned countries are briefly reported hereunder.

Bangladesh: Production and capacity data are correctly reported.

<u>Indonesia</u>: The pulp industry is the responsibility of the Forestry Ministry. Paper is the responsibility of the Ministry of Industry.

<u>Malaysia</u>: Paper industry, which is small is based on recycled paper and imported pulp. Two new mills are to go into production in 1986.

<u>Pakistan</u>: The industry uses about 20% of imported pulp. The data reported in the survey is correct.

<u>Philippines</u>: Data collection is the responsibility of the league of pulp and paper manufacturers (PULPAPEL).

Sri Lanka: There are small anomalies in the data reported to FAO which need to be corrected.

<u>Thailand</u>: Information on industry is available from the National Pulp and Paper Association.

Several conclusions on Sawnwood wood based panels and paper

13. It was agreed that participants provide corrections on copies of the capacity survey sheets for their countries in respect of wood-based panels and pulp and paper.

14. It was emphasised that international returns on production should be ocmprehensive. It was desirable where current reporting was incomplete that sample surveys of the industry should be carried out.

Agenda Item IV: Discussion on Trade Statistics: Classification

and Definitions, Measurement Units and Sources

15. The importance of trade statistics and an overview of trends in the last ten years were discussed. It was recognized that trade in forest products in the region amounts to some 20% of the world trade in forest products. Many of the developing countries of the Region are net export earners chiefly on account of forest products. In view of this, the collection and dissemination of trade statistics by the forestry statistical units will continue to be of vital importance in these countries.

16. Nearly all statistics on trade are collected from source books on foreign trade statistics. These are based on systems of classification

which are internationally accepted. There should be an effort on the part of the forestry statistical units to understand these systems and where necessary develop procedures and drills to match the SITC, Rev. 2 and CCCN Classifications with the Aggregate Commodity Groupings indicated in the FAO Yearbook of Forest products.

Agenda Item V: Forest Product Prices

17. The FAO Questionnaire and publication was introduced and the countries were invited to report on their procedures for data .pa collection in this area. Their observations are listed below:

<u>Bangladesh</u>: Utilization Division in Forest Service collects prices from sales reports and publishes these. The Bureau of Statistics includes forest products indices among their price indices.

Fiji: Import and export prices are readily available. Prices on the domestic market are more difficult to collect and synthesize in view of the number of companies, species and grades.

<u>Indonesia</u>: Domestic prices are collected regularly. Check prices for tropical timber are also collected and issued quarterly. Sawnwood and plywood prices are also published.

<u>Rep. of Korea</u>: Price data are regularly collected and reported. Paper prices are surveyed by the Ministry of Commerce.

<u>Malaysia</u>: Prices are collected for a number of species at different locations. For Sabah and Sarawak export prices are published. Sawnwood and plywood prices are collected regularly. It is possible to provide data for international publication. Information on fuelwood can also be supplied.

<u>Papua New Guinea</u>: Prices are published in Forest Statistics -Facts and Figures by species. Data are also available on minor forest products. Data are dervied from logging and sawmilling companies. Forest Industry Council also publishes such statistics.

<u>Pakistan</u>: Fuelwood prices are included among data on retail prices of basic necessities collected by Central Bureau of Statistics fornightly. Wholesale timber prices are also collected by CBS monthly by species in the Karachi Market. The Forestry Department also collects market prices at other locations. These are published in the CBS Statistical Yearbook and in the Forest Service's report on the State of Forestry.

<u>Philippines</u>: The price of forest products exports are procured from the Economic Research Division of the Central Bank and are published in the Philippine Forestry Statistics. Domestic prices of lumber, plywood and non-wood forest products are collected from five monitoring units throughout the country and published in "Philippine Forest Statistics".

<u>Sri Lanka</u>: Forest product price data are published by the State Timber Corporation. Fuelwood prices are published in the consumer price survey by the Central Statistics Office.

Thailand: There are no official records of forest product prices. Some companies maintain such records for their own use but they are not main-tained by the RFD. FIO and Thai Plywood Company might be able to provide indicative data.

General conclusions and recommendations on price statistics

18. The Seminar <u>recommended</u> that all countries should collect price data for a standard list of products covering the range of fuelwood, charcoal, sawnwood, wood-based panels and paper. The participants were strongly encouraged to return these data to FAO Rome for the 1985 issue of "Forest Products Prices".

Agenda Item VI: Capacity of Sawmilling Industry

19. The Seminar took note of the report on "The Structure of Sawmilling Industry". Several countries indicated that they were involved in national surveys of the sawmilling industry. They considered that comprehensive information on this subject is necessary and generally supported the idea of an international survey that would also stimulate national capabilities. The capacity surveys of wood-based panels and pulp and paper were also discussed.

Agenda Item VII: Data Processing and Forestry Statistics in FAO

20. The presentation under this title by Mr. Padovani provided an overview on the role of computer application in forestry statisitcs.

21. Basic concepts of forestry statistics and information processing were described and related to some FAO Forestry Department computer applications in terms of the contents, dimensions and structure of the data bases. Emphasis was put on:

- Forestry data collection, updating, validation and forecasting, using the spread sheet software
- The usage of the "fiber balance system" as a tool for pulp and paper data validation
- Problems and solutions in creating an integrated data based
- The usage of international and national statistics
- The benefits from improving and expanding forestry statistics data

- Colour graphics as a tool for enhancing forestry information
- The problems in geographic and forest products definitions in data analysis over time

During the presentation, sevety colour graphic slides were projected.

22. The Seminar strongly <u>recommended</u> that a network of communication on forestry statistics be maintained between the member countries, RAPA and FAO, Rome in order to exchange information and publications on national forestry statistics and the regional and world statistical publications.

Agenda Item VII: Demonstration on the use of Microcomputers

handling Forestry Statistical data

23. A demonstration on the use of two types of microcomputers for statistical work was held for the benefit of the participants. The micro-computers demonstrated were:

- IBM Personal Computer system 16 bit machine PC-XT, CPU-128 KB, two mini floppy disk drives combined, screen, dot matrix printer and xy-plotter
- NEC Personal computer system 8 bit machine PC-8001MKII, CPU-60 KB, two mini floppy disk drives separated, screen and daisy wheel printer

24. The Seminar noted the potential of micro-computers as a means for improving, speeding up and generally facilitating data processing. Their tremendous contribution to validate, analyse .pa and make integrated use of data on the sector was recognized. The demonstration of micro-computer systems showed how at a relatively low capital cost it is possible to gain access to high technology. It was considered that this was an important area for development in forestry statistics' office. It was also an area that justified support through technical assistance and external funding. Standard approaches should be developed by FAO and transmitted to governments.

25. The invitation of the Asia-Pacific Commission on Agricultural Statistics for an indepth presentation on the methods of forestry statistics to be made at the 1986 meeting of the Commission in Seoul, Korea, was unanimously welcomed. The Seminar <u>recommended</u> that consideration be given to specific invitation of Forestry Statisticians to attend that session.

15

Ву

P.A. Wardle 1/

Introduction

For forestry to be carried on and to contribute to the well-being of people, decisions are being made all the time in many different places and at all sorts of levels. Policy decisions, managerial plans, day-to-day decisions on the job; by governments, by forest planners, by foremen, millers, farmers; on land use, logging, tree planting, tree cutting, land clearing, burning or grazing, selling and buying, on investment in mills, on the products to make, by what process, on the market in which to sell, and on training; they are made on investment, financing, the allocation of funds, on the control or subsidy of activities, on the location of activity and target groups within society. Information is the raw material for this decision-making. Sound decision depend on good information as well as an adequate system for using it.

In some countries the information available about the forestry sector is not as good as it should be and this lack certainly prevents forestry and forest industries from generating as much benefit to the community as they might. In some countries sheer ignorance is resulting in damage to and destruction of the forest. This is done in the sincere belief that it will improve benefits from agriculture, grazing or immediate wood supply while it has in fact disproportionately harmful consequences of soil erosion and loss of potential to produce needed forest products, eventually leading to a poorer community. Lack of objective and credible information contributes to the failure to mobilize communities and governments to corrective action. A poor level of awareness of the contribution and potential contribution of forestry and forest industries to the economic or social well-being of the community leads to the neglect of institutions and failure to finance investment in the sector. There are reasons why it may be particularly difficult to get people to appreciate the benefits of programmes and to realise the costly consequences of their neglect. The availability of forestry supply usually originating from natural forest has Environmental damage from forest destruction is been taken for granted. frequently more significant downstream and outside the area where forest is damaged or destroyed. With the exception of a few forest-rich exporting countries, the scale of forestry sector activity is usually not so great as

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to make it a prominent feature of the national economy. Finally the long term nature of forest production means that supply for current consumption can be maintained while stocks and future production potential are being

depleted. The fact that the harm may come home to roost sometime after the damage is done makes it difficult to arouse alarm, and because the benefits of good investment come only in the impersonal future, the community is doubly cautious about meeting the immediate cost. The long-term nature of these forestry problems greatly increases the difficulty of making the matter credible and gaining community commitment to action.

These are all reasons why it is necessary to have a strong information system in any country where forests have even moderate significance and it is important that these provide the needed data for economic and social policy-makers and financial authorities, as well as the forest resource and forest products industry managers. The system should also provide for adequate monitoring of the performance resulting from decisions made.

The Appropriate Statistics

Information is a costly commodity and should only be collected where relevant and with the detail and precision appropriate to the decisions that have to be made. In particular there is a chronic shortage of people trained and capable to collect and process information. The forest sector information system should concentrate on subject areas of importance to a given country, to its local and central organization.

The big headings which are of significance in politics, to policymakers and to financial authorities are: level of the sector contribution to the economy, production, trade and investment, involvement of people, employment and settlements, and land use. Adequate data in these areas, which can be related to information on other sectors of the economy, must be available.

A major problem for forestry as for other activities is to obtain adequate information on its contribution to rural communities. Since in many countries activities not carried on in commercial markets are not recorded in the statistics, the most important forestry activity in the developing world - wood collection for fuel and material by rural households - is virtually without record. As an example to show the significance of this, the estimated total value added contributed by the forestry and forest industry sector in development Africa amounts to about 57,000 million per annum. \$5,850 million of this is for fuelwood and unmanufactured roundwood used mainly by the rural community. The total of \$7,000 makes nearly 5% of gross domestic product of the region. The recorded commercial activity is the only part of the sector contribution recognized; this of course leads to a gross under-estimate and completely misses the vital contribution of forestry to community energy supplies and community wellbeing.

What sort of information has to be collected? The following pages provide some main headings and some detail which may be appropriate according to the circumstances of the country. Recognizing the prime importance of information on the sector's role for policy formation, a check-list of economic and social indicators is given first, and a check-list of basic data on policy and planning and control within the sector in second place.

Table 1 Summary Check List of Types of Information for Central Policy Formulation on the Forestry Sector

FORESTRY SECTOR AND NATIONAL INCOME

Value of of Production-Value Added (sub-divided by forestry and individual industry*)

Income from Employment

Value of Exports

Value of Imports

Investment (sub-divided by forestry and individual industry*)

FOREST PRODUCTS IN ENERGY SUPPLY

POPULATION INVOLVEMENT IN FORESTRY

Employment (sub-divided by industry and including self-employed and work of family members) People with forestry holdings People living in forests (living from forest areas, shifting cultivators, forest graziers, hunters, collectors)

LAND USE

Land under forest Forest area with environmental or protective role Forest area with major pressure of other use (shifting cultivation, grazing)

^{*} including inputed value of production within households or in unrecorded rural sector activity

	Table 2
	A Summary Check List of Forestry Sector Information - Land Utilization - Forest Resources - Production and Trade
1.	LAND UTILIZATION UNIT 000 HA
	Forest and Other Wooded Land
	Closed Forest Inventoried Estimated
	Other Wooded Land
	Agricultural Area
	Other Area
	Special Areas within Forest or Other Wooded Land
	National Parks, Wildlife Reserves
	Other Areas with Restricted Use (e.g. designated protection
	Areas Subject to Degradation
	Areas Subject to Risk from Erosion
	Total Area Annual Area
	Man-made Forests
	Other tree planting
2.	OWNERSHIP OF FOREST AREAS UNIT 000 HA
	Publicly Owned (State/Other)
	Privately Owned
3.	FOREST RESOURCES (growing stock and increment) UNIT 000 HA
	Standing Timber Annual Increment
	Closed Forest Inventories/Estimated Other Wooded Land " "
4.	FOREST PRODUCTION
	Industrial Roundwood UNIT 000 CU.M.
	Sawlogs and Veneer Logs Pulpwood Other
	Fuelwood
	Charcoal (mt)

5. PROCESSING INDUSTRY PRODUCTION

Sawnwood Panel Products Veneer Plywood Particleboard (including non-wood based) Fibreboard Pulp Wood Pulp Pulp (non-wood based) Paper and paperboard 6. FOREST PRODUCTS OTHER THAN WOOD (Ex. resins, gums, cork, tannin, honey, hunting-users, yield; livestock - number, yield, nuts; fodder production; recreation - user numbers) 7. FOREST INDUSTRY CAPACITY Number of Mills Annual Production Capacity (000 m3/mt) Sawmills Panel Product Mills Pulp Mills Paper Mills Other 8. TRADE IN FOREST PRODUCTS Units Volume 000 m3/mt Value: Local Currency Imports Exports Volume Value Volume Value Sawlogs and Veneer Logs Pulpwood Other Industrial Roundwood Fuelwood Charcoal Sawnwood Veneer Plywood Particleboard Fibreboard Pulp Paper Forest Products Other than Wood

9. PRICES

10. EMPLOYMENT Professional Technical & Vocational Labourers

Public Forest Administration Private Forests Forest Industries and Logging University and Research

The organizations for collecting information on the forestry sector varies very much from country to country, often depending on the range of responsibilities of the central government forestry authority. In a number of countries the importance of having available authoritative and comprehensive statistics on the sector has led to the organization of central collection and publication of data on the sector. In other countries different parts of the sector activity are covered by separate authorities, some government and some private. The following is a brief description of a sample of statistical bulletins which indicate this approach.

Vademecum Forestal is an annual publication by the statistics office of the Peruvian Forest Service. Coverage includes public expenditure, investment and employment; forest resources, including the area with a protection function, plantation, production and trade in forest products; conservation, the population of certain protected species, the production and trade in meat and skins of wild animals. An important feature of this collection is the inclusion of separate estimates of production by small firms and households not providing formal records.

Philippine Forestry Statistics prepared by the Planning and Evaluation Division of the Bureau of Forest Development covers forest resource, designated parks, wildlife and watershed reserves, timber production and trade, industry capacity and reafforestation. There is also a statistic on families squatting on forest land.

The compendium of statistics prepared by the Economics Branch of the Office of forests for Papua New Guinea deals with forest resources, timber rights and permits and licenses, by harvest trade processing plants including their value, plantations and the finance and staffing of the government forest authority. The director general of forestry information in Mexico publishes statistics on the volume and value of production of forest products.

Volume and value of trade in forest products is included in the national trade yearbooks published in many countries. The Forestry Institute in Chile publishes an annual analysis of forest products exports which includes coverage of non-wood forest products and wood manufactures. The Timber Industry Boards of Malaysia and of Singapore publish monthly data on the timber and timber products export trade of these countries. Details of the export trade of Ivory Coast have been published by "Syndicat des Exportateurs et Negociants en Bois" of that country. Information on Ghana's timber exports has been published in Ghana Timber News.

In some sectors the trade associations provide valuable coverage and an example is provided by the Confederacion Indutrial de la Celulosa y cel Papel Latinoamericana which prepares an assembly of statistics on production, trade and capacity of that industry in the countries of the region.

REQUEST FOR INFORMATION

We should like to know about and receive copies of any published statistics of the forestry sector:-

FORESTRY STATISTICAL YEARKBOOKS FOREST PRODUCT MARKETING AUTHORITY BULLETIN OR REPORT FOREST INDUSTRY ASSOCIATION BULLETIN OR REPORT NATIONAL STATISTICAL YEARBOOK WITH FORESTRY COVERAGE

Address to:

P.A. Wardle Statistics and Economic Analysis Unit Forestry Department - FAO, Rome

Data Sources and Statistical Systems

Traditionally forestry sector statistics are collected by forestry departments and encompass the field of activity that is the direct responsibility of the department. Collection of this information is of course a minimum requirement for the day-to-day operation of the department. Policy formation for the forestry sector and decision-making on investment and infrastructure-research, training, educational facilities an investment in tree planting programmes, forestry and forest industries and marketing developmetn, tend to require information over a wider spectrum than is the This will mean collection of direct responsibility of a single authority. information beyond that obtained from operational records. This may require collection through special surveys of the forestry authority, through data systems and surveys of other government departments, and through the data collection made by private sector marketing and industry associations. A few examples illustrate the range of possibilities.

Forest Resources

The basic requirement of forest and land resources data for any forestry planning or decision-making does not need to be developed here. The possibility that the needed information will be generated mostly economically by collaboration with other survey organizations is perhaps well-known. Certainly it will be unusual for the investment in large scale aerial photography or satellite data interpretations to be optimal if it is set up for the exclusive use of forest planning. In countries whose forestry is on a smaller scale it is likely that much of the needed survey information can be best obtained through systems set up for wider purposes.

Forest Production

Information on forest production is frequently obtained through records of scale and licensing of timber removals. Sometimes there is also a formal control system relating to removals from private forests or a require-ment for the return of records of delivery to mill. There is likely to remain a considerable volume of production for which no formal A major component of this will be production and consumprecords exist. tion by families for their own use. To obtain information on this important area special surveys are necessary in many countries fuelwood consumption surveys have been carried out by forest authorities either nationally or for particular sample localities. Current examples are surveys carried out with FAO assistance in Bangladesh, Mali and Upper Volta. Estimates of fuelwood consumption have also been obtained through household budget surveys and carried out by central statistics offices. Once appropriate questions have been devised, the use of such central surveys has the merit of large sample size, low additional cost of the data and regular updating of the information.

Industry

As has been mentioned, data on forest industries may be obtained through special surveys, required regular returns from industry or from industry association statistics. A special survey of the sawmill industry in India was recently completed with the support of an FAO project. Information on capacity, employment, material inputs, expenditure and investment may be available from central government census of industry.

People in Forestry

Information on population in forest area, employment in forestry and forest industries and population dependent on the forest for income may be obtainable from national population censuses. Government forestry enterprise records and industry data may cover a large part of modern sector employment. Most difficult is to obtain information on the involvement of family labour in forestry work when it is for the family enterprise or for family consumption. Another major unknown is the population of families living in or dependent on the forest for goods and services, and land for grazing or shifting cultivation.

Studies of Forest Sector Statistical Systems

Many countries have recognized the need and are working on improving forestry sector information systems. FAO has had field project activities specifically directed to assisting in the development of forestry sector statistical services in Malaysia, Brazil, Paraguay, Mozambique and the Philippines, in the last several years.

An informative review on the availability sources and adequacy of statistics for the forestry sector in one country is provided by the Report of the Review Committee on Forestry Statistics 1979 prepared for the Department of Statistics and Forest Service in New Zealand.

FAO and Forestry Statistics

The objective of the FAO programme on international statistics of the forestry sector is to make relevant and objectively compiled international statistics available for all national and international agencies and to assist in the development of national statistical services for the sector.

The work done is of three main kinds:

- (i) The collection and publication of information on production and trade, prices, industry capacity and forest resources. It is hoped to add the information on forest population and employment and the economic contribution of the sector to current series in the future.
- The development and dissemination of standard approaches to the (ii) collection of forestry sector statistics. The questionnaires and enquiries are designed to be compatible with minimum national requirements and provide an appropriate framework for national collections. Standard classifica-tions have been developed and with the assistance of advice of national authorities and appropriate international agen-cies have been revised over time. The classification and definition of forest products published in conjunction with ECE in 1973 is currently being systematically revised with the assistance of experts in all sectors and many countries, before publishing a second edition. Such classifications provide a uniform basis for development of national statistical systems that will facilitate the international exchange of information on the sector.

(iii) Direct assistance is provided in the design of national statistical services and surveys of sector activities. The development of standard approaches to survey, problems and the organization of training in statistical systems for the forestry sector are other ways in which the programme aims to support the development of sound national systems.

The following are the main annual publications:

Yearbook of Forest Products Annuaire des Produits Forestiers Annuario de Productos Forestales

Forest Product Prices Prix des Produits Forestiers Precios de Productos Forestales

Pulp and Paper Capacities Capacites de la Pate et du Papier Capacidad de Pasta y Papel

FAO provides basic statistics on forestry for the following United Nations publications:

United Nations Statistical Yearbook United Nations Yearbook of Industrial Statistics United Nations World Energy Supplies Unesco Statistical Yearbook United Nations African Statistical Yearbook Economic Commission for Western Asia and FAO- Agriculture and Development

The FAO Monthly Bulletin of Statistics includes forest product prices series of international significance. The Timber Bulletin for Europe is prepared by the Joint FAO/ECE Secretariat of the Timber Committee of the Economic Commission for Europe. It includes data on production and trade and prices of forest products for the member countries of the Commission and is published twice yearly. "Monthly Prices for Forest Products" is a quarterly supplement to the Timber Bulletin for Europe.

Post Script

An objective of our FAO programme is to improve the quality of data and presentation of existing series, and efficiency in processing. In the last respect we are making the fullest possible use of computers. We hope to be able to extend our international coverage to include information on people in forestry and the economic contribution of the sector. This will of course depend, as all our work does, on the support and assistance of national authorities. We are particularly concerned to improve the exchange of information with national authorities so that (i) international data is fully and effectively available where needed for policy forming and decision-making; (ii) imperfect information is corrected by the people who know.

INFORMATION EXCHANGE

To foster exchange, we wish to get on our mailing list the people responsible for national statistics and planning for the forestry sector.

Names and addresses of appropriate people will be welcome.

By

Y. S. Rao <u>1</u>/

Introduction

Information is a prerequisite for decision making. Often the quality of decisions taken depend on the quantity and reliability of available statistics. For decision-making in the broad sector of forestry and forest industries, trade statistics are vital. The FAO Yearbook of Forest Products has in fact more tables on trade than on production: out of 255 tables only 49 tables deal with production and the others pertain to quantity and value of imports and exports; direction of trade and unit values of imports/exports. This concentration on trade statistics in the FAO publication does reflect the importance of trade in forest products in the countries of the Region. The purpose of this paper is two-fold:

- (i) to review the data of forest products trade in the Asia-Pacific Region, and
- (ii) to provide information on classification of forest products used in presenting trade statistics

Review of Trade data of Asia-Pacific Region

The following figures show the magnitude of trade in forest products in 27 FAO member countries of the Asia-Pacific Region when compared with global trade:

Value of Imports (Ave. annual, triennium ending 1982)

Unit: US\$1000

Item	World (A)	<u>Asia-Pacific (B)</u>	(B) as % of (A)
Saw logs and veneer logs	7,834,199	5,679,466	72,5
Sawn wood and sleepers	12,101,246	1,375,455	11.4
Wood based panels	4,874,794	150,907	3.1
Wood pulp	9,264,233	1,605,881	17.3
Paper and paper board	20,809,051	2,068,409	9.9
A11	54,883,523	10,880,118	19.8

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Regional Forestry Economist, FAO Regional Office, Bangkok, Thailand

Item	World (A)	<u>Asia-Pacific (B</u>)	Unit: US\$1,000 (<u>B) as % of (A</u>)
Saw logs and veneer logs	5,517,534	2,452,039	44.4
Sawn wood and sleepers	10,678,582	1,176,503	11.0
Wood-based panels	4,791,051	1,246,547	26.0
Wood pulp	8,859,674	195,863	2.2
Paper and paper board	<u>19,583,693</u>	1,011,508	5.2
All	49,430,534	6,082,460	12.3

Value of Exports (Ave. annual, triennium ending 1982)

The imports of <u>saw logs and veneer logs</u> constitute about 52% of total value of imports of the Region. The volume involved (1982) is some 45 million m3. The major importers are:

	Import Volume	Import Value	<pre>% of value of imports</pre>
Country	1000 m3	1000 \$	to Region's total
Japan	32,000	4,280,670	75.4
China	6,925	675,633	11.9
Rep. of Korea	5,790	694,733	12.2
Thailand	137	13,953	0.2
Others	128	14,465	0.3
Total	44,980	5,679,466	100.0

During the period 1972-82 the following major trends in the imports of saw logs in the countries of the Region were observed:

- a marginal decline in total import volume, from 45.42 million m3 to 44.98 million m3;
- increase in imports by China from 2.6 million m3 to 6.9 million m3;
- increase in imports by Rep. of Korea from 3.7 million m3 to 5.8 million m3;
- decrease in imports by Japan from 38.9 million m3 to 32.0 million m3.

Among the other imports wood pulp, paper and paper board constitute

33.8% of the Region's total import value; the major importing countries are

shown below:

Country	Volume (1000 mt)	Value (1000\$)	Value as %
			of Region's Total
Japan	2.526	1,325,186	36.1
China	1,055	219,857	5.0
Australia	983	545,736	14.8
Rep. of Korea	508	264,689	7.2
India	365	177,233	4.8
Indonesia	358	169 , 496	4.6
Malaysia	267	164,099	4.5
Thailand	244	156,727	4.3
Philippines	165	78,701	2.1
Others	272	572,565	15.6
Total	6,743	3,674,289	100.0

The following trends in the import of <u>wood pulp</u> were observed during the period 1972-82:

- volume of imports in the Region rose from 1.687 million tons to 3.512 million tons

- some of the growth rates* registered were:

Region	+	7.3%
China	+	9.2%
India	+	6.78
Japan	+	9.0%
Rep. of Korea	+	7.6%
Thailand	+	7.7%

Imports of <u>paper and paper boards</u> rose from 1.6 million tons in 1972 to 3.2 million tons in 1982. Selected growth rates are shown below:

Region	+	7.0%
China	+	14.5%
India	+	3.4%
Indonesia	+	7.48
Japan	+	18.3%
Malaysia	+	6.6%
Philippines	••••	1.6%
Thailand	+	5.1%

* Average annual compound growth rate

Regarding the composition of exports, the largest share is claimed by <u>saw logs and veneer logs</u> which account for 40% of exports of all forest products. The total average annual volume exported in the triennium ending 1982 was 28.8 million m3. The major exporters and their share in the Region's export value is shown below:

Country	Volume (1000 m3)	<u>Value (1000\$)</u>	Value as % of Region's Total
Malaysia	17,042	1,261,616	51.5
Indonesia	8,374	829 , 339	33.8
Philippines	1,476	165,330	6.7
Papua New Guinea	818	53 , 508	2.2
New Zealand	662	35 , 958	1.5
Others	404	106,288	4.3
Total	28,776	2,452,039	100.0

The following major trends in the exports of saw logs and veneer logs were observed during 1972-82:

- a region-wide decrease in the volume of exports from some 33 million m3 to 28.8 million m3;
- decrease in the exports from Indonesia from 10.67 million m3 to 8.37 million m3;
- increase in exports from Malaysia (mainly Sabah and Sarawak) from 11.36 million m3 to 17.04 million m3;
- decrease in exports from the Philippines from 8.3 million m3 to 1.5 million m3;
- decrease in exports from New Zealand from 1.83 million m3 to 0.66 million m3.

The export of sawn wood and sleepers (1982) amounted to about 6.34 million m3 and their value as a proportion of total export value of forest products was 19%. Details of major exporters and their shares are shown below:

Country	V <u>olume (1000 m3)</u>	V <u>alue (1000\$)</u>	<u>Value as %</u>
			of Region's Total
Malaysia	3,216	527 , 539	44.8
Indonesia	1,226	219,041	18.6
Philippines	627	143,583	12.2
New Zealand	561	68,009	5.8
Rep. of Korea	263	54,728	4.7
Burma	118	68 , 908	5.9
Others	330	94,695	8.0
Total	6,341	1,176,503	100.0

Major trends observed during the period 1972-82, in the export of sawnwood and sleepers are:

- Region-wide export volume grew from 2.8 million m3 to 6.3 million m3;
- Export volume from Malaysia more than doubled during the period (from 1.5 to 3.2 million m3);
- Indonesia emerged as a major exporter of sawn wood (from 77,000 m3 in 1972 to 1.2 million m3 in 1982);
- In the Philippines a three-fold rise in sawn wood exports is observed during the period;
- New Zealand doubled its exports.

Wood based panels accounted for 20% of the Region's exports in value terms. The export volumes and shares of selected countries are shown below:

Country	<u>Volume (1000 m3</u>)	<u>Value (1000</u> \$)	Value as %of Region's Total
Rep. of Korea	899	315,928	25.3
China	892	374,391	30.0
Indonesia	746	161,967	13.0
Malaysia	597	147,311	11.8
Philippines	394	114,230	9.2
Japan	163	73,732	5.9
New Zealand	110	24,708	2.0
	3,866	1,246,547	100.0

Although the region-wide total of exports of wood-based panels have not undergone a major change (from 3.3 million m3 in 1972 to 3.9 million m3 in 1982) there have been significant shifts within the Region during 1972-82:

- Exports from the Rep. of Korea decreased from 1.0 million m3 to 0.9 million m3, and from Japan from 601,000 m3 to 163,000 m3;
- there is a decline in exports from the Philippines, from 443,000 m3 to 394,000 m3;
- China increased its exports from 784,000 m3 to 892,000 m3;
- Indonesia, starting from a negligible quantity, has built an export volume of 746,000 m3 in ten years.

During the triennium ending 1982, the average annual imports in 27 countries of the Region amounted to US\$10880 million, against exports of US\$6082 million. Thus, the Region as a whole is a net importer of forest
products and the negative trade balance is of the order of US\$4798 million. If only the 24 developing countries are considered (excluding Australia, Japan and New Zealand) the picture that emerges is:

						<u>1972</u>	<u>1982</u>
-	Value	of	imports	(Million	Ş)	550.4	3325.3
-	Value	of	exports	(Million	\$)	1156.6	4838.1
	Trade	ba]	lance (Mi	llion \$)		+606.2	+1512.8

Data on trade balance (forest products) in the countries of the Region shows that the following countries are the major net earners of foreign exchange on account of forest products:

	<u> Trade Balance (1982)</u>
	(US\$ Million (rounded)
Malaysia	+ 1746
Indone sia	+ 1040
Philippines	+ 345
New Zealand	+ 307
Burma	+ 100
Papua New Guinea	+ 64
—	

The major net importers are: Japan, China, Rep. of Korea, Thailand, India and Pakistan in that order. Details are shown below:

Annual Average for Triennium ending 1982

			<u>US\$ Million (rounded)</u>
Country	Imports	Exports	Trade Balance
Bangladesh	4.4	6.7	+ 2.3
Burma	10.8	111.0	+ 100.2
China	1347.5	532.9	- 814.6
Fiji	10.4	4.9	- 5.5
Japan	6659.1	787 .9	- 5871.2
India	181 .9	26.4	- 155.5
Indone sia	170.3	1210.3	+ 1040.0
Malaysia	193.3	1938.8	+ 1745.5
New Zealand	86.0	392.8	+ 306.8
Pakistan	82.2	-	- 82.2
Papua New Guinea	-	64.4	+ 64.4
Philippines	79.3	424.6	+ 345.3
Rep. of Korea	961.6	460.8	- 500.8
Sri Lanka	35.1	0.7	- 34.4
Thailand	229.7	25.5	- 204.2
REGION (27 countries)	10880.1	6082.5	+ 4797.6

Sources, definitions and classification of forestry trade statistics

Trade statistics in forest products are assembled and reported, almost in every country of the Region, by the customs authorities, usually under the Ministry of Commerce. For the purposes of compiling these statistics the following definitions are observed by several countries:

- Imports record all goods which enter the country and are cleared by customs officials or duty or deposit has been paid inclusive of all goods placed in customs bonded warehouse, but exclusive of goods awaiting for customs clearance in the warehouses. No distinction is made between imports for home consumption and imports for re-exports.
- 2. Exports record both goods wholly produced in the country and goods previously included in statistics of imports which are changed essentially in form or which are changed in condition so as to increase the value.
- 3. Re-exports record all goods previously included in statistics of imports which are exported from the country in the same condition as when imported. Minor operations such as sorting, cleaning, re-packing or blending do not affect the status of the re-exported goods.
- 4. Direct transit records all goods which are brought into the customs limit for the sole purpose of transport to another contracting country. These goods are primarily under customs custody while in the country.

The compilations at the national level are made by calendar month and the compilation for the month of December gives data for the months as well as for 12 months (January-December) of the calendar year.

In general values are based on the declaration of importers and exporters, and subsequently verified by customs officials. Imports are compiled from C.I.F. value (Transaction value) to the landed port inclusive of packing, commission and all charges as specified in the commercial invoices approved by the customs officials. Exports are compiled from F.O.B. value at the Port of Departure as declared in the export entry by the exporter. FOB values are drawn from the documents of sale for the actual amount received in terms of national currency, including export duty, if any. Quantities and weights are recorded in units in accordance with the National Trade Nomenclature, but where goods are required to be entered by weight, net weight excluding packing and containers is used, except in case of certain goods as provided in the Customs Tariff, such as weight of immediate packing.

Regarding commodities classification, although the search for greater compatibility of foreign trade statistics has been going on for a very long time, it was not until the nineteen-thirties that significant developments towards the solution of the problem took place. In 1938 the League of Nations published the report of its Committee of Statistical Experts, 'Minimum List of Commodities for International agencies for greater international comparability of trade data. Consequently, the third session of the United Nations Statistical Commission recommended that a revision of the League's 'Minimum List' be prepared to make it more suitable for the analysis of the current character of international trade, and to make it more appropriate to the increased demand for international comparability. In cooperation with governments and with the assistance of expert consultants the United Nations Secretariat drew up the 1950 edition of the United Nations Standard International Trade Classification (SITC).

By 1960 governments of a large number of countries were compiling trade-by-commodity data according to the original SITC or classifications correlated with the SITC, and the major international agencies had adopted it as a basis for the reporting of trade statistics. At the same time, in many European countries and in a number of countries outside Europe (e.g Thailand), customs tariff nomenclature was based on the 1955 Tariff Nomenclature of the Customs Cooperation Council (CCCN). This is an internationally agreed nomenclature in which commodities are grouped according to the nature of the material of which they are made, as has been traditional in Consequently, data based on the CCCN must be renomenclature. customs grouped in order to provide economic statistics, since for economic analysis it is necessary that agggregates be available for classes of goods such as food, raw materials, chemicals, machinery and transport equipment and also for groupings of commodities by stage of fabrication and by industrial The regrouping of CCCN data into the form of the original SITC origin. involved numerous sub-dividions of CCCN headings.

To improve this situation a group of experts from countries and intergovernmental agencies using both the original SITC and the CCCN prepared the SITC (revised) which combined the original SITC and the CCCN. This revision required some modification of both classifications. However, reciprocal one-to-one correspondence was achieved between the SITC, Revised and the CCCN. A second revision, SITC Revision 2, was prepared in 1975 to accommodate changes in geographic and commodity patterns resulting from a rapid increase inworld trade) and governments of a vast majority of countries now regularly make available data according to SITC, Revision 2. The codes relating to forest products in SITC, Revision 2 are shown in Annex 1. Annex 2 contains extracts from the FAO Yearbook of Forest Products on the classification of commodity aggregates and commodity names, with corresponding SITC, Rev. 2 codes.

Annex 1

Classification Scheme of the Standard International Trade Classification (SITC), Revision 2

Classification of the sections, division, groups, sub-groups and items relating to Forest Products:

Under the classification scheme of the SITC, Revision 2 there are nine

section codes:

- 0 Food and Live Animals Chiefly for Food
- 1 Beverages and Tobacco
- 2 Crude Materials, Inedible, except Fuels
- 3 Mineral Fuels, Lubricants and Related Materials
- 4 Animal and Vegetable Oils, Fats and Waxes
- 5 Chemicals and Related Products, NES
- 6 Manufactured Goods Classified Chiefly by Material
- 7 Machinery and Transport Equipment
- 8 Miscellaneous Manufactured Articles
- 9 Commodities and Transactions not Classified Elsewhere in the SITC

The Codes relating to forest products (selected items) are listed in the following pages.

(Annex 1 cont'd.)

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												C	or	r	es	p	эn	d:	in	g	BTI	N	
												1		_	<u>د م</u>	-		~ .	~	.	1		

Group Sub-group Item

heading or subheading____

Section 2 DIVISION 24: CORK AND WOOD Fuelwood (excluding wood 245 245.0 waste) and wood charcoal 245.01 Fuelwood, in logs, in billets, 44.01A in twigs or in faggots (excluding wood waste 245.02 Wood charcoal (including shell 44.02 and nut charcoal), agglomerated or not 246 246.0 Pulpwood (including chips and wood waste) Pulpwood (including chips and wood waste) 246.01 Pulpwood in the round or quarter 44.03A split 44.09A 246.02 Pulpwood in chips or particles 246.03 Wood waste (including sawdust) 44.01B 247 Other wood in the rough or roughly square 247.1 Sawlogs and veneer logs, of coniferous species

- 247.11 ---in the rough, whether or not 44.03B stripped of their bark or merely roughed down
- 247.12 ---roughly squared or halfsquared, but not further manufactured
- 247.2 Sawlogs and veneer logs, of non-coniferous species

Group	Sub-Group	Item	Corre: head	sponding BTN ing or sub- neading
		247.21	in the rough, whether or not stripped of their bark or merely roughed down	44. 03C
		247.22	roughly squared or half squared but not further manu- factured	44.04B
	247.9		Pitprops, poles, piling, posts and other wood in the rough, n.e.s.	44. 03D
			Wood, simply worked, and rail- way sleepers of wood	
24 8			Railway or tramway sleepers (ties) of wood	
	248.1		Wood of coniferous species, sawn planed, grooved, etc.	44.07
	248.2	248.21	Wood coniferous species, sawn lengthwise, sliced or peeled, but not further prepared, of a thickness exceeding 5 mm	
		248.22	Wood of coniferous species (including blocks, strips and friezes for parquet or wood block flooring, not assembled), planed, tongued, grooved, rebated, chamfered, V-jointed, centre V-jointed, beaded centre-beaded or the like, but not further manufactured	44. 05A
	248.3		Wood of non-coniferous species, sawn, planed, tongued, grooved, etc.	
		248.31	Wood of non-coniferous species, sawn lengthwise, sliced or peeled, but not further prepared, of a thickness excee- ding 5 mm	44. 05B

Group	Subgroup	Item	с	orresponding BT heading or sub- heading
		248.32	Wood of non-coniferous species (included blocks, strips and friezes for parquet or wood block flooring, not assembled), planed, tongued, grooved, rebated, chamfered, V-jointed, centre V-jointed beaded, centre-beaded or the like, but not further manufactured	44.13B
		DIVIS	ION 25: PULP AND WASTE	
251			PAPER Pulp and waste paper	
	251.1		Waste paper and paperboard; scrap articles of paper or of paperboard fit only for use in paper-making	47.02
	251.2		Mechanical wood pulp	47.01A
	251.6		Chemical wood, dissolving grade Chemical wood pulp, soda or sulphate	es 47.01B
		251.71 251.72	unbleached bleached or semi-bleached (other than dissolving grades)	47.01C 47.01D
	251.8		Chemical wood pulp, sulphite	
		251.81	unbleached	47.01E
		251.82	bleached or semi-bleached (other than dissolving grades)	47.01F
	251.9		Other cellulosic pulps	
		251.91	Semi-chemical wood pulp	47.01G
		251.92	Pulp, other than wood pulp	47.01 H

Group	Subgrou	p Item		Corresponding BTN heading or sub- heading
DIV	VISION 63	CORK AND	WOOD MANUFACTURES (EXCLUDING F	URNITURE)
633			Cork manufactures	
	633.0		Cork manufactures	
		633.01	Articles of natural cork	45. 03
		633.02	Agglomerated cork (being cor agglomerated with or without binding substance) and article of agglomerated cork	k 45.04 a s
63 4			Veneers, plywood, "improved" or reconstituted wood, and othe wood, worked, n.e.s.	or r
	63 4.1		Wood sawn lengthwise, sliced of peeled but not further prepare of a thickness not exceeding mm	or 44.14 d 5
	634.2		Plywood consisting solely o sheets of wood	f 44.1 5a
	634.3		"Improved" wood and recons tituted wood	-
		634.31	"Improved" wood, in sheets blocks or the like	44.17
		634.32	Reconstituted wood (being woo shavings, wood chips, sawdust wood flour or other ligneou waste agglomerated with natura or artificial resins or othe organic binding substances), i sheets, blocks or the like	d 44.18
	634.4		Wood-based panels, n.e.s.	
		634.41	Blockboard, laminboard, batte board and similar laminate wood products (includin	n 44.15B) d) g)

Group	Subgrou	p Item		Corresponding BTN heading or sub- heading
		634.42	Inlaid wood and wood marquetry	44.15C)
		634.43	Inlaid wood and wood marquetry	, 44.15C)
	634.9		Cellular wood panels, whethe or not faced with base metal	r
			Wood, simply shaped, n.e.s.	
		634.91	Hoopwood; split poles; piles pickets and stakes, etc.	,
		634.92	Wooden beadings and mouldings (including moulded skirting and other moulded boards)	s 44.19 d
		634.93	Wood wool and wood flour	44.12
635			Wood manufactures, n.e.s.	
	635.1		Wooden packing cases, boxes, crates, drums and similar packings, complete	• 44.21 r
	635.2		Casks, barrels, vats, tubs, buckets and other coopers products and part thereof, or wood (including staves)	e F
	635.3		Builders' carpentry and joiners (including pre-fabricated and sectional buildings and assem- bled parquet flooring panels)	y 44.23
	635.4		Manufactures of wood for domestic or decorative use (excluding furniture)	r e
		635.41	Wooden picture frames, photograph frames, mirron frames and the like	, 44.20 C
		635.42	Household utensils of wood	44.24

Group	Subgroup	Item		Corresponding BTN heading or sub- heading
	63	5.49	Standard lamps, table lamp etc.	s, 44.27
	635.9		Manufactured articles of wood n.e.s.	d,
	63	5.91	Wooden tools, tool handle boot and shoe lace etc.	s, 44.25 s,
	63	5.92	Spools, bobbins, etc.	44.26
	63	5.99	Other articles of wood, n.e.s	•
	DIVISION 64:	PAPER,	PAPERBOARD, AND ARTICLES OF PA	PER PULP,
		APER FU	LF, OF FAFER OR OF FAFERBOARD	
641	641.1		Paper and paperboard Newsprint	48.01a
	641.2		Printing paper (other th newsprint) and writing pape in rolls or sheets	an r,
	641.3		Kraft paper and paperboard, rolls or sheets	in
	641.5		Paper and paperboard, in rol or sheets, n.e.s.	ls
	641.6		Building board of wood pulp of vegetable fibre, whether not bonded with natural artificial resins or wi similar binders (fibre buildi board)	or or th ng
	641.7		Paper and paperboard, corr gated, creped, crinkled, en bossed or perforated, in rol or sheets	u- m- ls

Group	Subgroup	Item		Corresponding BTN heading or sub- heading
	641.8		Paper (other than printing and writing paper) and paperboard, impregnated, coated, surface- decorated or printed (not constituting printed matter within group 892), in rolls or sheets	
	641.9		Converted paper and paperboard, n.e.s.	
6 4 2			Paper and paperboard, cut to size or shape, and articles of paper or paperboard	
	642.1		Boxes, bags and other packing containers of paper of paperboard; box files, letter trays and similar articles, of paper or paperboard, of a king commonly used in offices, shops and the like.	
	642.2		Writing blocks, envelopes, letter cards, plain postcards, correspondence cards; boxes, pouches, wallets and writing compendiums, of paper of paperboard containing only an assortment of paper stationery	y y y r n
	642.3		Registers, exercise books, note books, memorandum blocks, order books, receipt books, diaries blotting pads, binders (loose leaf or other), file covers and other stationery of paper of paperboard; sample and other albums and book covers, of paper or paperboard.	e c s - d t c c f
	642.4		Paper and paperboard, cut to size or shape, n.e.s.	þ
	642.8		Articles of paper pulp, paper paperboard or cellulos wadding, n.e.s.	2

Annex 2

EXTRACT FROM FAO YEARBOOK OF FOREST PRODUCTS COMMODITY AGGREGATES AND COMMODITY NAMES

ROUNDWOOD

Figures are given in solid volume of roundwood (or roundwood equivalent) without bark.

Roundwood 245/246/247 Roundwood Roundwood (C) Roundwood (NC)

Wood in its natural Wood in the rough. state as felled. or otherwise harvested, with or without bark, round, split, roughly squared or other forms (e.g. roots, stumps, burls, etc.). It may also be impregnated (e.g. telegraph poles) or roughly shaped or pointed. It all wood obtained from compresses removals, i.e. the quantities removed from forests and from trees outside the forest, including wood recovered from felling and logging losses natural, during the period - calendar year or Commodities included are forest year. and veneer logs, pitprops, sawlogs pulpwood, other industrial roundwood and statistics fuelwood. The include recorded volumes, as well as estimated unrecorded volumes as indicated in the notes. Statistics for trade include, as well as roundwood equivalent of chips residues and and particles, wood charcoal.

Fuelwood + Charcoal 245 Fuelwd + Charco 245 Fuelwd + Charco 725 Fuelwd + Charco 725 Fuelwd + Charco 725 Fuelwd + Charco 726 Fuelwd + Charco 727 Fuelwd + Charco 728 Fuelwd + Charco 729 Fuelwd + Charco 729 Fuelwd + Charco 720 Fu

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The name used in the trade tables is preceded by the Standard International Trade Classification (SITC) Rev. 2 code number. (The prefix EX to a code number indicates that not all commodities listed under the code numbers are included in the statistics shown.)

Fuelwood (C) Fuelwood (NC) 245.01 Fuelwood 245.02 Charcoal	Wood in the rough (from trunks, and branches of trees) to be used as fuel for purposes such as cooking, heating or power production. Wood for charcoal, pit kilns and portable ovens is included. The figures for trade in charcoal are given in weight.
Industrial Roundwood 246/247 Indust Roundwd Industrial Roundwood (C) Indust. Roundwood (NC)	The commodities included are sawlogs or veneer logs, pitprops, pulpwood, other industrial roundwood and in the case of trade, chips or particles and wood residues.
Sawlogs + Veneer Logs 247.1/2 Sawlogs+Veneer Logs	These commodity aggregates include sawlogs and veneer logs - coniferous and non-coniferous.
Sawlogs+Veneer Logs 247.1 Sawlogs+VLogs Sawlogs+Veneer Logs (NC) 247.2 Sawlogs+VLogs (NC)	Sawlogs, veneer logs and logs for sleep- ers Logs whether or not roughly squared, to be sawn (or chipped) lengthwise for the manufacture of sawnwood or railway sleepers (ties). Shingle bolts and stave bolts are included. Logs for production of veneer, mainly by peeling or slicing. Match billets are included, as are special growth (burls, roots,

Pitprops

Pitprops	(C)
Pitprops	(NC)

Ex 247.9 Pitprops

Pulpwood+Particles 246 Pulpwd+part The aggregate includes coniferous and non-coniferous pitprops. Wood in the rough or slabbed wood used

etc.) used for veneers.

in mining operations principally as support members in underground operations.

Sawn pitwood is excluded here but included under sawnwood.

Pulpwood, chips, particles and wood residues

In production the commodities included are pulpwood coniferous and nonconiferous. In trade the aggregate includes, in addition, chips or particles and wood residues. Pulpwood (C) Wood in the rough other than logs - for Pulpwood (NC) pulp, particle board or fibreboard. 246.01 Pulpwood Pulpwood may be barked or unbarked and may be in the form of roundwood or splitwood. In production, it may include the equivalent of wood chips made directly from roundwood.

246.02 + Particles Wood chips and particles Wood which has been deliberately reduced to small pieces from wood in the rough or from industrial residues, suitable for pulping, for particle board and fibreboard production, for fuelwood or for other purposes.

Miscellaneous wood residues 246.03 Wood Residues residues which have not Wood been reduced to small pieces. They consist principally of industrial residues, e.g. sawmill rejects, slabs, edgings and veneer log cores, veneer trimmings, bark (excluding rejects, sawdust, briquettes) residues from carpentry and joinery production, etc.

Other Indust. Roundwood The aggregate includes other industrial roundwood coniferous and non-coniferous

Other Indust. Roundwd (NC)Other industrial roundwoodEx. 247.9 Other Indust.Roundwood used for tanning,
distillation, matchblocks, gazogenes,
poles, piling, posts, etc.

SAWNWOOD

Figures are given in solid volume

The aggregate includes sawnwood Sawnwood+Sleepers coniferous non-coniferous and 248 Sawnwood+Sleepers or sleepers Sawnwood (C) Sawnwood, unplaned, planed, grooved, 248.2 Sawnwood (C) etc. sawn lengthwise, tongued, or produced by a profile-chipped process (e.g. planks, beams, joists, boards,

rafters,

scantlings, laths boxboard,

"lumber", etc.) and planed wood which

may also be finger jointed, tongued or grooved, chamfered, rabbeted, V-jointed, beaded, etc. Wood flooring is excluded. With few exceptions, sawnwood exceeds 5 mm in thickness

Sleepers 248.1 Sleepers

634.1 Veneer Sheets

Plywood

Ex 634 Plywood

Ex 634 Plywood

Pieces of wood or more or less rectangular section laid transversely on the railway roadbed to support the rails. Sleepers may be sawn or hewn.

WOOD BASED PANELS

Figures are given in solid volume

Wood-Based Panels	The f	following	commod	ities	are	included
Ex 634/641 Wood-B Panels	in the	e total -	veneer	shee	ets,	plywood,
	partic or nor	cle board n-compress	and fi sed.	breboa	ard co	ompressed
Veneer sheets	Thin	sheets	of	wood	of	uniform

Thin sheets of wood of uniform thickness, rotary cut, sliced or sawn, for use in plywood, laminated construction, furniture, veneer containers, etc. In production the quantity given excludes veneer sheets used for plywood production within the country.

Plywood, veneer plywood, core plywood including veneered wood, blockboard, and battenboard. laminboard Other plywood such as cellular board and composite plywood. Veneer plywood is plywood manufactured by bonding together more than two veneer sheets. The grain of alternate veneer sheets is corssed generally at right Core plywood is plywood whose angles. core (i.e. central layer, generally thicker than the other plies) is solid and consists of narrow boards, blocks or strips of wood placed side by side, which may or may not be glued together.

(This item includes veneered wood in sheets or panels in which a thin veneer of wood is affixed to a base, usually of inferior wood, by glueing under

47

pressure.) Cellular board is a plywood with a core of cellular construction while composite plywood is a plywood with core or certain layers made of material other than solid wood or veneers.

Particle Board A sheet material manufactured from small pieces of wood or other ligno-cellulosic Ex. 634.32 Particle Bd. materials (e.g. chip, flakes, splintstrands, shreds, shives, etc.) ers. agglomerated by use of an organic binder together with one or more of the pressured, following agents: heat, humidity, a catalyst, etc. (Flax-board Wood wool and is included. other particle boards, with inorganic binders, are excluded.)

FibreboardThe aggregate includes compressed and641.6 Fibreboardnon-compressed fibreboard

Fibreboard, compressed Fibreboard (fibre building board) A panel manufacture from fibres of wood or other ligno-cellulosic materials with the primary bond deriving from the felting of the fibres and their inherent adhesive properties. Bonding materials and/or additives may be added. It is usually flat pressed but may be moulded. Non-compressed includes insulating board with density not more than 0.40 g/cm 3. Compressed includes hardboard with a

> (Similar products made from pieces of wood, wood flour or other lignocellulosic material with added binders are excluded - as are, for example, boards of gypsum or other mineral material.)

density greater than 0.40 g/cm 3.

PULP

Figures are given in weight (air-dry = 10% moisture)

Wood PulpThe following commodities are included inEx251 Wood Pulpthis aggregate: mechanical, semi-chemical,
chemical and dissolving wood pulp.

Dissolving Wood Pulp 251.6 Dissolving Wood Pulp

Wood pulp, dissolving grades. Chemical pulp (sulphate, soda or sulphite) from coniferous or non-coniferous wood, of special quality, with a very high alpha-cellulose content (usually 90% and over) readily adaptable for uses other than paper-making. These pulps always bleached. They are used are principally as a source of cellulose in the manufacture of products such as man-made cellulosic plastic materials, fibres. lacquers, explosives, etc.

Other Fibre Pulp Pulp of fibrous vegetable materials other 251.92 Other Fibre Pulp than wood Including straw, bamboo, bagasse, esparto, other reeds or grasses, cotton linters, flax,

hemp, rags, other textile wastes. Used for the manufacture of paper, paperboard and fibreboard.

PAPER AND PAPERBOARD Figures are given in weight

this aggregate:

Paper + Paperboard Ex 641 Paper and Paperboard

> Newsprint 641.1 Newsprint

Uncoated paper, unsized (or only slightly sized), containing at least 60% mechanical wood pulp (percent of fibrous content), usually weighing not less than 40 g/m^2 and generally not more than 60 q/m of the type used mainly for the printing of newspapers.

The following commodities are included in

writing paper, other paper and paperboard

Newsprint, printing and

EX 641 Paper+Board-Newspr

Printing+Writing Paper

The aggregate includes other printing and writing paper and other paper and paperboard; appears only in tables on direction of trade.

Paper and paperboard other than newsprint

Other printing and writing paper 641.2 Printg+Writg Paper

Paper, except newsprint, suitable for printing and business purposes, writing, sket ching, drawing, etc., made from a variety of blends and with various pulp finishes. Included are such paper as those used for books and magazines, wall paper base stock, box lining and covering calculator paper, rotonews, duplicating, tablet or block, label, lithograph, banknote, tabulating card stock, bible or imitation bible, stationery, manifold, onionskin, typewriter, poster, etc.

Other Paper+Paperboard

Includes construction paper and paperboard, household and sanitary paper, special thin paper, wrapping and packaging paper and paperboard and other paper and paperboard not elsewhere specified. Where detail is available statistics for four categories composing the above are given as follows:-

Household and sanitary paper; special thin

Household Ø Sanitary Paper 641.72 Household Ø Sanitary

paper Household sanitary paper includes and absorbent paper, creped or uncreped, sometimes embossed, made from bleached or unbleached chemical wood pulp, sometimes with a mixture of pulp from waste paper and mechanical. Included are: towelling, napkin, facial tissue, toilet tissue, wadding disposable tissues.

Wrapg+Pakg Paper+Board Ex 641 Wrp+Pack Paper+Bd Wrapping and packaging paper and paperboard paperboards included are Paper or the following: vegetable parchment, greaseproof and glassine paper. Papers made from pure chemical wood pulp or from mixture of chemical wood pulp, cotton fibre pulp, treated (e.g. highly hydrated or hard beaten) to render the resulting paper resistant to grease and water. They are used oil, primarily for packaging frozen, moist or greasy materials like butter, margarine, meat or fish:linearboard: paper or paperboard used as facing material on corrugated or solid paper or paperboard boxes and containers. Fluting medium: paper or paperboard boxes and containers. Fluting medium: paper or paperboard used as medium, when combining paper and paperboard for conversion into a corrugated board. Sack kraft paper: strong paper made from sulphate pulp and used in the manufacture of single, multiwall, sacks. Other kraft wrapping paper: all other papers and packaging made wrapping principally from sulphate pulp. Folding boxboard: all types of paper board used in the manufacture of folding boxes. Other wrapping and packaging paper and paperboard.

Paper+Paperboard NES Ex641 Paper+PaperBD NES Other paper and paperboard not elsewhere Includes: Kraft paper for waxing, asphalting, proofing, laminating, impregnating, water spinning or twisting, gumming, etc., papers manufactured principally from furnishes other pulp and not included than sulphate elsewhere, such as rope and ute paper, folder filtre blotting paper, paper, stock, photographic sensistizing paper, etc., and paperboards not included elsewhere such as shoe board, gasket board, transformer board, press textile board, index pressboard, panel board (automotive) trunk and suitcase board, matrix board, etc.

Construction paper and paperboard

Papers, paper felts and paper boards used in the construction of buildings and other for insulation, structures vapour seal. roofing and flooring underlay, etc. They are made from fully refined material such as weood pulp, waste paper, other vegetable pulp and mineral fibre. Low thermal conductivity moisture resistance, fire resistance, fire resistance, permanency, insect and vermin are desirable characteristics resistance of these materials (excluded are paper, felts, or boards impregnated, saturated, laminated or further manufactured in any way and fibreboard or fibre building board, in the form of insulating board, medium hardboard and harboard).

Special thin paper; papers made for special purposes, their common characteristics being their relative thinness. They may be made from mechanical or chemical wood pulps flax, hemp or cotton fibre. containing Principal characteristics of some of these surface and uniformity of papers are: caliper, freedom from pinholes, strength, close formation, opacity, low permeability, chemical purity - all related to special uses. Examples of types of paper included tissue, condenser and carbonizing are: capacitator paper, cigarette paper, lens tissue, pattern tissue, tea bag paper

Ву

Jamil Ahmed Chowdhury 1/

Introduction

Bangladesh lies in between the latitudes 20 30' and 26 45' north and It is surrounded by India on the western, longitudes 88 and 93 east. northern and eastern sides, by Burma on the southeast and the Bay of Bengal Of the total area of 35.2 million acres of the country, on the south. there are 3.2 million acres of forests under the management of Forest Department, representing 9.2% of the area. Apart from this, there is another 2.4 million acres of forest land known as unclassed state forests under the District Administration where shifting cultivation in the districts of Chittagong Hill Tracts and Bandarban is practised by 13 tribes. The forests of the country are unevenly distributed, low and of productivity type because of its heterogenous character. There are some inaccessible blocks of forests in the eastern hills in Chittagong Hill Tracts and Bandarban (Hossain).

Forests

Four categories of forests in Bangladesh are recognized (Hossain). They are:

a)	Hill Forests	1.57 million acres
b)	Tidal Mangrove forest known as Sundarbans in the Gangetic delta	1.34 million acres
c)	Coastal Accretions	0.06 million acres
d)	Inland 'Sal' forests	0.28 million acres

In Bangladesh, at present, almost all the forest areas are owned by the state. The management of forest lands of the country has been started in the late 19th Century. Since then, the Forest Department is responsible for collection, analysis and reporting of statistics concerning production, consumption etc. of forest produce of the managed forests of the country.

1/ Senior Research Officer, FRI, Chittagong, Bangladesh

The lowest administrative unit of forest administration and management is the Beat headed by a Beat Officer from whom originates the collection of forest statistics. Different printed forms are used for collection of data In every month, Beat Officer sends the data to Range from the field. Officer who compiles the figures of the range and then sends to Divisional Forest Officer (District Officer). Divisional Forest Officer then compiles the data of his division sent by his subordinate officers. He then all forwards forestry statistics of his division to the Conservator of Forests. The Planning Cell of the office of the Chief Conservator of Forests compiles and analyses the data of all the forest divisions of the country for reporting statistics concerning production and sales in the 'Annual The 'Annual Progress Report' is pub-Progress Report' of the department. lished annually by the Forest Department.

Except for the Forest Department, the country has no other set-up for collection of forestry data on traditional sectors. But through projects sponsored by local and international organisations like FAO/UNDP etc. we have many reliable data on traditional sectors. The aim of these projects is to collect information on different aspects of forests on traditional sectors.

The Planning Commission undertakes projects to collect data on supply and demand for forest products to help future development strategies. The Bureau of Statistics, a Government agency, is also engaged in the collection of various data including forestry data from their district level office and collects information from the Forest Department. The Forest Department, at present, has projects like 'Village Forest Inventory', 'Hill Forest Inventory' etc. The objective of these projects is to know the present status of the forest resources, the future yield, etc. Moreover, the Forest Research Institute is undertaking surveys in different fields of forestry products like 'Saw Mill Survey', Minor Forest Products Survey and other relevant surveys to monitor the production and consumption of forest products on traditional sectors. Though, the Forest Department is the main source of collection of data on the production and consumption of fuelwood, unprocessed roundwood,, poles and posts used by homes and traditional the Bangladesh Forest Industries Development Corporation is sectors, engaged in collection of data on charcoal production and other products on the traditional sector as well.

The data on the production and sales on the modern sector industries are sent to the Headquarters of both Bangladesh Chemical Industries Corporation (BCIC) and Bangladesh Forest Industries Development Corporation (BFIDC) at Dhaka by their enterprises like Newsprint mills, Hardboard mills, etc. The Forest Department collects information on treated wood products, furnitures, plywood, veneer wood, etc. both from Bangladesh Forest Industries Development Corporation and Bangladesh Chemical Industries Corporation. So, the relevant data on modern sectors forestry products like that of industrial roundwood, sawlogs, veneerlogs, pulpwood, sawnwood, wood-based panels, pulp and paper etc. can be collected from the Head Offices of Bangladesh Forest Industries Development Corporation & Bangladesh Chemical Industries Corporation.

The other sources of data on modern sectors are the Bureau of Statistics, Forest Research Institute, Planning Commission, Ministry of Trade and Commerce, Besides. these the Plywood Associations also send their etc. data to Statistics Department. The Bureau of Statistics collects data directly from the industries by their professional personnel and publishes them in its periodicals. The Forest Research Institute already published a report on the 'Inventory of Pulpwood Plantation' and undertaking more The Planning Commission has interim surveys in the relevant field. projects to forecast the production and the trend of consumption of the finished goods and explore the possibilities of exporting these finished goods abroad.

The forestry statistics of the country particularly the annual production and consumption of forest products are generally published in the 'Annual Progress Report' of the Forest Department. This Report is then distributed to the organisations and agencies dealing with data on forestry products. Besides various reports, small leaflets covering different information on forest products are regularly published by the Forest Department to be keep the planner as well as general mass of the country aware about the present situation of forest products in the country. The Bureau of Statistics has various publications where forestry statistics are dealt in a separate chapter. The Agriculture Information Services, a publication agency of the Ministry of Agriculture does most of the forestry publications

The organisations other than the Forest Department involved in data collection on forestry products are viz, Planning Commission, Ministry of Industries, Ministry of Trade and Commerce, Bureau of Statistics, Bangladesh Forest Industries Development Corporation, Bangladesh Chemical Industries Corporation etc. These organisations collect data on their respective fields. But no steps by any department has so far been taken to reconcile the data from various sources except the Bureau of Statistics. The Bureau of Statistics is the only organisation engaged in the reconciliation of data from various sources and publication of the same in its periodicals.

The Forest Utilization Division of the Forest Department collects data on market prices and trade statistics on forest products. This division conducts survey in the country to gather market prices of different forestry products. It collects data in prescribed forms. This data is published in the 'Annual Progress Report' of the department. The data regarding capacities of the wood-based industries are available in the reports of the respective industries. The Bureau of Statistics collects data on prices of different forest products and on production and consumption of the forest industries, which then publishes in its regular publications. The Bangladesh Forest Industries Development Corporation and Bangladesh Chemical Industries Corporation receive data on the capacities (installed and attainable from industries controlled by them and published in the annual report.

The foreign trade statistics of forest products are available with the Customs Department of the Government of Bangladesh. The foreign trade section of the Bureau of Statistics collects the export-import data of forest products through its trained personnel from the Customs Department. This is the only source of collection of foreign trade statistics of forests products.

Generally, there are two broad classifications of forest products. (1) Major forest products; and (2) Minor foresty products. The former includes timber, firewood and the latter includes bamboo, golpata, honey, wax and other forest products other than timber and fuelwood.

Again forest products are divided into two classes - one from forest products of mechanical processing and other from chemical processing. Mechanical processing includes sawn timber, plywood, furniture, door and window; while chemical processing inclues paperpulp, paper, newsprint, hardboard, particleboard, etc.

Roundwood products which includes poles, posts and piles both processed and unprocessed, veneer and sawlogs are treated as industrial roundwood in this country.

The timber in roundwood is measure in 'Hoppus' measure, then converted into metric system. The wood-based panel products like hardboard, particle board are both measure in square ft. though the metric system has been introduced in the country from 1st July 1984 under an ordinance.

Pulpwood for newsprint like 'Gewa' of Sundarbans and the treated poles and posts are also measured in true volume and expressed in cu. meter/cu. ft.

Poles, posts, and piles in the non-traditional sectors is also expressed inrunning foot. Bamboo is measure mostly in tons for the industries and in numbers for domestic use. Fuelwood and charcoal are measured in weight, i.e. in maundage and tonnage. The major sources of collection of data are the Forest Department, the Bangladesh Forest Industries Development Corporation, the Bangladesh Chemical Industries Corporation and some private organisations and the periodical reports of international agencies. The agencies compiling this data are the Forest Department, Bureau of Statistics, and the Commerce and Industries Divisions of the Government. Since there are collecting agencies in different ministries, the Bureau of Statistics compiles all the data from all these agencies. This minimizes cost of both operating and overhead expenses as well as simplify the work and dissemination.

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FOREST PRODUCTS QUESTIONNAIRE FOLLOW-UP

Country: BANGLADESH Data Supplied by: FOREST DEPARTMENT

PRODUCTION

Products	Unit	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Sawlogs, Veneerlogs	000 cft	12173.35	14062.46	16290.01	14032.62	
Pulpwood	11 11	4491.00	4294.70	5303.37		
Poles, Piling and						
Posts	8 0	411.54	948.03	294.93	624.96	
Fuelwood	43 JI	22878.58	24006.67	26282.29	29773.00	
Charcoal	mt					642.72
Sawnwood & Sleepers	11 11	1139.51	295.31	751.22	710.35	
Plywood and)	000 sft		749.30	146.50	780687.00	
Blockboard)	000 pis		10.04	10.81	12.63	
)	000 set		340.00	465.00	378.50	
Particle Board	000 ton	2.44*	1.21	2.50	0.54	
Fibreboard (Hard-						
board)	000 sft	18468.00*	19946.00	11115.00	16367.00	14223.00
Woodpulp	mt		40352.89	45408.78	30661.93	32973.76
Pulp other than						
Woodpulp	mt		23741.29	23499.48	28901.71	26704.18
Paper & Paperboard		44.50*	49.10	42.40	28.20	(P)
Newsprint	mt	38.10*	30.40	38.60	26.30	(P)
Other Forest						
Products:						
1. Bamboo	000 nos	78114.85	74027.82	77865.56	92335.21	
2. Golpata	000 mls	1871.96	1820.68	1837.89	1716.35	

SOURCE:

+/ Annual Progress Report of Forest Department (1979, 1980, 1981, 1982)

*/ Forestry Section Statistics - Planning Commission (1983)

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P/ Provisional figures

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FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

BANGLADESH COUNTRY

DATA SUPPLIED BY FOREST DEPARTMENT (Department, office, etc.)

PRODUCTION

PRODUCTS	UNIT	1979	1980	1981	1982	1983
SAWLOGS, VENEER LOGS	'000' cft	+ 12173.35	14062.46	16290.01	14032.62	
PULPWOOD	'000' cft	4491.00	4294.70	5303.37		
POLES, PILING AND POSTS	'000' cft	+ 411.54	948.03	294.93	624.96	
FUELWOOD (Recorded)	'000' cft	+ 22878.58	24006.67	26282.29	29773.00	
CHARCOAL	MT					642.72
SAWNWOOD AND SLEEPERS	'000' cft	+ 1139.51	295.31	751.22	710.35	
PLYWOOD AND BLOCKBOARD	'000' sft '000' pis '000' set		749.30 10.04 340.00	146.50 10.81 465.00	780687.00 12.63 378.50	
PARTICLE BOARD	'000' ton	** 2.44	1.21	2.50	0.54	
FIBREBOARD (Harboard)	'000' sft	18468.00	19946.00	11115.00	16367.00	14233.00
WOODPULP	mt		40352.89	45408.78	30661.93	32973.76
PULP OTHER THAN WOODPULP	mt		23741.29	23499.48	28901.71	26704.18
PAPER AND PAPERBOARD	mt	44.50 38.10	49.10 30.40	42.40 38.60	28.26 26.30	(P) (P)
OTHER FOREST PRODUCTS specify: - Bamboo - Golpata	'000' nos '000' mds	78114.85 1871.96	74027.82 1820.68	77865.56 1837.89	92335.21 1716.85	

Source: + Annual Progress Report of Forest Department (1979, 80, 81, 82).

* Statistical Yearbook of Bangladesh (1983), Bangladesh, Bureau of Statistics.

** Forestry Section Statistics - Planning Commission (1983)

P Provisional figures

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY BANGLADESH

DATA SUPPLIED BY

FOREST DEPARTMENT (Department, office)

	IMPORTS								
		198	30	361	31	198	3 2	361	33
PRODUCTS	TINU	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
CHARCOAL			•		•		•		•
PULPWOOD									
POLES, PILING AND POSTS	'000' cu.m.		1	970.00	23.39	2.06	87.66	0.06 P	3.85
FUELWOOD	MT	43.00 +	0.54		1	i i		1	
SAWLOGS AND VENEER LOGS	cu.m.	1434.00 ⁺	41.31	!	-	20.00	0.30	1778.00 P	06.4
SAWNWOOD AND SLEEPERS		1		-	5		-	1	1
VENEER SHEETS				-	3	l		1	
PLYWOOD AND BLOCKBOARD		1	8	1	-	1	1	1	1
PARTICLE BOARD		1		1	1	1			
FIBREBOARD	lae sq.ft.	9.32*	8.52	3.44	3.49	8.06	10.0	6.72	8.00
WOODPULP OFFHER THAN WOODPULP	MT	20.00	 1.40	248.00	19.75	145.00	12.08	50.00	 4.20
PAPER AND PAPERBOARD	MT	1717.00*	160.69	25.00	4.37	148.00	25.17	2371.00	382.00
OTHER FOREST PRODUCTS Newsprint	Ψ	16624.00 [*]	1234.40	10542.00	1201.89	9163.00	979.10	13984.00	1603.00
Other printing and writing									
Other paper and paperboard	_								
Source: + Economic Indicator	of Banglad	esh (March,	1983); Bang	rladesh Burea	u of Statis	tics			

* Annual Report of Bangladesh Chemical Industries Corporation (1980-81, 1981-82, 1982-83). P Provisional figure from July 1983 to March 1984

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

BANGLADESH COUNTRY

DATA SUPPLIED BY

FOREST DEPARTMENT (Department, office)

	IMPORTS					4			
		361	30	198	1	198	2	198	0
PRODUCTS	UNIT	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
			•		•		•		•
CHARCOAL									
DOOMATNA									
POLES, PILING AND POSTS	1000'cu.m	402.46+	1257.54	312.03	84.25		8	-	1
FUELWOOD									
SAWLOGS AND VENEER LOGS	cu.m.	1789.00+	1.57	128.00	0.15		8	1	1
SAWNWOOD AND SLEEPERS		-	-	l	28.10	•	533.30		1
VENEER SHEETS	kg.	240.00+	0.12	1	-	17643.00	5.88	ł	1
PLYWOOD AND BLOCKBOARD		+ 15158.00	7.33	69964.00	23.12	23868.00			
PARTICLE BOARD									
FIBREBOARD									
WOODPULP	MT	1		•••	+ 636.00	•	+	132.00*	153.00
PAPER AND PAPERBOARD	MT	1	1	•••	2969.00	•	1232.00	5	1
Newsprint									
Other printing and writing	ΤM	•	300.09	•	509.39	•	117.08	1	
Other paper and paperboard									

Source:

+ Economic Indidator of Bangladesh (March, 1983), Bangladesh Bureau of Statistics
* Annual Report of Bangladesh Chemical Industries Corporation (1983-84)
... Quantity not mentioned

REPORT ON COLLECTION, PROCESSING AND PUBLICATION OF FORESTRY STATISTICS IN FIJI

Ram Swarup 1/

Introduction

Until 1974, in spite of the modest areas of natural forest resources, Fiji was a significant net importer of sawn timber. With increasing production from the forests (mostly from indigenous forests) coupled with improvements in equipment and milling efficiency, Fiji is now self-sufficient in sawn timber, veneer and plywood requirements and exports are increasing.

Although at the present time about 90% of the total timber is produced from indigenous forests, as plantations, particularly of pine, mature within the next few years, plantations will begin to contribute significantly to production of timber products. Production from indigenous forests will then be reduced to a low sustainable level.

Production and Consumption of Traditional Sector Products

Posts and Poles

Traditionally, indigenous Fijian people lived in villages called "Bures" (houses) constructed from bush material utilising roundwood for posts, poles for rafters and the roof was thatched. The wall was either thatched or of plaited bamboo.

This type of construction is now being rapidly replaced by buildings constructed with sawn timber and corrugated iron. This is due mainly to high maintenance costs of traditional "bure" particularly in replacement of thatch and because of "modernization".

Measurement

Indigenous Fijians wishing to cut post and poles for traditional house construction from their own land can apply to the Conservator of Forests for "Fijian Free Issue". After the permission is granted to fell the applicant can fell the material and request a Forestry official to measure and authorise the removal of the produce.

Post and poles, either inland or mangrove species are classified into three classes based on diameter at the large end or base:

^{1/} Deputy Conservator of Forests, Ministry of Forests, Suva, Fiji

Class I - 10 cm but less than 25 cm at base Class II - 3 cm but less than 10 cm at base Class III - diameter less than 3 cm at base

Poles over 25 cm diameter at base are measured as for sawlogs. Total length of poles in metres are recorded for each class. Volume in cubic metres are calculated by multiplying the linear metre by the following factors:

> Conversion Factors linear metre to cubic metre Class I conversion factor 1m x 0.023 II 1m x 0.004 III 1m x 0.005

Fijian free issue is recorded and submitted separately but in the Departmental Annual Report it is lumped together and reported as Roundwood production in Appendix III. During 1982 a total of 178.674 m3 of post and poles were measured for "Fijian Free Issue" for traditional use for which fees and royalties were not collected.

Fuelwood (Firewood)

Although Fiji still remains heavily dependent on petroleum for its energy requirements wood is a most widely used fuel for cooking in the rural and the semi-rural areas because firewood is available nearby, inexpensive or free and cheaper than alternative commercial fuels.

Although data on fuelwood production from inland species and mangroves are reported by the Forestry Department in the annual reports, these reflect only a small portion of what is actually being used. The reasons for this are that the owners of forests have customary rights to firewood and do not require licences to remove firewood, hence these are not measured. A lot of illegal removals are taking place. Sales of sawmill slabs and offcuts are often not recorded. The volumes reported in the annual reports are only those for which licences are issued and removals authorised. The study undertaken in 1976 by the Centre for Applied Studies in Development of the University of the South Pacific quotes national food consumption of 350 kg (oven dry) per capita, per annum.

Measurement

There are two ways in which firewood is measured:

(a) Stacked Measure

Firewood produced is stacked on ground or on lorry. The length, width and height of the stack is measure and multiplied to obtain the volume in stacked cubic metres. Stacked cubic metres is multiplied by a factor of 0.75 to convert the firewood from stacked cubic metres to solid cubic metres.

(b) Domestic Firewood Licences

Domestic firewood licences authorise the licencee to remove one headload of firewood daily for the duration of the licence. The licence is issued for a month or up to six months.

One domestic firewood licence is estimated as equivalent to 50 cu.ft/month (1.3 cu.m/month). From the number of domestic firewood licences and duration the total firewood removal is estimated.

In 1982 total firewood removal was recorded as 12,777 cu.m. See Annex I.

(c) Charcoal

In contrast with firewood there is no tradition in the use of charcoal in Fiji. Whatever charcoal is produced caters for barbecue requirements locally.

Measurement

Charcoal is measured and reported in weight. In 1982, 8170 kg were produced. A conversion factor of 0.006 is used to convert charcoal in kilogram to roundwood equivalent in solid cubic metres.

Production and Consumption of Modern Sector Products

Industrial Roundwood

Industrial use of roundwood is confined mostly to use of treated pine posts for fencing, house piles and, to lesser extent, in construction of platform and pole type buildings. Very limited use is made as transmission poles. In 1982 total production was 1845 cu. m.

Measurement is based on top and bottom diameters and length. Volume is calculated using the following formula:

$$V = 0.2618 \text{ L x } (\underline{D^2 \text{ x } d^2 \text{ x } \text{ Dd}})$$

$$1000$$
Where V = volume in cubic meters
$$L = \text{length in meters}$$

$$D = \text{butt diameter in centimeters}$$

$$d = \text{top diameter in centimeters}$$

In practice only top diameter and length are measured and volumes can be looked up in volume tables.

Sawlogs

Sawlogs are produced from indigenous forests as well as from plantations. In 1982 total production was 164.920 cu.m as detailed in Annex I.

Measurement

Sawlogs are measured as follows:

Total length is measured in metres and centimetres and mid-point is found by dividing the total length by two. Mid-diameter is measured in centimetres using diametre tape and rounded down to nearest centimetre. If bark is still intact 2 cm bar allowance is given. If only a portion of bark remains, appropriate allowance is given. Length in metres is rounded down to valid length. Valid length is a figure divisible by 3 e.g. 3.0, 3.3, 3.9, 4.2 etc. Volume of log is calculated by using the formula:

V = // R2L

In practice volume is looked up using a ready reckoner.

Sawn Timber

Milling of logs to produce sawn timber is by far the largest timber industry in Fiji.

Measurement

Sawn timber is measured in cubic metres. Sawnillers are not required to send in records of sawn timber produced. The volume of sawn timber produced is estimated based on roundwood input using recovery figure of 50%. In 1982 estimated sawn timber production was 66,500 cu.m.

Veneer Logs

At the present time indigenous species are main sources for veneer logs. In 1982 a total of 20,200 cu.m of veneer logs were used to produce 7,177 cu.m of veneer and 40,060 cu.m of plywood.

Measurement

Veneer logs are measured exactly as sawlogs and the volume of logs used to produce veneer are included in sawlog volume in Annex I.

Wood Based Panels

Veneer and plywood are the main wood based panels produced in Fiji.

Measurement

Before 1982 veneer and plywood were measured in square metres, veneer converted to 1 mm thickness and plywood converted to 4 mm thickness. At times confusion arose when the conversions were not done to standard thicknesses. After 1982 all veneer and plywood records are in cu.m.

Sources and Methods of Data Collection

For administrative purposes Forestry Department is divided into three territorial divisions, Western, Northern and Southern Divisions. A Divisional Forest Officer is in-charge of each division. Each division is divided into a number of district stations and each station has a number of beats.

Most of the data on sawlog, veneer log, post and poles, fuelwood and charcoal production is collected by Timber Production Officers within the beat who are required to measure and authorize removal of these products. Beat officers issue the necessary statements and removal passes for the measured products. Copies of statements and removal passes are sent to Head office and to Divisional office. Divisional Forest Officers submit quarterly reports and annual reports detailing the removal of various forest products. Departmental Annual Reports are based on various quarterly and annual reports from the field.

Data on production of panel products are obtained direct from the manufacturers.

Trade Statistics

Production of forest products are reported in Departmental Annual Reports. Trade Statistics (import/export) are compiled by Bureau of Statistics on a monthly basis and then compiled annually as Trade Report for the country.

Statistics in the Trade Report is compiled by the Bureau of Statistics from documentation submitted by exporters and importers, or their agents, to the Customs Department as required by the Customs Act.

The value of import is on c.i.f. and exports on f.o.b. basis, all values expressed are in Fijian currency, the exchange rate for Fiji dollars are determined on a daily basis.

Commodity classification is based on Standard International Trade Classification (Revision 2) expanded and contracted to suit Fiji's requirements.
Forest Products Prices

Prices in Fiji, like elsewhere, are determined by supply and demand situation and is left to the free market forces with no interference from the government. On the local market each firm has its own pricing.

Export of forest products requires an export licence from the Conservator of Forests. On the export licence application the prospective exporter has to declare the f.o.b. price of the commodity. Although the Forest Department scans the f.o.b. price to ensure the commodity is sold at not too low a price there are no fixed minimum prices. Although records of export prices are kept these are not published.

Industry Capacity

Forest industry in Fiji is at the present time confined to logging indigenous forests and converting these logs to sawn timber, veneer and plywood. There is very little further processing. Majority of the sawmills in Fiji are small and operate part-time only. Of the 56 sawmills registered in 1983, 3 mills operated by one group accounted for 45% of the total log intake, 9 medium sized sawmills accounted for 33% of the log intake and 44 small sawmills accounted for 22% of the log intake.

By Fiji standards large sawmills, medium size sawmills and small sawmills are classified as those having total annual log intake of more than 30,000 cu.m, 8,000 cu.m and 1,500 cu.m respectively. On the basis of the equipment the sawmills possess it is estimated that sawmills have a total log intake of 213,000 cu.m per annum based on 9 hour shift, 5 days a week.

There is only one veneer and plywood factory in Fiji. According to the company the present output is 40 cu.m of veneer and 20 cu.m of plywood per 2 x 9 hour shift. The potential capacity for veneer is 45 cu.m per 2 x 9 hour shift.

Method of Data Processing

With the exception of compilation of Trade Report, which is done by EDP Services, all other data processing is done manually using electronic calculators.

For some time the Ministry of Forests had been trying to acquire a computer for data processing. The Ministry of Finance has finally agreed and tenders have been called to supply the hardware and the software. Hopefully in 1985 Forestry will have access to EDP facilities.

Publications

Publications that deal with Forestry Sector statistics are covered in the Forestry Department Annual Report and Trade Report by Bureau of Statistics. The last officially released Forestry Department Annual Report refers to 1982 statistics. The 1983 report is now with the printers and not released. The trade report also dates to 1982. The 1983 report has not been approved by Parliament and hence not released. There are no other periodicals on Forestry Statistics by the trade or the Government.

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	Sawlogs	Sawntimber	Roundwood	Fuelwood	Domestic Firewood	Charcoal	Total Funtualent
SOURCE		Measured in converted	Posts and Poles	Solid cubic metres	to stacked volume		in Round Timber
	(^m)	state (m3)	(^m)		(^m ³)	(kg)	(^m ³)
Indigenous Forest Inland	152,973	1177	360	5,992	239	8 , 17C	168,4447
Mangrove	1	8	85	2,589	1		2 , 674
Plantations Softwood Fij1 Pine Commission	11,635		1, 357	4 , c 38			17,030
Forestry Department	168		366		_		534
Hardwood	144		122	158			1,21,
тотац	164,920	477	2,230	12,777	239	8,170	181,109

TIMBER PRODUCTION STATISTICS - 1982

(Note this appears as Appendix III in Forestry Department Annual Report)

Annex I

COLLECTION AND DISSEMINATION OF FORESTRY STATISTICS IN INDIA

By:

C. Narayan Singh <u>1</u>/

General

Throughout most of his existence, man has based his decisions upon knowledge accumulated through experience, and he has relied heavily upon individual shrewdness and intuition in interpreting his experiences. The scientific management movement began at the turn of the century and gradually the need for professional management - for competent and responsible leadership to cope with the increasingly complex problems emerged. The emergence of a cadre of professional managers brought with it the need for information. When information is complete, accurate and timely, the decisions based on it are more likely to be correct. The information technology movement, now gathering momentum, strives to reduce management uncertainty through careful analysis of elements bearing on the decisions, design of systems, utilisation of computers, and other information handling methods. A management information system is now key activity in any large organisation.

The forestry sector has been slow to take advantage of this movement. It was due to a lack of emphasis in the National Forest Policy. The National Forest Policy is being reviewed and a revised Policy is likely to be enunciated shortly. This Policy is likely, to lay adequate stress on building up a data base. Policies are, however, merely ideas. They have to be translated into reality by building an organisation that can carry the ideas to final completion. The Central Forestry Commission was established in 1965 by the government with this in view. It is charged with the responsibility of monitoring the implementation of the National Forestry Policy and collecting statistics on the forestry sector. It, however, acts only as a clearing house for the information collected by various agencies.

Data Acquisition

Input is the weakest link in any information system. In the days when forestry activities proceeded data at a leisurely pace, the annual administrative report - a sample proforma is given in Annexure 1 - served the purpose. The report originates at the level of forest division. The information in the administrative report is culled from various sources like the working plan, compartment histories, control forms, monthly accounts, permits for extraction of forest produce, forms submitted by forest rangers each month and the personal knowledge of the officer writing the report.

----1/ Secretary (C.F.C.), Ministry of Agriculture, New Delhi, India

However, the pace of development activities gradually began to speed up. In 1980 it took a quantum jump when the Sixth Five-Year Plan provided allocations of Rs. 692 crores (Rs. 6,290 million), more than the sum total of the allocations during the first three decades of planned development. Annual reports always had low priority and now there is a time lag of 3-4 years before the annual report is finally produced by the States.

Publication of Forestry Statistics

Publication of forestry statistics dates from 1910-11 when it was published as annual return on statistics relating to forest administration in India. This was published for 9 former part 'A' States and Ajmer, Coorg, and Andaman and Nicobar islands. From 1947, this work was assigned to the Directorate of Economics and Statistics under the Ministry of Agriculture, Government of India. Statistical data is published in the form of Indian Forest Statistics, which is an official publication on forestry statistics in India. The principal data are those relating to area under forest, its classification, out turn of timber and fuelwood and other forest product, revenue and expenditure, staffing, etc. A sample proforma is given at Annexure III.

Industrial Statistics

Detailed and comprehensive industrial statistics are needed by the Government as well as the industry itself for industrial planning and development. Such statistics form the basis of estimation of contribution which the manufacturing industries make to the national income. Collection of industrial statistics is of comparatively recent origin in India. The collection of statistics (Central Rules, 1959) framed under the 1953 Act were notified early in 1960 providing for a comprehensive Annual Survey of Industries (ASI) in India as from 1959, and the Director, National Sample Survey was appointed the Statistical Authority by the Central Government in September, 1960. The coverage of the ASI extends to the entire factory sector, excluding factories under the control of Defence Ministry, technical training institutes and oil storage depots. The ASI adopts a standard classification of Indian Industries. The survey is conducted with reference to the lists of factories, classified according to industry, furnished by the Chief Inspector of Factories.

Forest based industries: Factual and systematic information about industry-wise capacity, location of units, kind and quality of raw material used, production, employment, processes used, wastage involved, etc. in res-pect of the organized industries like pulp and paper, plywood, particles board, fibre board and matches. The only authentic and continuous source of industrial statistics pertaining to forest based industries is the 'Annual Survey of Industries' issues by the Industrial Statistics Wing of the Central Statistical Organization. The Forest Survey of India had made an attempt to survey some wood-based industries in the country in the days when it was known as the Pre-Investment Survey of Forest Resources (PIS). The consumption/capacities of organized industries and the estimates of PIS are given in Annexure II.

Marketing and trade statistics

Unfortunately marketing and trade of forest products statistics have drawn very little attention in India unlike the agricultural sector where marketing and trade aspects have been studied extensively since independence. Little information is available about trade structures, utilisation patterns, stocks, prices, etc. about even the primary forestry products. There is no control over prices, but even the ruling wholesale prices for different timbers including different qualities and size and other raw materials of forest origin in different market centres are not available. For timber and bamboos, the Economic Adviser to the Government of India publishes weekly wholesale prices and wholesale price indices but the coverage of the market centres and species is too limited to be representative for the country as a whole.

India has long been a net importer of forest products. Statistics regarding foreign trade of India including forest products have been compiled and published according to the revised India Trade Classification by the Department of Commercial Intelligence and Statistics, Calcutta under the Union Ministry of Commerce in the "Monthly Statistics of foreign trade in India". In the absence of reliable conversion factors it is difficult to calculate the wood raw material (log volume) equivalent of the products imported and exported in order to arrive at the apparent consumption of wood in the country (home production + imports - exports).

Data processing

The compilation of data received at the State Headquarters is done in office of the Chief Conservator of Forests. The Director General of the Technical Development in the Ministry of Industries, compiles the data for the organised industries, and the Department of Commercial Intelligence and Statistics, Calcutta, the Ministry of Commerce, compiles the data on foreign trade. Compilation is still a manual process though some states have started using computer facilities set up by the State Governments. The Central Forestry Commission and the Central Ministries have access to the facilities of the National Informations Centre set up by the Department of Electronics. The Forest Research Institute and Colleges (FRI and C) set up a computer centre at Dehra Dun in 1983. Steps have been initiated to obtain the necessary software to enable it to function as the centre for data processing for all information relevant to the forestry sector.

Data analysis

There is a growing awareness that sound decisions depend upon a careful study of the factors which bear upon the desired objectives. The concern for conservation and the need for a massive development effort to enable forestry to play its designated role, has built up pressure for more complete information from both internal and external sources.

Data analysis has been a neglected field in the forestry sector, where the information gathered has been used mostly to prepare plans for the Five Year Plans, and to meet immediate objectives. It can be compared with the use of a lamp post for support, rather than for illumination. A base has, however, been built up by the Forest Survey of India, which is charged with the responsibility of inventory and mapping of forest resources. Their analysis has been confined to the data gathered by the organisation. The lateral movement of personnel from the FSI to the FRI and C has provided a foundation for the analysis of data that would start flowing to the latter's computer.

Strategy for future

Having taken a Policy decision on the need for an adequate data base an exercise is now required to build up a system, which has been defined in the management parlance as "a group of inter-related and inter-dependent parts operating in sequence, according to a pre-determined plan, in order to achieve a goal, or a series of goals. The system has to be effective, efficient, simple, dependable, and above all acceptable to all concerned. This is not as easy as it sounds, because the canvas, on which the system is to be designed, is so large. Many experts have compared it to a river system, which is fed by tributaries drawing the water resources of glaciers, surface runoff and underground resources, etc. The river system eventually feeds the ocean.

This analogy provides the basis of the system. Identification of primary input levels, their integration within different sub-systems (divisions/district industries centres/trade organisations), and the designing of a total system need to be taken up immediately. Simulta-neously, methods and procedures like the design of forms, compilation of data and its transmission have to be enunciated in a procedures manual.

One of the obstacles to the adoption of new methods that is envisaged at the moment is the resistance within the organisation to changes. This is more evident in a bureaucratic set up. Functions and practices are established over a period of time. People get accustomed to the procedures, and feel secure in their ability to follow them. Organisation friction may also result in duplicate efforts and poor coordination. This would need careful analysis and may result in existing procedures being modified to suit the objectives. One such example is the design of forms. Many forms have been prescribed in manuals which, in some cases, were written five decades ago. Some forms are redundant, but still have to be filled. Many different forms have been prescribed by the agencies like the Planning Commission, Rural Development and others to monitor the progress of schemes handled by them. The same information is required to be filled in on many different forms. These can certainly be combined and only one set of forms prescribed.

The Seventh Five-Year Plan, now on the anvil, takes note of the fact that statistics is one of the weakest links in forestry. The sub-group on Resources, Planning, Evaluation, and Statistics to suggest allocation of resources has suggested that Rs. 142.00 crores (Rs. 1,420 million) may be allocated to schemes under this sector. The Sixth Plan had provided only Rs. 24.9 million for these schemes and the total allocations before 1980 was only Rs. 16.08 million. It may take a year to build up an organisation, but the exercise on drawing up a management information system manual has been initiated by the Central Forestry Commission.

Annexure 1

FOREST ADMINISTRATION REPORT

Sr. No	Chapter	Title
1	I	Extent and constitution of State Forests
2	II	Management of State Forests
3	III	Roads and Buildings
4	IV	Exploitation of Forest Produce
5	v	Silvicultural Systems Adopted
6	VI	Gross Yield and Outturn of Forest Produce
7	VII	State Trading in Beedi Leaf
8	VIII	Forest Based Industries
9	IX	Saw Mills
10	Х	Plan Schemes (including Social Forestry)
11	XI	State Wide Schemes
12	XII	Wildlife
13	XIII	Forest Research
14	VIX	Forest Administration
15	XV	Forest Offences and Disposal
16	XVI	Publicity
17	XVII	Rights and Privileges
18	XVIII	Recreation Value
19	XIX	Protection of Crops against wind erosion
20	Return # 1	Area under Forests
21	"#2	Boundaries of Reserved Forests
22	"#3	Outturn of Timber from coupes by contractors agency
23	" #4(a) Outturn of Timber from coupes by Departmental agency
24	" #4(b) Outturn of Bamboo from coupes by Departmental agency
25	" # 5	Outturn of Major and Minor Forest Produce
26	"#6	Outturn from plantation and thinnings
27	" # 7	Free Grants
28	"#8	Animals allowed for grazing
29	"#9	Fire and the Extent of area burnt
30	" #10	Offences Detected and disposed of
31	" #11	Forest offences involving lorries booked and disposed of
32	" #12	Goat Browsing cases booked and disposed of
33	" #13	Assault cases (including murders)
34	" #14	Statement showing annual cut
- 35	" #15	Extent of plantations, raised and expenditure incurred
36	" #16	Area brought under plantations
37	" #17	Return of Roads in Forest
38	" #18	Building under Forest Department
39	" #19	Statement showing the vehicles and arms
40	" #20	Forest Expenditure
41	" #21	Forest Revenue

Cubic meter by	Number of	Mills of
capacity per annum	Actual	Potential
4	capacity	capacity
200	9,731	10,063
201 - 500	6,662	6,228
501 - 1000	3,874	7,558
1001 - 2000	1,924	5,847
2001 - 3000	548	1,399
3001 - 4000	133	313
4001 - 5000	75	224
5001 - 6000	36	79
6001 - 7000	97	132
7001 - 8000	87	42
8000+	53	305

SAWMILLING AND WOOD WORKING

Source:

FSI India IND/77/014 Integrated Sawmilling and Wood Working Total amount of logs consumed per annum 13.48 million cu.m. Total amount of output per annum: 8.875 million cu.m. (67%) Total estimated potential capacity of the sawmills in India (per annum): 27.177 million cu.m.

End use of residues: 90% sold or used as fuel

77

THE MAIN END USES OF SAWN TIMBER

1.	Construction	28%
2.	Box wood	18%
3.	Joinery	27%
4.	Furniture	11%
5.	Sleepers	8\$
6.	Others	8\$

Source:

FSI -India IND/77/014 Integrated Sawmilling and Wood Working

Annexure II(C)

REQUIREMENT OF FOREST RAW MATERIALS FOR PAPER AND BOARD INDUSTRIES

(Lakh tonnes)

		Requirement at 2.8 tonnes/
Year	Capacity	1 tonne of paper assuming
		70 % dependence on forests
1981	18,16	28.48
2000	42.50	66.64
(projections)		

Source:

D.G.T.D.

SOURCES OF SUPPLY OF RAW MATERIALS FOR PAPER MILLS

(Lakh tonnes)

Material	From forests within the State	From forests outside the State	<u>From pri-</u> vate areas	<u>Total</u>
Bamboos	19.50	1.93	5.22	26.55
Hardwoods	8.76	0.48	2.27	12.51
Other material	3.87	0.57	1.34	5.78
				44.94

Source:

Working Group to explore raising of industrial plantations - Ministry of Agriculture

<u>Sr. No.</u>	Name of Industry	Est. requirement (<u>lakh cu.m.</u>)
1	Plywood	9.00
2	Matchwood	14.00
3	Sports goods	0.50
4	Railway sleepers	1.30
5	Shoe lasts	8.73
6	Housing	25.00
7	Katha	2.06
8	Pencil	0.02
9	Shuttles and Bobbins	2.80
10	Truck body building	1.12
11	Pitprops for mining	10.00
12	Bullock carts	1.00
13	Agricultural implements	0.05
14	Furniture	2.50
15	Packing cases	20.00
16	Railway coaches	1.10
17	Others	5.15

ESTIMATED REQUIREMENTS OF WOOD FOR FOREST BASED INDUSTRIES (OTHER THAN SAW MILLS AND PAPER PULP) AND MAJOR USERS

Source: Estimates of the Ministry of Agriculture

Annexure III

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PROFORMA ANNUAL FOREST AREA STATISTICS 19 to 19

	Name of	the State/UT	<u> </u>
Particulars	1980-81 <u>1</u> / (<u>Revised</u>)	<u>1981-82</u> <u>1</u> /	1982-83 <u>1</u> / (Provisional)

- I. Classification of Forest Area
- 1. By ownership
 (a) State
- - i) Forest Dept.
 - ii) Other Govt. Depts.
 - Total (i) and (ii)
- (b) Corporate bodies
- (c) Private individuals Total Forest Area (a+b+c)

2. By Legal Status

- (a) Reserved:
- (b) Protected:
- (c) Unclassed
 - i) Under the Forest Dept.
 - ii) Others Total Forest Area (a+b+c)

3. By Composition:

- (a) Coniferous
- (b) Non-coniferous (broad leaved)
- (c) Bamboo
 - i) Pure (including plantations)
 - ii) Understorey 2/ Total Forest Area (a+b+c)

4. By Functions

- (a) Protection forest Production forests
- (b) Under exploitation
- (Forest in use)
- (c) Potentially exploitable Total Productive Forests (a+b+c)

- \underline{l} / Please indicate whether the figures reported are provisional or final.
- The area under mixed bamboo forests with bamboos as an understorey 2/ excluded from the total because the same will be included under nonconiferous areas.

```
5. Management Status
(a) Area covered by working
     Plans/working schemes
(b) Under the management of
     Forest Dept.
(c) Other Forest Areas
       Total Forest Area (a+b+c)
6. Alteration in Forest Area
  (i) Total forest areas as on
      the 1st April of the
      preceeding year
 (ii) Area added during the year:
    - Acquisition from private
      Department
    - Acquisition from private
      individuals
    - Acquisition from corporate
      bodies
    - Acquisition from others
        Total (ii)
(iii) Forest area lost during
      the year
   a) Agriculture
   b) River Valley Projects
   c) Industries
   d) Rehabilitation
   e) Others
        Total (iii)
Total forest area during the year
(i) = (ii)+(iii)
7. Silvicultural Treatment
  i) High Forest
 ii) Coppices
iii) Coppices with standard
 iv) Coppices with reserves
  v) Miscellaneous
Total Forest Area (i) to (v)
```

Note: (i) Total forest given under items 1 to 7 should invariably be the same

- 8. i) Area under Nurseries
 - ii) Area under Nature Reserves
- iii) Area under Biosphere reservesiv) Area under Green Reserves/ Pasture land
 - v) Area under National Parks
 - vi) Area under Sanctuaries

9. Area under varying density of forests

- i) Density less than 0.25
- ii) Density between 0.26 to 0.50
- iii) Density between 0.51 to 0.75
- iv) Density more than 0.75

Particulars	Total area under planta-	Area added during	Provisional 1981-82
	tion up to		
	1/4/80		

- II. <u>Area under man-made forests</u> (Under normal and Plan)
- (a) Coniferous Species

Deodar (Cedrus deodara) Chir (Pinus roxburghii) Kail (Pinus wallichiana) Fir (Abies Pindrow) Source (Pice Morinds)

Total

(b) Non-coniferous species

Teak (Tectona grandis) Sal (Shorea robusta) Eucalyptus sp. Sissoo (Dalbergia sissoo) Casuarina sp. Semal (Salmalia malabirica) Sandalwood (Santalum album) Hollong (D. mecrocarous) Andaman Padauk (Pterocarous delbergioides) Rosewood (Dalbergia latifolia) Bamboo Others Total non-coniferous

III. Area naturally generated:

(a) <u>Coniferous species</u>

i) Deodar (Cedrus deodara)
ii) Chir (Pinus roxburghii)

iii) Kail (Pinus wallichiana)

iv) Others

Total (i) to (iv)

(b) <u>Non-coniferous species</u>

i) Teak (Tectona grandis)
ii) Sal (Shorea robusta)
iii) Others

Total (i) to (iii)

Note: Please indicate whether the figures reported are provisional or final

PROFORMA

ACHIEVEMENTS OF MAN-MADE FORESTS AND COMMUNICATIONS

				2	Achievement	S	
	Schemes	<u>Unit</u>	Up to 1/4/80	During 1980-81	During 1981-82	During 1982-83	During 1983-84 (Target)
1.	Plantation of quick growing species	(ha. area)					
2.	Economic planta- tions of indus- trial and commer cial uses	"					
3.	Farm forestry cum-fuelwood plantations	"					
4.	Rehabilitation of degraded forests	"					
5.	Social Forestry	n					
6.	Communications	kms.					

Note: Please indicate whether the figures reported are provisional or final.

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW-UP

Ci	ountry: I ata Suppli	NDIA od by:	CENTRAL F	OPESTRY	COMMISSION
יש	aca Suppri	eu og.			CONTRODUCTION
Products	<u>Unit</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	1983
Sawlogs, Veneer logs + Poles	million	7.27	8.55	N.A.	N.A.
Pulpwood	million tonnes	N.A.	3.51	4.14	4.09
Poles, Piling & Posts	million	2.43	2.61	N.A.	N.A.
Fuelwood	million	17.48	17.28	N.A.	N.A.
Charcoal (Roundwood equiv.) Sawnwood and Sleepers	cu.m. million cu.m. 22,	3.30 382.50	3.20 173,241.00	N.A. N.A.	N.A. N.A.
Plywood and Blockboard	million sq.m.	32.65	50.20	52.86	59.61
Particle Board	tonnes	-		19,840	21,872
Fibreboard	tonnes	-	_	31,762	29,756
Woodpulp	tonnes		-	115,813	177,667
Pulp other than Woodpulp	tonnes	-		89,279	82,827
Paper and Paperboard	million tonnes	-	-	1.24	1.20
Other Forest Products	million	4.25	3.98	N.A.	N.A.

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY INDIA

DATA SUPPLIED BY <u>Directorate of Commercial Intelligence & S</u>tatistics

	IMPORTS					Department	, office)		
		361	30	198	31	198	12	198	3
PRODUCTS	TINU	Quantity	Value Rs.(000)	Quantity	Value Rs.(000).	Quantity	Value Rs.(000).	Quantity	Value Rs.(000).
CHARCOAL	kg.					10,370	55		
DOODD	tonne		9,407			2	18		
POLES, PILING AND POSTS	tonne					16,619	21,076		
FUELWOOD	tonne		3,295		l,354	543,376	66,031		
SAWLOGS AND VENEER LOGS	cu.m.		27,238		19,319	21,857	30,915		
SAWNWOOD AND SLEEPERS	tonne		11,310		32,680	3, 335	8,318		
VENEER SHEETS	kg.					220,548	1,024		
PLYWOOD AND BLOCKBOARD	kg.		1,360		2,549	720,569	6,851		
PARTICLE BOARD									
FIBREBOARD	kg.					26,435	366		
MOODPULP	kg.					85,591,444	414,390		
PAPER AND PAPERBOARD	kg (000)	371,600	1,865,100	380,000	2,403,200	410,910.4	2,433,913		
Newsprint	kg(000)					350,082.6	1,812,574		
Other printing and writing	kg (000)					42,961.2	331,032		
Other paper and paperboard	kg(000)					17,840.1	289,941		

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY INDIA

DATA SUPPLIED BY Directorate of Commercial Intelligence & Statistics (Department, office)

PRODUCTS UNIT 1980 1981 1981 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 1983 107 1983 107 1983 107 1983 107 1983 107 1983 107 1884 1884 1884 10011 10011 10011 10011 10011 10011 10011 10011 10011 10011 10011 10011 10011 10011 10011 100111 100111 100111 100111 100111 100111 <th>EXP(</th> <th>ORTS</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	EXP(ORTS								
PRODUCTSUNITQuantityValueQuantityValueQuantityValueQuantityValueQuantityValueQuantityValueQuantityValueQuantityValueValueQuantityValue <th< td=""><td></td><td></td><td>198</td><td>0</td><td>198</td><td>1</td><td>198</td><td>22</td><td>198</td><td>e N</td></th<>			198	0	198	1	198	22	198	e N
Intercoll kg.	PRODUCTS	UNIT	Quantity	Value Rs. 000.	Quantity	Value Rs. 000.	Quantity	Value Rș. 000.	Quantity	Value Rs.000.
ULPHOOD come cone	CHARCOAL	kg.					2,403,500	5,107		
POLES, FILING AND POSTS tonne i I<	PULPWOOD	tonne								
ULELMOOD tome a05* a05* a06 66605* a06 66 738 19397 10 1	POLES, PILING AND POSTS	tonne				166	985	1,017		
SAMLOGS AND VENEER LOGS cu.m. $116,157$ $16,157$ $29,666$ $7,388$ $19,397$ $19,397$ SAWNOOD AND SLEEFPERS tonne $4,429$ $5,213$ $2,313$ $2,316$ $2,316$ $2,316$ VENEER SHEETS kg. ron $4,429$ $5,213$ $2,313,187$ $42,934$ 1746 VENEER SHEETS kg. ron ron $2,343,187$ $42,934$ 1746 $12,111,202$ $12,111,202$ $12,136$ $12,$	FUELWOOD	tonne		305*		6,605*	20	66		
SAWIWOOD AND SLEEPERS tome 4,429 4,429 5,213 2,316 2,316 2 VENEER SHEETS kg. kg. kg. kg. kg. 2,33,187 4,934 7,934 PLYWOOD AND BLOCKBOARD kg. kg. kg. kg. 2,343,187 42,934 7,746 </td <td>SAWLOGS AND VENEER LOGS</td> <td>cu.m.</td> <td></td> <td>116,157</td> <td></td> <td>29,666</td> <td>7,388</td> <td>19,397</td> <td></td> <td></td>	SAWLOGS AND VENEER LOGS	cu.m.		116,157		29,666	7,388	19,397		
VENEER SHEETS kg. <	SAWNWOOD AND SLEEPERS	tonne		4,429		5,213	221	2,316		
PLYWOOD AND BLOCKBOARD kg.	VENEER SHEETS	kg.					2,343,187	42,934		
PARTICLE BOARD kg. kg. kg. kg. kg. kg. kg. 7,388 kg. WOODPULP kg. kg	PLYWOOD AND BLOCKBOARD	kg.					4,828,364	37,746		
FIBREBOARD kg. kg. kg. rg.	PARTICLE BOARD									
WOODPULP kg. kg. kg. specify: 21,985 40 PAPER AND PAPERBOARD kg. 5,000,000 59,000 4,060,000 3,582,627 32,825 7 OTHER FOREST PRODUCTS other forest products the specify: the specify: <td< td=""><td>FIBREBOARD</td><td>kg.</td><td></td><td></td><td></td><td></td><td>1,111,302</td><td>7,388</td><td></td><td></td></td<>	FIBREBOARD	kg.					1,111,302	7,388		
PAPER AND PAPERBOARD kg. 5,000,000 59,000 4,060,000 58,500 3,582,627 32,825 Teles OTHER FOREST PRODUCTS OTHER FOREST PRODUCTS Specify: S	WOODPULP	kg.					21,985	40		
OTHER FOREST PRODUCTS specify:	PAPER AND PAPERBOARD	kg.	5,000,000	59,000	4,060,000	58,500	3,582,627	32,825		
	OTHER FOREST PRODUCTS specify:									

-

* Includes charcoal

By:

J. Bagio Widjanarko 1/

Introduction

Forest products statistics in Indonesia were first compiled for teak wood in Java and Madura, areas where teak grows well. This began during the early 20th century and thus, the statistical data for this area is more complete and comprehensive compared to other places. Forest management in Java and Madura is also better than in other areas of Indonesia. In 1961, Java, the Madura forest and some parts in Kalimantan came under the management of "Perhutani", the state forest enterprise. Modern mechanical exploitation of the tropical rainforest began in 1970, notably in Sumatera, Kalimantan and Malukas, where the tropical rain forests were still virgin. Perhutani manages only the teak forest and montane forest in Java and Madura.

Forest products statistics in Java Madura have been regularly compiled up to now, but forest products statistics in other areas just concentrate on the main forest products, in this case logs and sawn timber. In 1980. In-donesia started to ban the export of logs and in 1985 there will be a During this time the wood industries have increased rapidly. total ban. Minor forest products statistics are not as attractive, because the volumes and also the values are small when compared to timber. The most important minor forest products is rattan. Indonesia is presently the biggest rattan supplier in the world. Fortunately, the Directorate General of Forest Utilisation has a forest products statistics project, which collects, processes and disseminates forest products statistics.

Forest Products Statistics

The Forest products statistics are compiled by the Directorate General of Forest Utilization which has four directorates and a secretariat.

1. The Directorate of Forest Exploitation executes collection of data on logs, fuelwood and charcoal from the monthly reports by the concession holders and the forest district reports. After analysing and processing the data they send a monthly report to the secretariat for internal use.

Chief, Sub-Directorate, Forestry Resources Quality Control, Kepala Subdit, Bina Mutu Hasil Hutan, Jl. Gatot Subroto, Jakarta, Indonesia

^{1/}

- 2. The Directorate of Forest Products Industries collects data on sawn timber, plywood, pulp, block board and other processed forest products and also on minor forest products such as rattan, pine resin, kayuput oil, tengkawang seed, etc. These statistics are given in a supplement to the monthly report to the Director-General of Forest Utilization.
- 3. The Directorate of Forest Utilization Planning receives all statistics and uses them for forest utilization planning.
- 4. The Secretariat of the Directorate-General of Forest Utilization keeps all the reports, including supplements (Forest Products statistics).
- 5. the Directorate of Forest Products Marketing has a Forest Products Statistics project and this project does better than the others, but only regarding the export data.

Sources of Data

- Monthly report of Forestry District Office

 Urgent questionnaire (issued by Dittib)
 - Recapitulation
- 2. Monthly report of company/exporter
- 3. Official Trip Reports
- Central Bureau of Statistics
 Monthly Brief Report
 - Annual Report
- 5. Bank of Indonesia
 - Monthly Report
 - Annual Report
- 6. Perum Perhutani (State company for Indonesian Forest in Java)
- 7. FAO, Japan Lumber Journal

Method of Data Processing

All input data which are monitored should be reviewed by using monitoring forms based on the source of data. By the end of each year a cross checking should be carried out between the data within the Forestry Department and bodies outside the Forestry sector like BPS & BI. Data from BPS and BI are to be processed according to importance and adjusted with those available within the Forestry Department. Data is based on calendar year (January to December).

Distribution

- To every Directorate of Department of Forestry
- To Forestry Districts throughout Indonesia
- To any other Offices concerned
- To companies/exporters
- To Universities

Other Departments

- 1. Department of Trade
 - a. Export Statistics

Export statistics are based on statistical data issued by:

- International Trade Centre (TC)
- United Nations Statistics Office (UNSO)
- Yearbook of Forest Products (FAO)
- Central Bureau of Statistics
- International Association for Each Commodity
- National Association for each Commodity
- Department of Forestry
- End Use Surveys
- b. Production Statistics
 - Production Statistics are based on Statistics issued by: - Department of Forestry
 - National Association for each Commodity
 - Questionnaire filled by Company/Producers

2. Department of Industry

Statistics of Department of Industry based on:

- Central Bureau of Statistics
- Department of Trade
- Questionnaire filled by Company/Producers
- 3. Bank (Department of Finance)

Statistics of Department of Finance (Bank) are based on:

- Department of Forestry
- Bills of Lading
- Letters of Credit
- Central Bureau of Statistics

4. Central Bureau of Statistics

Statistics issued by Central Bureau of Statistics are based on:

- Department of forestry
- Department of Trade
- Department of Finance (Custom and Bank)
- Letters of Credit

- 5. Perum Perhutani (State Company for Indonesian Forests of Java)
 - Statistics issued by Perum Perhutani are based on:
 - Reports of the members
 - Department of Forestry
 - Their own surveys
- 6. <u>APKINDO</u> (Association of Wood Panel Producers of Indonesia)
 - Statistics issued by APKINDO are based on:
 - Reports of the members
 - Department of Forestry
 - Their own surveys
- 7. I.S.A. (Indonesian Sawmillers Association)
 - Reports of the members
 - Department of Forestry
 - Their own surveys
- 8. <u>M.P.I.</u> (Indonesia Timber Board)
 - Statistics issued by M.P.I. are based on:
 - Reports of the members
 - Department of Forestry
 - their own surveys

Forest Products Questionnaire - Follow-up

Country: INDONESIA Data supplied by: DEPARTMENT OF FORESTRY

PRODUCTION

Products	Unit	1980	<u>1981</u>	1982	<u>1983</u>
Sawlogs, Veneer logs**	x1,000 m3	27 , 559	23,334	22,448	25,470 *
Pulpwood		-	-	-	-
Poles, Piling and Posts	-	-	-	-	-
Fuelwood	Sm	-	-	413,594	180,556
Charcoal	ton	42,920	39,696	35,068	32,994
Sawnwood and Sleepers	x1,000 m3	4,797	5 ,2 50	5,750	6,302
Plywood and Blockboard	x1,000 m3	1,011	1,552	2,140	2,943
Particle Board		-	-	-	-
Fibreboard			-	-	-
Woodpulp		-		-	_
Pulp other than Woodpulp)			-	-
Paper and Paperboard		-	-	·	-
Other Forest Products					
Specify	K.G.	207,907,977	152,760,121	159,701,233	174,522,840

* Estimate

** In 1986 sawlogs and veneer logs will be split

1. REKAPITULASI EKSPOR HASIL HUTAN NON KAYU

TAHUN 1980 MENURUT JENISNYA

	Jonis Hasil Hutan	Volume	Nilai
		(kg.)	(US Dol.)
A.	<u>Hasil Pengolahan/Indust</u>	ri	
1.	Minyak kayu putih	4.880	788
2.	Minyak Nilam	690.557	11.606.051
З.	Minyak Kenanga	47.542	708,729
4.	Minyak Akar Wangi	101.993	1.835.143
5.	Minyak Eteris lainnya	290.102	2.995.395
6.	Daging/Hati rotan	12.028.369	13.297.221
7.	Kulit rotan	3.804.305	4.476.835
8.	Arang kayu	42.920.498	3.618.399
9.	Tikar Pandan	16.151	26.349
10.	Lampit/Tikar Rotan	966.254	7.608.304
11.	Kapur Barus	430	1.163
12.	Korek Api	108.623	188.092
в.	Bahan Mentah		
13.	Kulit kayu manis	14.576.263	11.985.431
14.	Rotan belum dikerjakan	64.049.916	57.424.434
15.	Biji Tengkawang	9.489.025	6.185.352
16.	Buah Asam	443.028	66.747
17.	Biji Kemiri	341.269	31.354
18.	Biji Palm	42.929.429	11.168.405
19.	Getah Jelutung	4.030.565	8.829.967
20.	Getah Merah	17.210	6.992
21.	Kemenyah	476.878	194.944
22.	Getah Perea	1.342	9.605
23.	Damar	5.081.165	1.559.084
24.	Kopal Melengket	535.986	265.728
25.	Kopal Loba	116.120	50.972
26.	Kopal lainnya	1.016.581	479.927
27.	Sarang Burung	56.047	443.863
28.	Kulit Buaya	42.459	359.788
29.	Kulit ular	105.375	506.698
30.	Kulit Biawak	51.183	132,906
31.	Bambu	46.500	3.432
32.	Cassia fistula	61.050	20.980
33.	Gambir	2.685.241	1.251.035
34.	Ijuk aren	540.306	405.884
35.	Kayu Bakar	75.000	20.250
36.	Daun Nilam	131.235	14.764
	Jumlah	207.907.977	147.291.011

I.	REKAPITULASI	EKSPOR	HASIL	HUTAN	HON	KAYU	TAHUN
		1981 MI	ENURUT	JENISI	AYA		

	Jenis Hasil Hutan	Volume	Nilai
		<u>(kg)</u>	(US\$)
Α.	Hasil Pengolahan/Industri		
1.	Minyak Kananga	53.645	683.224
2.	Minyak Nilam	528.964	8.491.197
3.	Minyak Akar Wnagi	46.110	587.800
4.	Minyak Cendana	78.600	1.033.420
5.	Hati Rotan	13.043.481	14.075.650
6.	Kulit Rotan	5.338.362	5.052.993
7.	Arang Kayu	35.849.328	3.268.627
8.	Arang Lainnya	3.847.000	747.230
9.	Tikar Pandan	22.101	79.060
10.	Tikar Rotan/Lampit	490.432	4.046.657
11.	Kapur Barus	10	373
12.	Minyak Esteris lainnya	201.810	1.826.750
Β.	Bahan Mentah		
13.	Sarang Burung	70.886	201.583
14.	Buah Asam	692.134	68.949
15.	Kulit Kayu Manis	7.757.690	8.194.603
16.	Biji Kenari	75.000	2.250
17.	Biji Kemiri	460.085	139.997
18.	Biji Tengkawang	15.462.972	10.191.992
19.	Kayu Gaharu	7.530	15.515
20.	Bupuk Cendana	107.945	14.663
21.	Daun Nilam	176.909	43.501
22.	Getah Kopal	1.425.150	739.880
23.	Getah Damar	853.005	317.765
24.	Terpentin	757.340	539.782
25.	Getah Merah	8.550	2,867
26.	Getah Perca	43.843	135.418
27.	Shellac	135.000	101.000
28.	Getah Jelutung	2.898.040	6.770.996
29.	Getah lainnya	136.550	108.133
30.	Damar Mata Kucing	2.132.215	1.172.002
31.	Damar Batu	3.844.803	385.573
32.	Bambu	107.181	60.913
33.	Rotan Belum dikerjakan	49.090.706	49.519.013
34.	Ijuk Aren	482.139	385.133
35.	Gambir	1.371.503	634.179
36.	Biji Palm	4.890.002	1.907.769
37.	Biji Pala	6.114	73.878
38.	Kulit Ular	16.683	65.267
39.	Kulit Biawak	73.000	2.700
40.	Gondorukem	19.983	83.542
41.	Temu lawak	234.120	2.800
42.	Kumis Kucing	30.000	1.500
43.	Kulit Buaya	29.000	14.600
	Jumlah	152,760.121	122.004.523

I. REKAPITULASI EKSPOR HASIL HUTAN NON KAYU MENURUT JENISNYA TAHUN 1982

Jenis Hasi	1 Hutan	Volume (kg)	Nilai (US\$)
A. Hasil Pengola	han/Industri		
l. Minyak Kayu F	Putih	1.200	2.880
2. Minyak Kenang	ja	29.210	668,684
3. Minyak Akar W	Jangi	63.126	1.607.322
4. Minyak Cendan	a	13.200	819.991
5. Minyak Nilam		515.287	7.735.542
6. Minyak Eterin	n lainnya	228.578	1,550,283
7. Hati Rotan	•	17.376.319	18.449.195
8. Kulit Rotan		26.395	60.397
9. Arang Bakar		30.661.451	1,591,310
10. Arang Kavu La	ainnva	4,406.600	876.023
11. Tikar Pandan	· · · · · · · · · · · · · · · · · · ·	4.522	7.387
12. Tikar Rotan		718.789	6.942.029
B. Bahan Mentah			
13. Sarang Burung	T	66.743	451.138
14. Kulit Kavu Ma	nis	16.766.220	19.218.084
15 Biji Kemiri		449.691	194.571
16 Biji Pinang		7.074.804	2.934.802
17. Biji Pala		7.722.550	8.254.017
18 Biji Tengkawa	nα	1,122,536	639.535
19 Kayu Gaharu		43.163	142,270
20 Bubuk Cendana	a	340.000	123.312
21. Daun Nilam	^	153.850	58.625
22. Getah Kopal		1.251.110	671.057
23. Getah Damar		656.649	229.699
24. Getah Jelutur	na	2.869.243	4.470.982
25. Getah Perca		1.017	9.806
26. Getah Merah		4.100	1.688
27 Terpentine		724.857	523.533
28. Rotan W & S		51,262,127	50.190.874
29. Resin Mata Ku	ucing	2.815.400	192.861
30. Resin Batu	,	4.215.323	420,199
31. Resin Hutan		120.00	6.000
32. Resin lainny	a	41.850	22.017
33. Bambu		1.512	1.830
34. Ijuk Arang		538.630	542.541
35. Kulit Duava	& Biawak	16.671	54.562
36. Kulit Ular		56.854	331.905
37. Rotan belum	dikerjakan	7.311.142	7.031.027
38. Temu Lawak	-	15.000	777
39. Kumis Kucing		30.760	5.055
40. Buah Asam		508 .97 0	43.976
41. Cassia Fistu	la	5.870	14.341
42. Thellac		25,000	29.675
43. Gambir		1.644.914	809.778
Jumlah		<u>159.701.233</u>	<u>137.921.470</u>

I.	EKSPOR	HASIL	HUTAN	NON	KAYU	PER	KOMODITY
		_	TAHU	V 198	33		

	<u>Jenis Hasil Hutan</u>	Volume	Nilai
		(kg.)	(US\$)
			<u> </u>
A.	Hasil Pengolahan/Industri		
1.	Minyak Kayu Putih	825	312
2.	Minyak Kenanga	31.580	1.114.152
3.	Minyak Nilam	496.658	7.641.195
4.	Minyak Akar Wangi	36.655	1.043.529
5.	Minyak Cendana	12.250	972.251
6.	Minyak Tengkawang	66.240	126.751
7.	Minyak Eteris lainnya	252.864	2.302.628
8.	Anyaman/Tikar Rotan	789.705	7.373.459
9.	A n yaman/Tikar Pandan	9.112	8.763
10.	Arang Bakau	32.452.030	1.865.349
11.	Arang Kayu lainnya	541.900	76.641
в.	Bahan Mentah		
12.	Rotan W&S	38,556,946	34.791.609
13.	Hati Rotan	22.581.687	26.157.241
14.	Kulit Rotan	11.673.894	9.248.126
15.	Sarang Burung	62.685	485.574
16.	Buah Asam	125.400	10.019
17.	Kayu Gaharu	39.027	121.361
18.	Bubuk Cendana	553.650	136.729
19.	Temu Lawak	71.500	11.292
20.	Kumis Kucing	87.976	60.156
21.	Biji Tengkawang	16.905.605	8.026.562
22.	Gambir	1.672.052	913.551
23.	Biji Pala	6.283.859	5.665.521
24.	Biji Pinang	5.888.657	1.644.071
25.	Daun Nilam	171.795	64.889
26.	Cassia Fistula	39.500	7.576
27.	Shellac	15.000	14.350
28.	Kayu Manis	18.843.515	23.086.950
29.	Kopal	1.719.442	868.998
30.	Damar	405.074	162.587
31.	Terpentine	291.7 60	113.552
32.	Jelutung	1.980.700	3.314.552
33.	Resin	10.999.217	4.257.028
34.	Getah Merah	2.200	721
35.	Ijuk Aren	564.861	486.180
36.	Kulit Biawak	30.005	103.732
37.	Kulit Buaya	11.082	101.670
38.	Kulit Ular	70.325	290.056
39.	Bambu	179.755	60.255
40.	Madu	5.850	3.685
	Jumlah	174.522.840	142,743.623
		dispersive spin, share their rates and a star rate was	

Country: INDONESIA Data Supplied By: DEPARTMENT OF FORESTRY (Department, Office)	IMPORTS	1980 1981 1982 1983	oducts Unit Quantity Value Quantity Value Quantity Value Quantity Value	al kg. 3.233.222 4.451.201 3.604.663 3.356.566 od Piling and Posts od and Veneer Logs od and Sleepers Sheets Sheets Sheets the Doard and Plockboard the Doard the Doar
			Produc	Charcoal Pulpwood Poles, Pil Fuelwood Sawnwood a Veneer She Plywood ar Particle E Fibreboard Woodpulp Paper and Newspr

FOREST PRODUCTS QUESTIONNAIRE-FOLLCW-UP

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW-UP

					• 7	(Departn	kent, Office)		
		196	10 EXPORTS		1981		1962	Ä	83
Products	Unit	Quantity	Value (US\$)	Quantity	Value (US\$)	Quantity	Value (US\$)	Quantity	Value (US\$)
Charcoal Pul <i>tw</i> ood	ton	42.920	3.618.399	39.696	4.015.857	35.068	2.467.333	36.307	2.095.588
Poles, Piling and Posts Fuelwood									
Sawlogs and Veneer Logs	ഘ്	14.583.369	1.559.303.938	6.391.331	664.308.224	3.103.468	312.143.267	2.959.300	276.787.210
Sawnwood and Sleepers	ື້ອ	1.203.366	258.104.367	1.262.579	221.416.801	1.221.952	184.250.762	1.424.000	222.324.420
Veneer Sheets	ν u	1	1	ł	,	127.184	16.608.932	74.000	15.763.260
Plywood and Blockboard	т	245.014	55.736.463	772.381	150.175.389	1.232.313	282.270.007	2.106.100	509.719.900
Particle Board Fibreboard									
Woodpulp									
Paper and Paperboard									
Other Forest Products							,		
Specify:	ton	207.908	147.291.011	152.760	122.004.523	159.701	137.921.470		

Country: Indonesia Data Supplied By:

FORESTRY STATISTICS IN THE REPUBLIC OF KOREA

Ву

Jeon Jin-Pyo 1/

Forestry Statistics

General Observations, Organization and Procedures

The Forestry Administration is responsible for the collection and publication of Forest and Forest products statistics. It establishes the statistical methods, standards and procedures which are designed to produce the data for the beginning of each year.

The sources of such data are principally found in administrative records and returns. The Ministry of Commerce & Industry maintains records of pulp and paper production.

The Customs Administration in the Ministry of Finance maintains records of imports of round sawlogs and sawn woods. The Forestry Administration also supervises the collection of domestic forest products data. It is aided by the Provincial, county and City Administrations in these processes. The following flow of diagram may serve as an illustration of these activities.



Combined Forest Statistics

Sources, Collection methods of traditional forest products data

Data are collected on a routine basis concerning 10 product groups divided into 50 classes of goods. (Annex 1)

1/ Forestry Administration, Seoul, Republic of Korea

Round wood	Mushroom (5 classes)
Bamboo	Resin products (3 classes)
Farming materials (3 classes)	Tannin (3 classes)
Fuel (4 classes)	Fibre (5 classes)
Fruits & Nuts (13 classes)	Medicinal products (4 classes)
Others (8 classes)	

The collection methods vary, depending upon the product groups and classes upon the time of year that production is in progress.

The sources and collection methods for modern sector forest products are given in Annex 2 of this paper.

Data collection, analysis, publication and dissemination of data

The Division of Forestry Administration collects and analyzes the data provided by the various sources, detailed in paragraph 1. The Forestry Administration publishes the forestry statistics yearbook at year end every year and disseminates this book to universities, colleges and the relevant agencies.

Other Organizations involved in data collection and the reconciliation of data from these sources

As mentioned earlier, the Ministry of Commerce & Industry, the Customs Administration of the Ministry of Finance, the Provincial, County and City Administrations cooperate with the Forestry Administration in this activity. The classes of raw materials and forest products and the form of measurement to be used are defined in the relevant statutes. In principle, the metric system is followed though inappropriate but the use of customary measurement units is permitted.

Methods for collection, dissemination of prices of forest products and of industrial capacities

- Wholesale prices of traditional products are researched by sample personal surveys among traders
- Prices of modern forest products are collected in the course of the survey of actual transactions between producers and consumers
- The capacity of the various sectors of the forest products consuming industries is estimated from a survey within the relevant industrial sectors.
- Producers are asked to state their maximum output of materials, assuming 300 day year, 25 day month and 24 hour day

Trade Statistics

Source of Data

The Administration and the Ministry of Finance should supervise trade statistics. The statistics are compiled from export/import declarations including imports authorized to be released or used before issuance of an import permit.

Statistical Area

The interior is the region where the Korean Customs Law is enforced.

Statistical Timing

Exports are counted in the month when the vessel or aircraft carrying them departs from Korea. Imports are counted in the month in which they were permitted. In the case of goods authorized to use freely before an import permit is issued, imports are counted to the authorized month.

Classification of goods

Goods are classified according to the "Customs Cooperation Council Nomenclature." Sub-groups are added to meet any special characteristics of Korean foreign trade.

Annex 1

List of traditional forestry products

<u>Classes</u>	Unit	Subjects
Timber	cu.m.	
Bamboo	Bundle	1 m string in length
Farm materials	M/T	Green manure, composed forage
Fuel	M/T	Firewood, charcoal, leaves and branches
Nut and Fruits	kg.	Chestnut, Walnut, Jujube, Pinenut, Acorn seed, Gingko nut, oil paulownia Canellia nut, Torreyanut, Raspberry pineseed
Mushrooms	kg	Pine Mushroom, Black Fungus, Oak mushroom, Oyster mushroom, etc.
Resin	kg	Resin, Oriental lacquer, etc.
Tannin	kg	Chinese galls, Alder cones, etc.
Medicinal	kg	Medicinal herbs, Macrocar pium fruit Phellodendron bark, etc.
Fibre	kg	Kuzu fiber, papermulberry bark, Diptri bark, Bush clover bark
Oak cork	kg	-
Bamboo shoot	kg	-
Wild vegetable	kg	
Oak leaves	Box	-
Smilax leaves	Box	-
Squirrel	number	-
Soil land stone	cu.m.	
Sources and methods of collection of data

on modern sector forestry products

	<u> </u>	1		survey	survey			Announe	control
Agency	Item	unit	frequenc	y _{method}	office	subject	capacity	cement	agency
Forestry	timber	3	Annual	whole	local	Felling & supply Amet.		End-year	Economi
Administ-	pulpwood	3 	**	H	F. A.	pulp product & supply Amt.	-		Planning Board
ration	pit-	3	11	11	**	Coal product, pitprops	-		
	props					Amt.			
	Plywood	NSF	**	49	**	Company & employee number	MSF 6,961000		
						Capacity, product & supply			
						results, product & supply			
						plan	L -		
	particle-	MSF	••	11	**	,, 11	MSF 141,000		
	Board								
	hard -	MSF			F. 'A.)/	900sheets		
	Board								
		3					3		
	Sawnwood	m	17	**	local	Compan y & employee number	8,177000 m (
						log usage Amt, goods			
						product			
	charcoal	M/T		"	••	Productor, production Amt	_		
						supply amount, value			
	forest	us\$	monthly	sample	company	plywood price	-		
	product					timber price			
	price					forest by_product			
Ministry									
of Commerc	e								
& Industry	pulp &	M/T	monthly	whole	company	Company & employee number	2,232,000M/1	ŗļ	
	paper	M/T				Capacity	30 7,000 M/1		
Customs	imported								
Adminis-	log	м́/Т ₃	monthly	13	customs	'Imported Amt.of logs &	307,000 M/1		
tration	0	r m -				sawnwood			
	Sawnwood								
			 	1					

COUNTRY Rep. of Korea

DATA SUPPLIED BY <u>Forestry Administration</u> (Department, office, etc.)

PRODUCTION

PRODUCTS	UNIT	1980	1981	1982	1983
SAWLOGS, VENEER LOGS	1,000 ^{3n³}	487	593	645	705
PULPWOOD	1,000 793	393	287	339	317
POLES, PILING AND POSTS	1,000 313	515	628	639	633
FUELWOOD	1,000 7/7	4,700	4,443	4,343	4,404
CHARCOAL	MIT	2,106	2,922	1,925	1,091
SAWNWOOD AND SLEEPERS	1,000 273	2,977	2,912	2,944	3,452
PLYWOOD AND BLOCKBOARD	1,000 7,2	4,238,137	4,302,955	3,828,864	4,012,237
PARTICLE BOARD	1,000 [°] /F	80,811	187,640	97,673	118,259
FIBREBOARD	MIT	12,987	7,025	9,937	10,751
WOODPULP	1,000 [~] / ₇	167	206	235	242
PULP OTHER THAN WOODPULP	-				
PAPER AND PAPERBOARD	1,000 /7	1,680	1,783	1,738	1,982
OTHER FOREST PRODUCTS specify:					
Wood Residues	1,000 ^{m 3}	601	576	645	677

COUNTRY Rep.4 Korea

DATA SUPPLIED BY Forestry Administration (Department, office)

	IMPORT'S								
		19	80	198		361	32	198	3
PRODUCTS	UNIT	Quantity	Value & Appe.	Quantity	Value */???	Quantity	Value Value	Quantity	Value
CHARCOAL									
PULPWOOD								23	969
POLES, PILING AND POSTS									
FUELWOOD									
SAWLOGS AND VENEER LOGS	1,000 m ³	6, 141	838,237	5, 558	634, 635	5, 671	611,327	6 , 518	587,472
SAWNWOOD AND SLEEPERS		1	1	1	I	116	28,784	563	13,722
VENEER SHEETS									
PLYWOOD AND BLOCKBOARD						176	3	655	4
PARTICLE BOARD									
FIBREBOARD									
WOODPULP	1,000 77	464	223,406	517	245, 663	436	175,831	503	174.556
PAPER AND PAPERBOARD	11	31	41,501	36	53, 278	38	54,421	25	64,202
Newsprint		ł	1	l	1	1	ł	3	8
Other printing and writing	=	0.5	645	2.0	1,023	1	1,304	1.4	2,106
Other paper and paperboard	=	30.5	40 , 856	35.3	52,255	37	53,117	50.6	62.096

FOREST PRODUCTS QUE	STIONNAIF	KE - FOLLOW	J UP						
					COUNTRY	Rep.•	f Korea		
			DATA	SUPPLIED B	r For	estry Admi	nistratio	Ľ	
EXP	ORTS					(Department	, office)		
		198	30	361	31	198	2	198	3
PRODUCTS	UNIT	Quantity	Value Z <i>ippo</i>	Quantity	Value X /	Quantity	Value & 1000.	Quantity	Value **
CHARCOAL									
PULPWOOD						:			
POLES, PILING AND POSTS									
FUELWOOD									
SAWLOGS AND VENEER LOGS									
SAWNWOOD AND SLEEPERS	1,000 m ³	376	82,262	241	48,483	339	65, 194	254	38,460
VENEER SHEETS						5	1, 684		50 Q
PLYWOOD AND BLOCKBOARD	1,000 %F	2,564,000	352, 199	2,896,000	391, 645	1,740,000	201, 126	936,000	1601(01
PARTICLE BOARD	1 000 5/F	23, 286	1,907	- 0		1	1	1	1
FIBREBOARD		1	ł	1	1	-	1	1	1
MOODPULP	M/7	28	56	12	25	8	1	1	
PAPER AND PAPERBOARD	1,000 /	154	97,364	179	108,507	115	64,700	66	57,888
OTHER FOREST PRODUCTS specify:									

By:

Lockman M. Sirin 1/

Background

Malaysia has a total land area of 33 million hectares of which approximately 62% or 20.4 million hectares are under tropical rainforests. The extent of the forested area by region is as shown below:

Tab	le 1. Forest Reso	urces and N	<u>Major Forest</u>	Types
	(<u>Milli</u>	on Hectares	<u>s</u>)	
Region	Dipterocarp	Swamp	Mangrove	Total
Peninsular	5.5	0.8	0.1	6.4
Sabah	4.0	0.2	0.4	4.6
Sarawak	7.7	1.5	0.2	9.4
Malaysia	17.2	2.5	0.7	20.4

The forests are harvested for their logs, poles, rattan, bamboo, several types of latex and gums and other minor forest produce. Logs are the main economic produce. In 1983 Malaysia's total log <u>outturn</u> was about 33 million cubic meters. Out of this total about 14 million cubic meters were consumed by domestic industries, while about 19 million cubic meters were exported. Log export is restricted from Peninsular Malaysia, while approximately 90% of Sabah's and Sarawak's logs are exported every year.

Table 2. Log Outturn and Export, Malaysia (mil. m3)

Year	Penin	sular	Sab	ah	Sara	wak
	Outturn	Export	Outturn	Export	Outturn	Export
1981	10.2	0.2	9.1	8.2	8.4	6.7
1982	9.8	0.3	11.3	8.7	8.7	6.9
1983	10.2	0.1	. 11.7	9.8	11.2	9.2

The wood-based industry, which is most developed in Peninsular Malaysia where practically every piece of log is processed in-country, produces sawn timber, railway sleepers, plywood, veneer, wood mouldings, chipboard, blockboard, buildings joinery, furniture and many other minor products, for the domestic and export markets. Approximately half of the sawntimber and plywood produced is exported. The other significant export item is mouldings, value at almost US\$100 million in 1983. Furniture is an up-and-coming export product which should overtake all others in importance, including sawntimber and plywood.

<u>1</u>/

Director, Forest Economics, Forestry Department HQ, Peninsular Malaysia

	Sawntir	nber	Plywoo	bd
Year	Production	Export	Production	Export
1981	4,564,342	2,253,988	504,875	374 , 103
1982	5,022,497	2,244,427	553 , 639	380,222
1983	5,675,737	2,323,138	633,101	454,678

Table 3. Production and Export of Sawntimber and Plywood, Peninsular, Malaysia (m3)

Table 4. Production and Export of Sawntimber for Sabah and Sarawak (m3)

	Saba	ah	Sarawa	ak
Year	Production	Export	Production	Export
1980	538,000	238,000	n.a.	173 , 300
1981	676 , 000	386,000	n.a.	162 , 960
1982	862,000	642,000	n.a.	183,250

Organization and Procedures

Forest statistics on production and consumption are collected, analyzed and reported by the Forestry Departments of Peninsular Malaysia, Sabah and Sarawak, the Malaysian Timber Industry Board (MTIB), the Sarawak Timber Industry Development Corporation (STIDC) and the Ministry of Primary Industries. The Forestry Department collects production statistics of traditional and modern sector forest products, but its coverage of the modern sector or of the primary wood-processing industries is limited, except for the wood mouldings mill. The Forestry Departments do not have powers or Acts of Parliament to compel any person to furnish statistics. As such the statistics are monitored indirectly through licensing procedures, revenue records and by attaching conditions to the licences which oblige the licencees of logging areas and mills to keep records and submit reports on a monthly or yearly basis to the Forestry Department. In practice this procedure has to use a lot of coercion and is very cumbersome and requires wasteful manpower to obtain results.

In the Federal Forest Department the Economic Unit, located in the Headquarters, is responsible for developing systems to monitor forest statistics. The "Shuttle Returns" system of monitoring is well established and is reviewed from time to time to improve its timeliness, accuracy of reporting and to widen the scope of the shuttle returns. New shuttle returns are also being introduced as new wood-based industries develop or become more prominent. For example, the shuttle return on wood moulding mills was introduced only this year. Statistics which cannot be monitored by the shuttle returns are collected by questionnaire surveys, either through the mail or by direct interviews at the sources. A large proportion of the statistics in the Forestry Department Annual Report, for example, is compiled once a year using standard questionnaires. The State Forestry Departments and the District Forest Offices are vital links in the statistics collection system. This is because:

- (i) The State Forest Departments are the authority in licensing and regulating the forest-based activities or industries in the state. Such authority is required to get effective responses;
- (ii) The State and District Offices keep files and records which come in handy in identifying the sources and providing all kinds of information. Quite often the office records are quite sufficient to satisfy the needs of the surveys; and
- (iii) The State and District Offices have the manpower and facilities to assist the Economic Unit to carry out the surveys. For example, the shuttle returns are sent through the District Forest Offices, and it is their responsibility to make sure that the shuttle returns are completed and sent to the Headquarters before the deadlines. In fact, a survey is not carried out without first obtaining the assistance of the State and District Forest Offices.

To accommodate the above role the State and District Offices usually assign specific personnel to be responsible to assist the Economic Unit and to handle all types of questionnaires sent down from the Headquarters in Kuala Lumpur. These personnel, who also carry out other functions unrelated to compilation of statistics, are given periodic training to familiarise them with the work or new aspects of the work, especially when a new shuttle return is introduced or a major revamp is made on existing shuttle returns. This periodic training is also necessary because the field personnel are transferrable and continually replaced. In addition, officers from the Economic Unit are available at any time to give advisory services in handling the shuttle returns or questionnaires. This service is done through correspondence or field visits whenever necessary.

The MTIB and STIDC are generally concerned with export data, which involves a large portion of the forest products produced in Peninsular Malaysia and Sarawak. The statistics for exports are monitored guite differently by the MTIB and STIDC. The MTIB compile their export statistics mainly from the application documents submitted by the registered exporters 1/ to get their "approved permit" or AP to export log and timber products. The MTIB also compiles similar statistics from the Customs Declaration (CD) Forms, copies of which are also compiled and collected by the Statistics Department. The export statistics compiled from the two sources do not usually tally, because there is a significant time lapse between the application for APs and eventual exports, and certain approved quantities The MTIB uses the data as reflected in the were not actually exported. AP's for their official use and in their publications, while the Statistics Department makes use of the data as stated in the CD Forms, which is actually the export data. The STIDC compiles their export statistics from the CD Forms.

^{1/} All exporters are registered with and licenced by the MTIB, Peninsular Malaysia

Sources and Methods

The sources of production data of "traditional sector products" and some of the "modern sector forest products" are the District Forest Offices. These offices record all the licences and permits issued for the harvesting of forest produce, including the production of charcoal, in their register of licences and respective permits. In addition to the Register, individual files of licenses and permits record various data on production, forest charges, renewals, termination of permits and licences, etc. When the produce is removed a "Removal Pass" is issued for each consignment (truck-loads, etc.) which records the types and volume quantity of produce, including the royalty due on that particular consignment. Copies of the removal passes are kept in the State Forest Office for purposes of auditing and checking.

The sources of production data of other "modern sector products", such as sawnwood, wood-based panels, wood mouldings, furniture, pulp and paper, are the District Forest offices and the mills. The sawmill, plywood and veneer mills are required by conditions of their licences to record in a "log book" the log input and their production. The records are spotchecked by Forest Department staff from time to time. They are also required by law to respond truthfully to requests made by the Statistics Department for production and other data.

Data on the distribution or consumption of these produce or products are not well documented. Since there are no further licencing or taxes levied before they reach the consumer, the movement and transfer of the produce or products are not recorded in any official documents. However, if these produce or products are processed further and enter mills as inputs their consumption at the industrial levels are recorded, as in the case of products like sawntimber, wood-based panels, charcoal, fuelwood, poles and rattan, which form the raw materials for further processing. However, a substantial quantity processed by unlicenced backyard industries or rural handicraft workshops is not recorded. Sawntimber and wood-based panel products used by the construction industry including fuelwood, charcoal, poles and post have not been properly recorded. In Malaysia the domestic consumption statistics are only "apparent consumption" figures which are deduced by deducting exports from domestic production and import.

In Peninsular Malaysia the main body of production data of "traditional sector" and "modern sector" products is monitored, as mentioned earlier, through "Shuttle Returns", The shuttle returns system of monitoring data involves 8 types of shuttle returns and 6 of them monitor production data. These shuttle returns are sent directly to the sources; that is, either to the various District Forest Offices or the individual mills. Their coverage is 100 per cent. The titles of the relevant Shuttle Returns are as follows:

- 1. Returns of Forest Product, Royalty and Premium
- 2. Production of Logs According to Bumiputra, Non-Bumiputra and Joint Ventures (i.e. according to racial entrepreneur groups).
- 3. Silviculture Cess
- 4. Sawmills Returns
- 5. Plywood Mill Returns
- 6. Wood-Moulding Returns

Shuttle returns numbers 4, 5 and 6 are filled out by the mills themselves and then submitted to the respective District Forest Offices. At this stage the shuttle returns are checked, verified and endorsed by the District Forest Officers before they are despatched to the Forest Department Headquarters in Kuala Lumpur. Shuttle number 1 is prepared by the District Forest Offices, while shuttle returns numbers 2 and 3 are prepared by the State Forest Offices. Shuttle returns numbers 1, 2 and 3 all give statistics on production, and each can be used to cross-check their accuracy.

Other production data not covered by the shuttle returns, such as the production of wood-wool cement panels, wood-chips, the timber preservation and the chip/fibreboard industries, are monitored through periodical surveys, using questionnaires or direct interviews. The production of these industries are recompiled annually and summarised for the preparation of the Forestry Department Annual Reports.

No formal system has yet been devised for the collection of data regarding domestic consumption of sawntimber and plywood. The figures are arrived at partly by periodical surveys, which cover only the consumption of the construction and the secondary wood processing industries; and partly by deducing from export and import data. As mentioned earlier, domestic consumption statistics are only apparent figures.

Dissemination of Forest Statistics

The dissemination of forest statistics are carried out through periodic publication of statistical bulletins and reports, by responding to application or requests made by phone or mail and via presentations made through working papers at meetings, seminar and workshops. The main users of forest statistics are the government agencies, such as the Economic Planning Unit, the National Bank, the Ministry of Finance, the Treasury, the Ministry of Primary Industries, the Statistics Department and others. Requests and replies to these agencies are made through the official channels. The publications produced to disseminate the statistics are as follows

- (i) Quarterly Statistical Bulletin
- (ii) Annual Statistical Bulletin
- (iii) Forest Statistics Book
- (iv) The Forestry Department Annual Report
- (v) Maskayu, and
- (vi) Perkasa

The quarterly and the annual statistical bulletins, as the names suggest, aim at current and timely dissemination of forest statistics, mainly for the consumption of planning agencies within the government organisation. But this type of publication suffers from failures to receive the data on time. Delays and inaccuracies in reporting by the data sources has been a persistent weakness in the Shuttle Returns monitoring system, which have led to periodic delays and non-issue of the bulletins. Once the bulletins have been superceded by the Annual Report, the usefulness and effectiveness of the Bulletins are nullified.

The Forest Statistics Book is a publication that gives a historical series, covering statistics on forest resources, forest licensing and harvesting, production, consumption, the wood-based industries, prices and forest revenues, including up-dated information on rates of forest charges, employment and trade. The book covers statistics and information data on Peninsular Malaysia only. This book is not a routine publication, but is only updated every two to three years. The next issue is planned for 1985, to update the information to 1984 and hopefully to cover Sabah and Sarawak as well.

The Forestry Department Annual Reports, published separately for Peninsular Malaysia, Sabah and Sarawak, report on the activities and achievements of the departments during the year. These reports come out in the middle or towards the end of the following year. They also give information on production, consumption and trade.

"MASKAYU and PERKASA" are non-Forestry Department trade journals published respectively by the Malaysian Timber Industries Board and the Sarawak Timber Industries Development Corporation. These monthly issues, which cover mainly the export trade activities and some price statistics, are circulated in the market and to subscribers.

All the above publications are made available, either at a price or gratis, to anybody on request. The Forestry Department maintains a mailing list for all its publications. The Bulletins are meant for domestic consumption only, mainly within the Forestry Department and among government agencies. The "MASKAYU and PERKASA" are distributed mainly to subscribers in the wood-based industry and trade sectors.

A very large volume of statistics is also disseminated through official correspondence and by responding to questionnaires. The recipients of this service are mainly government agencies, academic and research institutions and international organisations such as FAO, etc. This service is also extended to the industry and trade sectors. The Forestry Department, MTIB and the STIDC have special units or personnel to discharge this function.

Research reports, working papers presented at meetings and seminars and articles published in trade and professional journals also help in the dissemination of these statistics. Officers of the Forestry Department of Peninsular Malaysia, Sabah and Sarawak, and those from the MTIB and STIDC attend meetings and seminar regularly, either locally or overseas, and use these statistics as inputs for their presentations. The Forestry Department also publishes a professional journal "The Malaysian Forester", which also provides current statistics; the MTIB publishes on a quarterly basis, a trade magazine called "The Timber Trade Review" which reports the trade statistics for the past quarter, with an analysis and projections.

The Department of Statistics

The Department of Statistics was formed in 1948 by the merger of the statistics sections of the Central Trade Registry and the Department of Agriculture. The Statistics Ordinance 1949 provides the legal backing to collect statistics. However, this Ordinance was replaced by the Statistics Act 1965. Presently the Department is organized with two branches, one each in Sabah and Sarawak.

The Statistics Act 1965 describes the function of the Department as "To collect and interpret statistics for the purpose of furnishing information required in the formation or carrying out of Government policy in any field or otherwise required for Government purposes or for meeting the needs of trade, commerce, industry or agriculture (including forestry, fishing and hunting)." It gives power to communicate statistics collected to whomever the information or interpretation may be useful. The Act gives the Department power to give notices to any persons to furnish particulars and the power to impose fines for failures to comply or to knowingly or recklessly furnish false particulars when responding to the Department's notices.

The Department of Statistics compiles industry and trade statistics on timber. The industry statistics are collected by the "Mailed Questionnaire Survey" method. The Department also depends on the Forestry Departments to substantiate their questionnaire surveys. The timber trade statistics are compiled from documents, the Customs Declarations Forms, extended to the Department by the Customs and Excise Department. The trade statistics are more accurate since Customs Declarations on all products for export are enforceable by law.

Collection and Dissemination of Data on Products Prices

The Forestry Department and the Malaysian Timber Industry Board collects log prices from the mills. The Forest Rangers from the Forestry Department obtain log prices by interviewing the sawmillers. No standard form is applied. These statistics are compiled by the tree species or species groups and by Forest Districts, and are collected from a subjective sample of sawmills. However, prices within the same species or group of species are not weigted but simply averaged. Log price statistics are published quarterly in "The Malaysian Forester" and the "Forest Statistics Bulletin".

The Timber Inspectors from the Malaysian Timber Industry Board collect and record, on a monthly basis, the following price statistics by visiting the sawmills at random.

- (i) Sawlog prices at mill, for 39 species;
- (ii) Local market prices of sawntimber (ex-mill, for 28 species and 8 prescribed dimensions;
- (iii) Export prices (FOB) of graded sawntimber, for 25 species and 7 dimensions

The price observations are recorded on a standard price form and cover only the large sawmills. Monthly variations exist in the coverage of the samples which are subjectively selected by each Timber Inspector. These prices, however, are obtained by interviewing the managers or clerks, not by inspecting their records. From time to time the export prices are cross-checked against the Local Export Contracts, a copy of which document, by condition of licensing, must be lodged in the MTIB by the exporter.

Collection and Dissemination of Data on Forest Industries Capacities

All primary wood processing mills operate under licences issued by the Forest Department in each state, subject to the following conditions:

- all saws in the mills are sub-licensed, restricted to the number and size approved;
- (2) all logs shall be serially numbered as soon as they are brought into the mill compound and recorded in a log-book;
- (3) the licensees shall provide the District Forest Officers with monthly statistics on the input of round timber and output of converted timber.

The log book records the following information:

- the "removal pass" number,
- date the log entered the mill (yard),
- log number,
- species,
- log dimension,
- total volume in cubic meter,
- royalty volume (total volume minus volume of defect)

The licensing conditions mentioned above, require the mill management to submit monthly statistics to the District Forest Officers not later than the 5th of each month. The following statistics are compiled monthly and annually in the District Forest Offices:

(1) Monthly

- status of mill licence,
- operational status of mill,
- labour employed by race, categories of skill, salaries and wages paid
- input of logs into the mill (log yard)
- inpur of logs into processing machinery,
- output of converted timber,
- log prices

(2) Annually

- ownership
- value of Fixed Assets,
- inventory of machinery in use, by type,
- power installed, by type,
- glue used in plywood manufacture,
- for 1985, data on sales to various end-users will be collected

The collection of these monthly and annual statistics facilitate the control of these mills by the Forestry Department. These statistics also become very useful for planning purposes by the Forestry Departments, other government agencies and the private sectors. The above set of data indicates the mechanical and operating capacities of the mills.

Methods used for Collection of Forest Products Trade Statistics

Every exporter of timber must apply for a licence to export and an approval permit, which are both issued by the Malaysian Timber Industry Board. An exporter who want to export any kind of timber or timber products must fill out the Customs and Excise Department form which is a declaration of goods to be exported. These forms contain the following information:

the date of export;
 the destination and origin of shipments;

- (3) quantity/volumes of goods exported;
- (4) FOB export values. These can be and are checked by the customs officers against the export contracts and by observing the transfer of payments. This checking is especially done for all dutiable timbers as opposed to those which are subject to cess

The information contained in these forms is compiled at the Malaysian Timber Industry Board and published monthly in its "Maskayu" and quarterly in its "Timber Trade Review."

The regional customs offices which are located at the major exporting outlets of the country send copies of the customs declaration forms to the Customs Office Headquarters, and to the Department of Statistics. The Statistics Department compiles the general external trade statistics of Peninsular Malaysia based on information given on the customs declaration forms. These are published monthly in the "Monthly Statistical Bulletin of West Malaysia" and annually in the "Peninsular Malaysia Annual Statistics of External Trade", directly from computer print-outs.

Timber export statistics are used internally at the Forestry Department Headquarters, to follow the business cycles and trends. The annual timber export statistics are published in the Annual Report of the Federal Forestry Department. Timber export statistics are also published quarterly in "The Malaysian Forester".

General Observation

The classification of forest products used in FAO questionnaires is compatible with the classification used in Malaysia, except for slight variations. For example in Malaysia logs are not graded into sawlogs and veneer logs, while veneer is recorded as a separate product from plywood. Veneer is recorded as an output in Peninsular Malaysia only if they are pro-duced for export. Those veneer processed in the country into plywood, blockboard, etc. are not counted to avoid double-counting. It would be helpful to respondents if the questionnaire can specify or include the SITC or BTN codes for each product type. This is suggested because of the similarities and diversities of the products involved. Respondents are often not sure if certain products grouped under the same SITC or BTN code heads should be included or excluded; for example, under the product type "Newsprints" whether newsprint in roll should be added to newsprints in sheets.

Another difficulty arises when under the same group of products, different units of measurements are given. If the respondent is not too sure of the conversion factor, or through carelessness, the reported figure can be distorted. It is also very common to find that certain products only have value figures, or are reported in units of pieces of certain lengths. A very good example is rattan statistics in Peninsular Malaysia. Another is charcoal which has always been reported in "Pikuls" or "Sacks" which do not have a standard conversion factors. All these will pose a problem in adding up to the total volume. As a suggestion it would be helpful to the respondents if conversion factors for various product types are also given in the questionnaires.

The sources of production statistics are rather well identified and quite satisfactory in their responses. Records kept at the sources are well maintained, especially, for types of statistics which are required on a routine basis. Problems which arise are related to personnel competency and priority given to the job, which affect timeliness, interpretation of questions and data, and eventual accuracy of reporting. These shortcomings made it necessary for the compiling agencies to allocate more manpower to check on the statistics received and the records at the sources. Advisory services have become part of the function of the collecting agency.

The sources of domestic consumption statistics is very unorganized for monitoring purpose and is not suitable for monitoring using, for example, routine shuttle returns. Periodic surveys by questionnaires can never hope to do a comprehensive coverage. This is why after so long and even up to today, consumption statistics have always been estimated as apparent figures. It is assumed that all domestic production surplus after export is consumed locally. To this is added net imports and a subjective percentage deducted for wastage.

The procedures used for collection is adequate, and seemed to achieve the objectives quite satisfactorily. There is room for improvement however, especially in the use of computers, which will simplify the compiling, recording and retrieving procedures. Changing to a computerized system will also require careful planning, retraining of manpower, and Conversion to computerization should be large sums of money and time. integrated from the source to the collecting centre. At the moment, certain State Forestry Departments are buying computers to upgrade their revenue collecting system, which later can be integrated with a central computer to monitor production statistics. There is a danger, however, that the individual State Departments might purchase systems, out of ignorance or more likely due to financial constraints, which are not compatible, and therefore cannot be integrated, with a central computer. The Headquarters is, therefore, thinking that it would be better if the conversion to computerization is funded at the Federal level, since this will also give the smaller State Forest Departments the means to have their own computer systems. The conversion to computerised technology must be total or not at all, as a mixbag statistical collection system will not, in any way, improve the procedures.

COUNTRY MALAYSIA

DATA SUPPLIED BY FORESTRY DEPARTMENT (Department, office, etc.)

PRODUCTION

PRODUCTS	UNIT	1980	1981	1982	1983
SAWLOGS, VENEER LOGS	M ³	10453404	10226261	9841480	10237833
PULPWOOD	-				
POLES, PILING AND POSTS	M ³	103247	106786	804383	\$ 708643
FUELWOOD	M ³	153599	66181	138288	\$ 138175
CHARCOAL	M ³	446962	611009	740958	760268
SAWNWOOD AND SLEEPERS	м ³	5339073	4564342	5022497	5675737
PLYWOOD AND BLOCKBOARD	M ³	440910	504875	553639	688824
PARTICLE BOARD	м ²	2308602	156769	96179(T 18396 m ³	Tonne 108099
FIBREBOARD					
WOODPULP					
PULP OTHER THAN WOODPULP					
PAPER AND PAPERBOARD					
OTHER FOREST PRODUCTS specify:	M ³	1421942	\$ 1687714	\$ 841713	\$ 874225

COUNTRY MALAYSM

COUNTRY MALAY SIA

DATA SUPPLIED BY

(Department, office)

	3	Value	1082783	7936464	330876	1137611	10612804				1		685255	671581	
	198	Quantity	8854	2	6434	I	119048		1		1	1	و	4828	1
	82	Value	1222202	33232209	764340	5026014	3380679763	1067460999	78534461	245092902	-	1314632	10	388087	1
	19(Quantity	19036	85981	7746	82984	19281693	3106300	80503773	82799757	1	3873	0.01	2816	1
	81 18	Value	1646429	28687669	2838675	69107	2473424226	1118675964	1	70	-	1		45488	1
	19	Quantity	12482	25719	53644	1349	15869606	3060487	l I	14	1			146	I
	30	Value	2356961	20927673	1146969	380668	2612991335	1343319566	12600	39960	1	1	79836	127802	1
	198	Quantity	18509	2804	31230	2716	15122111	3073129	5298	8695	1	1	64	492	}
DRTS		UNIT	Tonne	M ³	M ³	Tonne	M ³	M ³	M ²	M ²			Tonne	Tonne	
EXP(PRODUCTS	CHARCOAL	PULPWOOD	POLES, PILING AND POSTS	FUELWOOD	SAWLOGS AND VENEER LOGS	SAWNWOOD AND SLEEPERS	VENEER SHEETS	PLYWOOD AND BLOCKBOARD	PARTICLE BOARD	FIBREBOARD } Reconstituted	WOODPULP	PAPER AND PAPERBOARD	OTHER FOREST PRODUCTS specify:

COLLECTION AND PROCESSING OF FORESTRY STATISTICS IN PAKISTAN

By:

Mohammad Amjad 1/

Introduction

Forests are a provincial subject in Pakistan. The provicial Forest Departments are entrusted with the responsibility of managing and developing the forest resources. However, their activities are mostly confined to the state-controlled forests only. The forest statistics become available as a by-product of their work. These departments have no statistical wings to collect information on production and consumption of wood in the private sector. This lack of a data generation facility makes the compilation of forestry statistics in Pakistan a very difficult job. Special surveys have to be conducted to estimate the consumption of wood in various end-uses and to assess the production of wood in the private sector.

Existing Organization

The Forest Economics Branch of the Pakistan Forest Institute, Peshawar, collects and compiles forest statistics regularly on an annual basis. The main sources of forest statistics are the Annual Progress Reports of the provincial Forest Departments. The Annual Progress Report embodies a summary of the activities of the Department during the reporting year. It contains information on area under forests, its distribution by vegetation types and legal classes, outturn of timber by species, outturn of firewood and other minor products, progress achieved in various management operations, revenue earned and expenditure incurred etc. Each Forest Division compiles its own progress report which is then sent to the circle office. The reports received from the forest divisions are consolidated at the circle office and the consolidated report is sent to the provincial office. At the provincial office the reports received from the circle offices are consolidated and Annual Progress Report of the Provincial Forest Depart-It may be mentioned here that the provincial Forest Dement is issued. partments have no statistical cells and the entire work of preparation and compilation of progress reports is accomplished by the ministerial staff, which usually have no training in statistical procedures. The progress reports do not contain any information on wood production taking place in Nor is any information on consumption of forest the private sector. At the close of the Forest year, the Forest Economics products given. Branch sends a set of proformae (Appendix 1) to each of the provincial Forest Departments for collection of forestry statistics. On receipt of

1/ Forestry Economist, Pakistan Forest Institute, Peshawar, Pakistan

their replies, the information is compiled at the national level. As indicated earlier, it relates to the state-controlled forests only. The Federal Bureau of Statistics reports data on prices of timber, firewood and charcoal. The data on imports and exports of wood and wood products are also collected by the Federal Bureau of Statistics. The Forest Economics Branch collects data on the production of wood-based industries which work on a factory scale by sending questionnaires to individual units. In the case of small scale industries like saw-milling, no information is collected because of the enormous number of units scattered all over the country. No other agency is engaged in the collection of forestry statistics.

Traditional Sector products

Fuelwood: The data on recorded production of fuelwood from state-controlled forests is obtained from the Annual Progress Reports of the provincial Forest Departments. In addition to recorded production, a lot of unrecorded quantity of fuelwood is also removed from the statecontrolled forests. To arrive at the estimates of unrecorded removals, it is assumed that the state-controlled forests contribute an equivalent to 10% of the total fuelwood consumption in the country. Deducting recorded removals from this figure yields the estimated quantity of unrecorded removals.

The bulk of fuelwood consumed in the country is produced on non-forest areas and farmlands. It is assumed, as indicated in the next paragraph, that 90% of the total fuelwood consumed comes from the non-forest areas and farmlands. At present no agency exists for the collection of data on production of fuelwood on farmlands, nor has any survey so far been conducted. There are about 4 million farms in the country and even a sample survey would entail a gigantic effort and substantial expenditure.

As regards consumption of fuelwood in the country, the estimates are arrived at on the basis of per capita consumption and the size of energy requirements equivalent to 0.4 m3 per head per annum. Of this 50% is met by fuelwood and the remaining 50% by substitutes, including fossil fuels, dung and agricultural residues. Thus, the per capita consumption of fuelwood is estimated to be 0.2 m. Multiplying this figure by the population yields the estimated fuelwood consumption in the country. The Federal Bureau of Statistics conducts a periodic survey of household income and This survey reports the average expenditure on fuelwood expenditure. consumption per household in different income groups, separately for urban and rural areas. The last survey was conducted in 1979, which also confirmed that the per capita fuelwood consumption was around 0.2 m3.

Charcoal: Charcoal is mainly used for heating rooms in winter. A small quantity is also used in laundry shops and restaurants in small towns. Charcoal production is carried out mainly in the private sector and its manufacturing units are scattered throughout the country. The units

are not registered with the Forest Departments. Accordingly, it is not possible to collect data on the production of charcoal. The charcoal production is estimated on the basis of per capita consumption and the size of the population. The per capita consumption is estimated at 0.5 kg per head per annum.

Unprocessed roundwood: The bulk of wood produced on farmlands is used by the households themselves. It does not pass through market channels. It is therefore not possible to collect data on unprocessed roundwood used by homes and traditional industries. However, some estimates can be made. The unprocessed roundwood used by homes and traditional industries. However, some estimates can be made. The unprocessed roundwood is used mainly in mining, construction of houses and cattle sheds in villages, and in the making of traditional wood agricultural implements and village carpentry such as furniture making. In mining, the share of roundwood is estimated at 2/3 of total consumption. The wood consumption per tonne of coal production is estimated at 0.056 m3. Multiplying this figure by coal production gives the wood consumption in the mining sector. In the housing sector, it is estimated that 1/3 of total wood consumption consists of un-In the making of agricultural implements, 2/3 of the processed roundwood. total wood consumed consists of roundwood. The per thousand capita on consumption of wood in housing construction is estimated at 5.2 m3 and in village carpentry at 3.2 m3.

Modern Sector products

Saw Logs: Saw logs are produced both on state controlled forests and farmlands. The tree growth existing on farm lands mainly consists of indigenous broad leaved species. Accordingly, coniferous saw logs are obtained only from state-controlled forests. The data on the production of coniferous saw logs are obtained from the office records of the provincial Forest Departments. The non-coniferous logs on state-controlled forests are also collected from the records of the provincial Forest Departments. Regarding the production of non-coniferous saw logs in private sector, no data are available as there is no agency for the collection of data. Some estimates have to be used to work out the production of logs on farmlands.

A survey of wood consumption in various end-uses was conducted in 1979 - 1980. Appendix 2 gives the roundwood equivalent of wood consumption in the different end-uses in 1979-80. As the rate of population growth is 3%, it is assumed that wood consumption is also growing at the rate of 3% per annum in the various end-uses, except timbering in coal mines which is In this way, the total industrial wood conrelated to coal production. sumption is arrived at. From this total is deducted the volume of unprocessed roundwood consumption, estimated as explained above. From the remainder is deducted the roundwood equivalent of the imports of sawnwood including sleepers (1 m3 sawn = 1.4 m3 round). From the figure thus arrived at is deducted the volume of imports of roundwood. This gives the volume of production of saw logs and veneer logs. Since veneer logs are used only in two end uses, namely the plywood industry and the match industry, the volume of wood consumption in these two end-uses is deducted to arrive at the volume of sawlogs produced.

Veneer Logs: As pointed out above, veneer logs are used only in the plywood and match industries. The former uses both imported and locally produced logs. The share of imported logs is estimated at 50 per cent of the estimated consumption. The match industry consumes locally produced poplar logs. Thus the production of veneer logs is estimated on the basis of the figures of the timber consumption survey of 1979-80. However, data on production and consumption of wood raw material is also collected from the plywood manufacturing units.

Pulp Wood: There is no manufacturing unit producing wood pulp in the country. The pulp and paper industry is entirely based on non-woody raw material. The entire requirements of wood pulp of the paper industry are met by imports. As such, the production of pulp wood is nil. However, poplars and eucalyptus wood which could serve as a raw material for pulp industry are produced from state and private lands but the quantity is negligible and not on a sustained basis. This discourages the establishment of this industry either in the private or public sector. Chir pine wood, although useful for the manufacture of large fibred pulp, is not available in sufficient quantity and cannot be spared out of its current use as poles posts, lumber, etc.

Sawn Wood: There is no established market for finished dimension stock timber in Pakistan. The consumer usually purchases material in the form of logs or scantlings and gets it converted into the requisite sizes at the band saws. The saw milling units are scattered throughout the country. These are usually small units - 90 to 105 cm. vertical band saws. In 1979-80 their number was estimated at around 6000. At present there is no agency for the collection of data on production of sawnwood in the country. Therefore the production of sawnwood has to be estimated. To the production of saw logs estimated as explained above is added the imports of saw logs. Volume thus obtained is divided by 1.4 to arrive at the estimated volume of sawnwood production.

Wood Based Panels

Particle Board: The data on the production of particle board is collected by the Federal Bureau of Statistics, which is published in the annual publication "Pakistan Statistical Yearbook". The information is collected from this publication. The Forest Economic Branch also collects information on raw material consumed by sending questionnaires directly to the manufacturing units.

Fibre board: There are only two units engaged in the production of fibreboard. One of them produces hardboard and the other produces both hardboard and softboard. The data on production of fibreboard is collected directly from the manufacturing units by sending them questionnaires.

Plywood and blockboard: The data on the production of plywood and blockboard is not collected by the Federal Bureau of Statistics. According-

ly, the Forest Economics Branch has to collect the data directly from the manufacturing units, of which there are ten in number. In addition, there is one unit engaged in the production of veneer. The data on veneer production is collected directly from this unit.

Pulp and Paper: As mentioned earlier, there is no unit producing wood pulp in the country. The paper industry consists of 15 units which produce different varieties of paper and paper board. The data on the production of paper and paperboard is collected by the Federal Bureau of Statistics and published in the statistical yearbook. The production of paper is further broken down into 3 classes - writing, printing and wrapping paper. The information on production of pulp and paper is collected from this source.

Measures for Dissemination

The Forest Economics Branch collects forestry statistics from different sources and compiles them on regular basis annually. The compiled information is published under the title "The state of Forestry in Pakistan". The publication is supplied free of cost to the Forest Officers of the provincial Forest Departments. It is also supplied to the different agencies concerned with the planning and development of forest resources, such as the Ministry of Food and Agriculture, Planning Commission, etc. In addition, delegations from different countries visiting the Pakistan Forest Institute, Peshawar, are also given this publication. Briefly speaking, the publication contains information on land-use, human and livestock population, area under the control of provincial Forest Departments, Statecontrolled forest areas and its distribution by legal status and vegetation types, are covered by working plans, area regenerated and afforested, production of nursery plants, output of timber, firewood and minor forest products from state-controlled forests, revenue earned and expenditure incurred, imports and exports of wood products, prices of timber, firewood and charcoal, and production of wood based industries.

The forest statistics are also reported in the 'Yearbook of Agricultural Statistics', an annual publication of the Ministry of Food and Agriculture. The information given in this publication is drawn from the "State of Forestry in Pakistan". The information given in this publication relates to state controlled forest areas, regenerated and afforested areas, imports and exports of wood and wood products. This publication is widely circulated among agriculturists, economists, planners and administrators.

The provincial departments of Planning and Development bring out an annual publication under the title "Development Statistics". These publications also contain information on forest statistics of the province concerned and are widely circulated.

Finally, the annual publication of the Federal Bureau of Statistics entitled "Pakistan Yearbook of Statistics", also contains considerable information on forest statistics. It gives information on out-turn of timber and firewood, species-wise prices of timber in different markets, prices of firewood, charcoal and of different grades of paper, production of particle board, paper and paper board. It also contains estimates of the GNP and information on the contribution of the forestry sector to the GNP is given, though it is grossly underestimated.

Other Organization

A number of organizations other than the Forest Departments are also engaged in the collection of data on some forest statistics. At the top is the Federal Bureau of Statistics, which collects data on prices of timber, firewood, charcoal and paper. It collects data through its data collectors stationed at different cities/towns. The Directorate of Marketing Intelligence of Agricultural Commodities also collects data on prices of timber and firewood. The intervals at which data are collected is different for the two organizations. The data reported by the Federal Bureau of Statistics are considered to be more reliable, as they have a well trained and experienced staff. The Directorate of Industries of each province collects data on the production of wood-based industries which work on a factory scale. The data on imports and exports of wood and wood products are collected by the Federal Bureau of Statistics through its staff stationed at various customs posts. Sometimes glaring discrepancies are noticed in the trade data, especially relating to per unit price. That is perhaps due to under-invoicing. A periodic census of manufacturing industries is also conducted by the F.B.S. This census report contains information on woodbased industries as well. Sometimes the small scale industries corporation of the different provinces conduct a census of small scale and cottage in-This gives information on small scale wood based industries. dustries. There is hardly over-lapping in the collection of data, so the question for reconciliation of data does not arise.

Forest Products Prices

The data on forest products prices are collected by the Federal Bureau of Statistics. The forest products include timber, firewood, charcoal and paper. The Bureau has its data collectors at different markets. The data are collected fortnightly. In each fortnight a day is selected randomly. On the selected day, the data collector visits the market and collects information from a few shopkeepers. The prices taken are the actual prices at which a deal was struck on that day. The data sent by the data collectors are compiled at the Head Office of the Bureau. Timber prices of 6 species prevailing in 4 markets/places are reported. Similarly, firewood prices are reported for 8 different markets. These prices are reported in the "Pakistan Yearbook of Statistics" which has a very wide circulation in The price data are not published in the newspapers, nor are the country. they broadcasted, on radio and television.

Forest Industries Capacities

The Ministry of Commerce/Industries periodically publishes a publication under the title "Directory of Industrial Establishments". This publication gives information on the capacities and location of different industries, including the forest industries, but it covers only those industries which work on a factory scale. The small scale and cottage in-The data on forest industries capacities are dustries are not included. also available from the records of the Central Board of Revenue, with which the industrial establishments file an annual return on a prescribed form. The Forest economic Branch also collects data on forest industries capacities annually through sending questionnaires to the individual units. The Chambers of Commerce and Industry also publish data on capacities of However, there is no regular publication for the different industries. dissemination of data on industries capacities, except the director of Industrial Establishments.

Trade Statistics

The statistics on imports and exports of wood and wood products are collected by the Federal Bureau of Statistics. It has stationed its staff at all the important customs posts. From the bill of entry or shipping bill, the relevant information about the quantity and value of the product which is entering or leaving the country can be gathered. Goods are not cleared till the customer has recorded the relevant information with the FBS staff. So the statistics on trade have perhaps the best coverage. The values of imports are CIF and of exports FOB. The FBS follows the International Trade classification code for differentiating the products. The data recorded daily are fed to the computer at the Head Office of the Bureau. The statistics are published in Bureau's monthly publication "Monthly Foreign Trade Statistics of Pakistan". At the close of the fiscal year, the trade statistics are published in the annual publication "Foreign Trade The trade statistics are published in the State Statistics of Pakistan". of Forestry in Pakistan and in the Pakistan Yearbook of Agricultural Statistics.

General Observations

Classification: All wood removed from the state-controlled forests is classified either as timber or as firewood, depending upon the mid-diameter If the mid-diameter is 20 cm. or more, it is termed as of roundwood. timber and all billets with a mid-diameter of less than 20 cm are classif-There are further classes of timber logs according to ied as firewood. quality, depending upon the taper and presence of knots in the log. The firewood billets are classified into thin, medium and selected depending The timber logs with less than the upon the diameter of the thin end. usual length of logs are classified as "assorted pieces". The classification used by FAO of sawlogs and veneer logs, pulp wood, poles, pilings and posts is not followed in reporting wood production from the state-controlled forests in Pakistan.

Table 1.	Area of forests and rangelands under the control of forest
	department on 30-6-1984 by legal category

	Legal categor	y of			Area	
<u> </u>	forests			(in	hectares)	
			Compact ar	eas		
1.	State					
2.	Reserved					
3.	Protected					
4.	Unclassed					
5.	Resumed lands					
6.	Guzara					
/. 8	Communal Soction 38					
9.	Chose Act					
10.	Miscellaneous					
	Total			_		
			Linear Pla (Area in	ntations Av. km.)		
		Road	Cana l	Rail	Others	Total
		side	side	side		
1.	State					
2.	Reserved					
3.	Protected					
4.	Unclassed					
5.	Others					
	Total					

* Please give the factor for conversion of Av. km. into hectares.

Table 2. Distribution of area of forests and rangelands under the control of forest department on 30-6-1984 by vegetation type

Vegetation		Area in he	ectares
type	State	Private	Total
	Compact Areas		
1. Coniferous forests			
2. Irrigated Plantation			
i) Planted area ii) Blank area iii) Total			
3. Riverain forests			
4. Scrub forests			
5. Coastal forests			
6. Mazri lands			
7. Rangelands			
Total	<u></u>		

Linear Plantations (Area in Avenue kms.)

- 1. Road side
- 2. Rail side
- 3. Canal side
- 4. Others

Total:

	Vegetation type	Production forests	Protection forests	Total
		Compact areas (in hectares)		<u> </u>
1.	Coniferous forests			
2.	Irrigated plantation	ns		
3.	Riverain forests			
4.	Scrub forests			
5.	Coastal forests			
	Total			<u> </u>
		Linear Plantatio (in avenue kr	ons n)	

Table 3. Area of Production and Protection Forests on 30-6-1984

		Production forests	Protection forests	Total
1.	Road side			
2.	Rail side			
3.	Canal side			
4.	Other			
	Total	· • • • • • • • • • • • • • • • • • • •		

	Vegetation	Total	Area covered under working
	туре	area	plans
		Compact forests (in hectares)	
1.	Coniferous forests		
2.	Irrigated plantation	ons	
3.	Riverain forests		
4.	Scrub forests		
5.	Coastal forests		
5.	Mazri lands		
	Total		
		Linear Plantations (in avenue km)	
		Total	Area covered under
		area	working plans
1.	Road side		
2.	Rail side		
3.	Canal side		
4.	Others		
	Total		****************

Table 4. Area of Forests Covered by Working Plans on 30-6-1984

_

v	egetation type	<u>Ar</u> Mainly natural	ea in hectare Mainly coppice	<u>s</u> Mainly artificial	Total
1.	Coniferous forest				
2.	Irrigated plantat	ions			
3.	Riverain forests				
4.	Scrub forests				
5.	Coastal forests				
	Total	<u> </u>	······································		
		Linear (in	<u>Plantations</u> avenue km)		
1.	Roadside				
2.	Rail side		a.		
3.	Canalside				
4.	Others				
	Total				

Table 5. Area regenerated during 1983-84 in different types of Forests

Table 6. Area afforested during 1983-84

	Target	Achievement
Compact Plantations (in hectares)	· · · · · · · · · · · · · · · · · · ·	
Linear Plantations		

Table 7. Species wide out-turn of timber from the forests under protection of forest department during 1983-84

Species	(<u>Out</u>	<u>t-turn in solid c</u>	ubic metre	es)
Species	1000	Scantlings	Other	Total
Coniferous				
Deodar				
Bluepine				
Fir				
Spruce				
Chirpine				
All others				
Broad leaved				
Shisham				
Mulberry				
Babul				
Poplar (hybrid)				
Bahan				
Eucalyptus				
Walnut				
Simal				
Kandi				
Lai				
All others				
Total				

	Unit		Quantity	Value (in rupees)
Firewood	Cubic metre	stacked		
Resin	Metric tons			
Mazri	24			
Ephedra				
Other Medicinal	1			
plants	c1			
Grazing and				
grass cutting	3			
etc.	-			
Other minor				
forest produc	ce -			

Table 8	•	Out-turn	of	Firewood	and	other	minor	forest	produce
				dui	ing	1983-8	34		

Table 9. Revenue earned by the forest department during 1983-84

Source	Amount (in rupees)
Sale of timber	
Sale of firewood	
Sale of resin	
Sale of mazri	
Sale of Ephedra	
Grazing, grass cutting	
Other revenue (from minor forest produce)	
Miscellaneous	
Total	

	Amount in Rupees
	10 Forest 63-B Total Development
 Establishment pay, allowances, etc. 	
(A-General direction plus C-establishment in 10 forests and E-forests in 63-8- Development	
2. Sowing and planting	
(BI(iv) b and E-4(1)	
 Conservancy and works except sowing and planting 	
4. Others	
5. Total expenditure	
6. Total Budget allocation	

Table 10. Expenditure incurred by the forest department during 1983 - 84

Table 11. Production of nursery plants during 1983-84

	Area in hectares	Approximate number of plants raised			
Bed nurseries					
Potted nurseries					
Total					

Table 12. Construction of roads and building during 1983-84

	Expenditure incurred (in rupees)			
Roads (length in kilometres)				
Pacca roads				
Katcha roads				
Buildings (number)				
Total	· · · · · · · · · · · · · · · · · · ·			
Table 13. Strength of Sta	aff on 30-6-1984			
Title	Number			
Technical Staff Chief Conservator of Forests Conservator of Forests Divisional Forest Officer Sub-Divisional Forest Officer Forest Rangers (Gazetted) Forest Ranger (-on-gazetted) Deputy Forest Rangers Foresters Forest Guards Surveyors Draftsmen Others				
Ministerial Staff Senior Superintendents Junior Superintendents Assistants/Accountants Senior Clerks Junior Clerks Stenographers Stenotypists Drivers, Naib Quassid, Chowkiders Malies and other Others Sericulture Staff Game Staff Miscellaneous				

Total

Appendix 2

Estimated timber consumption in various end-uses, 1979-80

Population	= 80	0.230	million	
Coal produc	tion =	= 1.50	4 million	tonnes

	End-use	Timber Consumption (roundwood equivalent - m ³)
1.	Housing	417,196
2.	Wooden containers	464,000
3.	Village carpentry	256,736
4.	Furniture	164,350
5.	Mining	84,251
6.	Bus/truck bodies	47,100
7.	Particle/hardboard	25,000
8.	Railway carriages/sleepers	24,000
9.	Sports goods industry	18,430
10.	Plywood	12,976
11.	Matches	11,785
12.	Boats	6,200
13.	Wood artefacts	4,431
14.	Pencils	755
15.	Miscellaneous	31,550
	Total	1,568,760

Country: Pakistan Data Supplied By: Pakistan Forest (Department, Office, etc.) Institute, Peshawar

PRODUCTION

Products	Unit	1979-80	1980-81	<u> 1981–82</u>	1982-83
Sawlogs, Veneer logs	м ³	512,586	686,023	1085,540	989 , 893
Pulpwood		_	-		_
Poles	м ³	366,390	379,004	394,562	403,995
Fuelwood	Million M ³	16.04	16.52	17.00	17.50
Charcoal	Tonnes	40,115	41,300	42,500	43,730
Sawnwood and Sleepers	M ³ (s)	715,997	554,911	762,846	703,966
Plywood and Blockboard	Thousand M ²	722.0	743.4	765.0	787.1
Particle Board	Tonnes	26,009	31,930	31,133	30,033
Fibreboard	Tonnes	6000	6000	6000	6000
Woodpulp		-	-	-	
Pulp other than Woodpulp	Tonnes	55 , 565	58,797	65,582	64 ,34 5
Paper and Paperboard	Tonnes	59,175	67,661	73,586	76,211
Other Forest Products					
Specify: Resin	Tonnes	4,717	5,247	4,869	4,793
FOREST PRODUCTS QUESTIONNAIRE - FOLLOW-UP

Country: PAKISTAN Data Supplied By: FAKISTAN FOREST INSTITUTE, PESHAWAR (Department, Office)

	IMPORTS	1979-8	0	1980-	81	1981-	82	1982	-83
PRODUCTS	unit	Quantity	Value Million	Quantity	Value Million	Quantity	Value Million	Quantity	Value Million
			Rupees		Rupees		Rupees		Rupees
Charcoal	Ċ	I	1	1	1	ł	I	I	I
Pulpwood	Υ Σ	40	0.06	884	6.70	895	3.10	447	1.10
Poles, Piling and Posts	м У	82	0.1	I	I	11,037	8.4	304	0.3
Fuelwood	ſ	1	1	1	1	1	I	1	I
Sawlogs and Veneer Logs	ν W	514,571	56.8	116,355	35.0	8,712	13.0	22,714	29.0
Sawnwood and Sleepers	л М	106,262	81.1	278,611	109.7	93,093	124.0	171,476	139.7
Veneer Sheets	Tonnes	1,844	13.0	2,596	21.8	506	5.8	738	11.9
Plywood and Blockboard	Tonnes	575	5.5	1,143	10.3	840	14.1	1,042	11.3
Particle Board	Tonnes	1	I	1	1	ł	I	I	ı
Fibreboard	Tonnes	4846	17.6	2058	7.1	851	2.8	1731	ۍ ، ۍ
Woodpulp	Tonnes	9527	48.5	15,630	79.5	15,363	67.7	19,487	92.3
Paper & Paperboard	Tonnes	94,956	571.4	102,484	711.7	113,762	895.0	121,644	1019.1
Newsprint	Tonnes	33,155	153.0	33,384	180.2	27,233	164.8	34,459	209.3
Other Printing and									
Writing	Tonnes	23,156	148.1	21,065	164.5	30,605	286.1	36,066	330.6
Other paper and Paperboard	Tonnes	38,645	270.3	46,035	367.0	55,924	444.1	51,119	479.2

×

				Country Data Su	/: PAKISY Ipplied by	TAN ·: PAKISTAN (D	FOREST epartmen	INSTITUTE, t, Office)	PESHAWAR
	EXPONTS	1979-	80	198()81	1981	-82	1982-	-83
Products	Unit	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Charcoal	I	i	I	I	I	ı	ı	1	ı
Pulpwood	I	ı	*	I	I	I	ı	I	ı
Poles, Piling and Posts	I	ł	I	I	I	i	ı	ı	ı
Fuelwood	ı	I	I	I	ı	I	I	I	I
Sawlogs and Veneer Logs	ı	I	I	I	I	1	I	I	I
Sawnwood and Sleepers	I	ı	ł	I	I	I	1	ı	ı
Veneer Sheets	I		I	I	I	ı	I	ı	I
Plywood and Blcokboard	I	ı	ł	I	I	ı	I	I	I
Particle Board	I	ł	0.2	I	0.2	ł	ı	I	I
Fibreboard	I	I	I	ſ	I	ı	I	ı	ſ
Woodpulp	I	I	ł	I	I	ı	ı	ı	ı
Paper and Paperboard	I	ł	41.0	I	58.4	I	8.6	I	N.A.
Other Forest Products									
Sports goods woode base	י קי	ı	109.7	I	135.6	ı	166.5	I	N.A.
Wood manufacturers n.c.	ະ ເ	I	2.3	I	1.8	I	0.8	I	N.A.

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW-UP

By

Kini Karawa 1/

Introduction

Papua New Guinea occupies the eastern half of the island of New Guinea, as well as three other major islands (New Ireland, New Britain and Bougainville) and various small islands.

The country has a population of slightly over 3 million of which 87% live in the rural areas and the other 13% in developing urban centres. This indicates that there is virtually little need for industrial processed timber by the majority of the population as their demand for wood and wood products are mainly satisfied by direct abstraction from the forests.

The country is divided into 19 provinces, each with their own provincial government and department administering all activities in the province, including forest industries, in consultation with the national government.

The country has a total land area of 46 million hectares; of this, а total of 36 million hectares is considered closed forest area. The lowland rainforest (under 1,000 metres in altitude), comprising approximately half of the forest cover, constitutes the major forest resource and is abundant in species.

With a high forest resource per capita there is a relatively small domestic market and a heavier reliance on export of its forest products for growth and revenue in the forest industries sector.

PNG Forestry Industry

The Forestry Sector has increasingly established itself over the years to become one of the leading sectors in the country by providing employment to a growing work force, education and training, infrastructural development, an increasing source of income to the rural area and the government and as a major foreign exchange earner.

The Timber Industry is comprised of about 30 log exporters, 71 sawmills, one plywood mill and 2 woodchip mills. The wood processing industry is composed of 130 factories 2/ (sawmills, furniture factories, joineries, etc.).

industry employs over 10,000 people with a total capital The investment of some 30 million kina (Kina 1 = US\$1.08). In 1983 total royalties collected from all these operations amounted to 3.6 million kina.

Forest Statistics Office, DPI (Office of Forests, Papua New Guinea 1/ 2/ Some log exporters are also sawmilling

The industry currently earns about 56 million kina in exports which is approximately 12% of the total national export earnings. The major items of export have been round logs, sawntimber, woodchips and plywood. Other minor products exported are chopsticks, sandalwood, ebony flitches and veneer. The major export markets have been South Korea, Japan, Taiwan, Australia and New Zealand. The government earned about 4.4 million kina in export duty from log exports in 1983.

On the domestic front, the industry assists in making significant savings on the import of building materials. It is estimated that 100,500 cu. metres of sawntimber and 9,100 cu. metres, of plywood were used locally.

Forestry Statistics

It is an established fact that statistics is most essential to any organization for both its short and long term strategic planning and decision making. It is necessary look at past data and the present position to get an insight into planning for future courses of action.

The Office of Forests, Department of Primary Industry, collects basically four (4) types of data on the forests and forest industries. These are (a) Resource Inventory, (b) Production, (c) Trade and (d) Industrial data covering statistics of employment, wage earnings, construction activities, investment establishments, etc., is usually sought from the other relevant departments such as the Department of Industrial Development Department of Labour, the National Statistics Office, etc.

(a) Forests Resource Inventory Data

This area of data is very important to the country as a whole and for each province's assessment of what resource type and volume is available for development purposes. However, it will not be discussed at length here as it has been deemed inappropriate for discussions in this seminar. Briefly, the various Provincial Government, with the assistance of the National Government, carry out resource surveys of potential forest areas. After the surveys, potential forest areas have the right of timber harvest purchased by the national government, following which potenital investors are invited to submit proposals to the government to undertake an operation in the area.

(b) <u>Production Data</u>

Information is being collected on forest products covering mainly, logs, sawntimber, woodchips and plywood. All logging companies operating in the country record each of their logs harvested on 'Log Classification and Measurement Forms' (FD66), giving details of the measurements, log number, species, species classification, length (m), centre diametre (m), total volume and defects. This information is sent to the provincial forest offices where the royalty payments are assessed and the company is debited. The log harvest figures are used to monitor a company's log harvest quota in a timber permit area. The log harvest figures on volume, species and royalty assessed are submitted by the Provincial Forest Office monthly to the National Office of Forest.

Sawntimber, plywood and woodchip production figures are collected by the Office of Forest. This information is received regularly; however, sawntimber production data are not always complete because not all companies, particularly the small operators, keep accounts of their production and some operate on an "on and off" basis. Semi-processed sawntimber (e.g. mouldings, window frames, flood boards) are classified as sawntimber. The data on production of minor forest products such as joinery, furniture components, etc., are very limited due to the small size of the industry and thus the collection systems are not yet properly established.

(c) Trade Data

Trade statistics covering the three areas - Exports, Imports and Domestic use of timber and timber related products, are collected by the Office of Forests.

- (i) Export Statistics are collected for logs, sawntimber, plywood, woodchips and other minor forest products. The information covers export species grades, volume (m3) FOB value, price/m3, exporter destination and data of shipment.
- (ii) Import statistics on timber related products are collected through the National Statistical bulletins. Major items covered are paper and paper board, plywood, veneer panels and blockboards mouldings and wood manufactures. The data received are mainly on the items, value and country of origin.
- (iii) Domestic data on timber and timber products consumption (these exclude imported products), covering volume (m3), value (K) and prices/m3 of various items, are being collected, however, the system for information collection has not been effective enough. Items covered in this area are rough and dressed sawntimber, plywood, mouldings, furniture components, prefabricated housing and firewood. At present, the data here has been mainly a subject of estimation.

Existing Organization and Procedure

Since the decentralization process of the government in 1978, the forestry and timber operations have become more the responsibility of the Provincial Governments. The Provincial Forest Officers in each province are responsible for nearly all forestry statistics in close liaison with the National Office of Forests.

^{*} Note: Minor forest products include sandalwood, ebony flitches, veneer and chopsticks

All timber companies are requested to send the respective statistics (as mentioned above III, (a), (b), (c), on a monthly basis to the Provincial Forest Officer, who then send copies to the Office of Forests. Companies are also requested in the case of log export information, to submit copies of their Log Summaries, Export Entry Forms, Commercial Invoice and Bill of Lading to the National Forest Office as these are needed for timely export market evaluation.

Information covering production, export, and domestic sales of all forest products are received by this means. These statistics from the timber companies and PFO's are received through requests from the Office of Forests by Circulars, memorandums and company and provincial reports.

The Bureau of Customs assists by having their Provincial Customs Office submit Export Entry Forms of all forest products exported, to the Office of Forests regularly (i.e. as soon as export shipment is done). The export entry forms are filled out by all exporters and give details on shipper, port of shipment, product, volume and value, date of shipment and destination.

Another major source of statistics is through the National Statistical Office (NSO), which is the government organization responsible for national statistics collection. All other Government Departments and Statutory Authorities provide information to NSO constantly, which is then tabulated and published. All information concerning imports of timber-related products, industry employment, wage and construction activities, are received through NSO's quarterly and yearly statistical supplements.

Tabulation and Dissemination

All information received from the timber companies and Provincial Forest Offices, National Statistical Office and other government departments on the different data areas (i.e. Resource, Production, Trade and Industry) are collated, published and disseminated by the Office of Forests through its various publications.

Resource information gathered from surveys undertaken by the Provincial Forestry Office is sent to the Office of Forests for computerizing and the condensed sent to the Province.

Production information and most all other statistical information on the forest and forest industry are collated and published yearly in the 'Compendium of Statistics' (copy for 1981 is hereby circulated). This publication presents statistical information on:

- forest land and timber rights purchases,
- timber permits and licences,
- * Note: III(c) excludes Import which is collected from the National Statistical Office.

- log harvest and royalties
- exports and imports of forestry products,
- processing plants,
- forest plantation,
- Office of Forest staffing and training

The publication is distributed free to all government agencies in the country, PNG Embassies abroad and International Aid organizations like the UNDP, FAO, CFTC, while others would have to pay a small fee for the publication.

"Facts and Figures", a general introductory booklet on forestry and the forest industry sector is also put out by the Office of Forest yearly (1984 copy is distributed here). This is mainly to acquaint potential investors and others concerned with forestry and the developments in the industry, briefly introducing:

- the forestry policy,
- forest resource,
- major potential forest development areas,
- forest products and their uses,
- the timber industry,
- major existing operations,
- forest legislation
- export legislation and minimum export price control,
- investment guidelines,
- structure of the Forest Ministry plus addresses of those to contact concerning forestry and the forest industry.

This publication is also distributed free to PNG government departments, statutory bodies, PNG Embassies and International Aid Organizations while others will have to pay a small fee.

Export statistics covering all forest products exported are collated, analyse and published on a monthly basis in the "Timber Digest". The 'Timber Digest' presents each month's, and on a cumulative basis, the volume, FOB value, price/m3 and destination. For comparative purposes, figures for the previous year's month and cumulative period is also stated. For logs and sawntimber exports, the exporters are also mentioned.

(Copy of the latest published 'Timber Digest' is hereby circulated). The publication is distributed free to all who request it. While the publication has been commended on its usefulness, its timely publication and distribution has been greatly affected due to staff and financial constraints by the Office of Forests.

The above-mentioned publications can be obtained directly from the Director, Office of Forests, and you are also welcome to direct any question or query on any matter raised in them to the Director.

Year	Conifer ('000m3)	Non-Conifer ('000m3)	Total	Royalty Paid (K'000)
1980	118.3	1345,3	1463.6	2897.1*
1981	95.6	1211.5	1307.1	2798.6*
1982	240.7	1763.8	2004.5	5195.0*
1983	55.0	1816.5	1871.5	3582.4*

TOTAL LOGS HARVESTED

NOTE:

* Logs harvested under Permit and licences.

FOREST PRODUCTS EXPORTS QUANTITY IN (*000m3)

Year	Logs	S/Timber	P/ Wood	Veneer	Woodchips (000 Dry Tonnes)	Chopsticks	Others	Total
1980	641.9	45.2	6.5	1.5	121.1*	5.4	0,3	700.8
1981	742.8	23.78.2	7.8	0.4	102.7*	4.8	41.7+	779,6
1982	1063.3	21.2	6,3	1	147.8*	3.3	T	1-theol
1983	1019.2	20.1	2°2	,	107.9*	0.1	0.1+	6.4401
ŏ, , , * -	o bry tonne	×	ŝ					
<u>b</u> +				VALUE IN (1	15 EXPORTS			
1980	31192.9	6182,3	2982.4	212,0	7092.2	1135.4	47.6	s.thtst
1981	31263.3	3609,4	3068.9	68.8	5460.6	1270.2	33.9	1.STEH
1982	49576.2	3513.8	2887.8	ţ	5674.9	862.2	15,7	62530.6
1983	44055.7	3161,2	2464.2	T	5922.5	17.0	77.3	55697.9
				TOTAL PRODU QUANTITY I	<u>JCTI ON</u> <u>N (*000m3</u>)			
Year	S/Timber	Woodchip: ('000 Dry	s Tonnes)	Plywood	Chopsticks	Firewood	Veneer	
1980	141,0	28	38.0	25,3	7.0	11.0	14°0	
1981	100,5	21	18.0	16,7	4.8	10.0	7 。 4	
1982	275,8	1:	92.8	18,2	T	11.2	,	
1983	2 03 . 7	2	17.5	15.8	2,8	14、5	,	

EXPORTS OF FOREST, PRODUCTS 1980 DESTINATION, QUANTITY AND VALUE

COMMODITY	DESTINATION	QUANTITY ('000M3)	VALUE (K'000)
Logs	Japan	462.4	23146.2
	Korea	106.9	5137.7
	Taiwan	40.5	1460.5
	Italy	9.7	587.7
	Portugal	6.4	393.4
	China	10.5	310.9
	Hong Kong	5 . 1	95.2
	Germany	0.4	61.3
TOTAL		641.9	31192.9
Sawn Timber	Japan	27.2	3377.8
	Australia	12.4	1905.5
	New Zealand	2.9	457.4
	United Kingdom	1.1	170.7
	Singapore	0.7	91.3
	Portugal	0.4	82.4
	France	0.2	30.0
	Germany	-	4 . 5
	Hong Kong	-	2.7
	Others	0.3	60.0
TOTAL		45.2	6182.3
Plywood	Australia	6.4	2935.3
	New Zealand	0.1	42.1
	Western Samoa	-	5.0
TOTAL		6.5	2982.4
Veneer	Australia	1.3	190.9
	New Zealand	0.2	19.1
	Japan	-	2.0
ΤΟΤΑΙ		1.5	212.0
Woodchips	Japan	108.7*	6315,7
	Taiwan	12.4*	77 6 。5
TOTAL		121.4*	7092.2

Chopsticks	Japan	5.4	1135.4
TOTAL		5.4	1135.4
Sandalwood	Taiwan	~+	23.3
TOTAL		~+	23.3
Beading & Mouldings	Other Pacific	0.3	24.3
TOTAL		0.3	24.3
TOTAL PNG FOR 1980		700,8	48844.8
		121.1*	
		-+	

NOTE :

✤ '000 Dry Tonnes, not cubic metres

+ '000 Tonnes, not cubic metres

EXPORT OF FORLEST, PRODUCTS 1982 DESTINATION, QUANTITY AND VALUE

COMMODITY	DESTINATION	QUANTITY ('000M3)	VALUE (K'000)
Logs	Japan	561.5	26299.1
	Korea	416.4	19904.7
	Taiwan	60.1	2393.1
	China	10.6	370.6
	Hong Kong	10.4	378.2
	Italy	4.3	223.4
	West Germany	-	3.4
	Australia	-	1.1
	Singapore	-	0.6
TOTAL		1063.3	49576.2
Sawn Timber	Australia	11.2	1918.0
	Japan	7.1	1077.1
	New Zealand	2.8	464.6
	West Germany	-	1.0
	Others	0.1	53,1
TOTAL		21.2	3513.8
Plywood	Australia	5.6	2544,9
	New Zealand	0.7	342.9
TOTAL		6.3	2887.8
Ebony Flitches	United Kingdom	-	2.8
TOTAL			2.8
Woodchips	Japan	148.4	5674,9
TOTAL		148.8	5674.9
Chopsticks	Japan	3.3	862.2
TOTAL		3.3	862.2
Sandalwood	Taiwan		12.9
ΤΟΤΑΙ		-	12.9
rotal PNG for 1	98 2	1242.5	62530.6

EXPORT OF FOREST, PRODUCTS 1981 DESTINATION, QUANTITY AND VALUE

COMMODITY	DE ST INATION	QUANTITY ('000M3)	VALUE (K'000)
Logs	Japan	489.2	20191.3
	Korea	196.8	8979.8
	Taiwan	43.3	1417.9
	Hong Kong	6.1	327.4
	Portugal	3.5	208.3
	Singapore	3.8	125.5
	Germany	0.1	13.1
TOTAL		742.8	31263.3
Sawn Timber	Australia	14.2	2200.4
	Japan	6.0	918.5
	New Zealand	2 . 1	229.9
	Portugal	0.8	99.3
	United Kingdom	0.1	32.0
	Germany	-	14.8
	Others	0.6	114.5
TOTAL		23.8	3609.4
Plywood	Australia	7.5	2909.5
	New Zealand	0.1	39.1
	Others	0.2	120.3
TOTAL		7 . 8	3068.9
Veneer	Australia	0.4	68.8
TOTAL		0.4	68.8
Woodchips	Japan	94.1*	5107.6
	Taiwan	8.6*	353.0
TOTAL		102.7*	5460.6
Chopsticks	Japan	4.8	1270.2
TOTAL		4.8	1270.2
Sanda1wood	Taiwan	41.7+	33.9
TOTAL		41.7+	33.9
TOTAL PNG FOR 1981		779.6 102.7* 41.7+	44775.1

NOTE: *'000 dry Tonnes, not cubic metres; +Tonnes, not thousands cubic metres

EXPORTS OF FOREST PRODUCTS 1983 DESTINATION, QUANTITY AND VALUE

COMMODITY	DESTINATION	QUANTITY ('000m3)	VALUE (K'000)
Logs	Japan	492.1	21220.1
	Korea	463.0	20436.4
	Taiwan	53,3	2115.0
	Hong Kong	9.0	168.8
	West Germany	1.8	108.6
	Singapore	-	3.6
	Australia	-	3.2
	TOTAL	1019.2	44055.7
Sawn Timber	Australia	8.2	1443.9
	Japan	9.6	1289.3
	New Zealand	2.0	363.2
	United States America	0.1	15.2
	Others	0.2	49.6
	TOTAL	20.1	3161.2
Plywood	Australia	5.1	2225.5
	New Zealand	0.4	238.7
	TOTAL	5.5	2464.2
Ebony Flitches	United Kingdom	-	31.7
	TOTAL	-	31.7
Woodchips	Japan	154.4	5922.5
	TOTAL	154.4	5922.5
<u>Chopsticks</u>	Japan	0.1	17.0
	ΤΟΤΑΙ	0.1	17.0
Sanda1wood	Taiwan	0.1	45.6
	ΤΟΤΑΙ	0.1	45.6
TOTALPNG	FOR 1983	1 199.4	55697.9

By:

Juliet U. Texon 1/

Introduction

The purpose of this paper is to present the procedures followed by the Philippine Bureau of Forest Development in the collection, analysis and publication of forest data. But before discussing the procedures, I believe it is necessary for me to present first the forest management system in the Philippines.

The paper is therefore divided into three main sections:

- 1. The jurisdiction and organization of the Bureau of Forest Development
- 2. The production system
- 3. The procedures in the collection, analysis and publication of forestry statistics.

Jurisdiction and Organization of the Bureau

The Bureau of Forest Development is one of the agencies under the Ministry of Natural Resources. It has jurisdiction over forest lands, grazing lands and all forest reservations. It is responsible for: the protection, conservation, development, management and reforestation of the country's forest lands; the regulation and supervision of the operation of licensees, lessees, and permittees for the taking of forest products or use thereof; the implementation of multiple use and sustained yield management in forest lands; the protection, development and preservation of national parks, marine parks, game refuges and wildlife; the implementation of measures and programmes to prevent kaingin and managed occupancy of forest and grazing lands; in collaboration with other bureaus, the effective, efficient and economic classification of forest lands; implementation of forestry reforestation, parks, game and wildlife laws, rules and regulations.

The bureau also regulates the establishment and operation of sawmills, veneer and plywood mills and other wood processing plants and conducts studies of domestic and world markets of forest products.

^{1/} Chief, Forest Economics Section, Planning and Evaluation Division, Bureau of Forest Development

Organization

The organization of the Bureau may be viewed as a three level organization. These are:

> Level I - Central Office Level II - Regional Offices Level III - District Offices

The Bureau is headed by a Director. It has three Assistant Directors, namely: Assistant Director for Rural and Environmental Forestry, Assistant Director for Industrial Services, Assistant Director for Legal Affairs.

To perform the various functions at the Central Office, the Bureau has 15 divisions, and six staffs. One of these is the Planning and Evaluation Division which has among its functions, the development and maintenance of the forest resources and industry data bank.

There are 12 Regional Offices throughout the country. Each regional office has a Regional Director, Assistant Regional Director, three divisions and 2 staffs.

The regions have been further subdivided into district offices, and the total number of districts throughout the country is 200

Forest Management System

Under Philippine law, all forest lands belong to the state. Utilization of forest products, whether within forest lands or within alienable or disposable land (land certified as no longer needed for forest purposes), is done through license or permit.

There are several types of licences or permits issued for the gathering/utilization of forest products:

- Timber Licence Agreement a long term licence granted for the harvesting and removal from the forest lands of timber with the right of possession and occupation but with corresponding obligation to protect, develop and rehabilitate the area.
- 2. Special Permit a short term privilege to gather and utilize timber within forest lands.
- 3. Tree Recovery Permit a short term privilege or authority granted for the gathering of damaged timber within forest lands and timber within alienable or disposal land.
- 4. Private Land Tree Plantation Cutting Permit a short term privilege granted for the cutting/utilization of tree plantations inside titled private lands.

The Bureau also issues permits in the gathering or utilization of nontimber forest products such as rattan, bamboo, beeswax, oleo-resins, nipa, etc.

Wood processing permits are likewise issued to the operators of sawmills and other types of wood processing plants.

For purposes of control, all holders of permits/licences are required to submit periodic reports to the Bureau. These reports contain informtion on the volume of forest products gathered and removed from the forest.

Collection, Analysis and Publication of Philippine Forest/Products Statistics

Data Collection and Analysis

Production - As mentioned earlier, the licence/permit holders are required to submit monthly reports. The forms used are as follows:

For	m No.	-		Description
BFD-PED	Form	No.	1.01	Sawntimber Production and Disposition Report
BFD-PED	Form	No.	1.02	Pulpwood Production and Disposition Report
BFD-PED	Form	No.	1.03	Poles and Pile Production and Disposition Report
BFD-PED	Form	No.	1.04	Lumber Production and Disposition Report
BFD-PED	Form	No.	1.05	Veneer Production and Disposition Report
BFD-PED	Form	No.	1.06	Plywood Production and Disposition Report
BFD-PED	Form	No.	1.07	Blockboard Production and Disposition Report
BFD-PED	Form	No.	1.08	Fibreboard Production and Disposition Report
BFD-PED	Form	No.	1.09	Inventory of Productions
BFD-PED	Form	No.	1.10	Minor Forest Products Production and Disposition Report

The forms are completed by the licencee and submitted to the district office on the 5th day of the ensuing months. After verification by a forest officer the report is attested to by the district forester who then forwards the same to the Regional Office. In the Regional Office, the Plans and Programme Staff compiles the report which is then forwarded to the Central Office. At the Central Office the reports go to the Forest Economics Section of the Planning and Evaluation Division, where the reports are compiled. They are compared with the annual allowable cut and annual cutting area in the case of reports on round logs and minor forest products, and with the daily rated capacity and annual log requirements, in the case of reports of wood processing plants. Whenever discrepancies are noted, the Regional Office concerned is asked to verify/rectify. In cases where discrepancies cannot be rectified via the usual channel of communication (Radio Messages), personnel from the Forest Economics Section are sent out to verify and possibly reconcile the figures.

Domestic Prices

The Bureau has established forest products price monitoring centres. These are located in the National Capital Region (R-4), Northwest Luzon (Region 1), Northeast Luzon (Region 2), Eastern Visayas (Region 8) and Southeastern Mindanao (Region 11). Prices of lumber, plywood, fibreboard and minor forest products are gathered and reported to the Central Office on a monthly basis. This is complemented by the monthly survey on lumber and plywood prices conducted by the National Census and Statistics Office (NCSO).

Export Prices

Prices of exported forest products, by species, by grade, and by country of destination, are secured from the Economic Research of the Central Bank of the Philippines.

Foreign Trade Data

The agency tasked with the compilation of trade statistics is the NCSO. It is responsible for supplying export and import data needs of other government agencies, like the Bureau of Forest Development. According to the NCSO manual, foreign trade data are gathered by the NCSO from copies of import and export entries submitted by importers and exporters or their authorized representatives to the Bureau of Customs. Monthly tabulations available from the NCSO present the volume and FOB value of exports/imports of logs, lumber, veneer, plywood, fuelwood, charcoal, blockboard, battenboard and other boards, forest-based manufactured articles and non-timber forest products by species, by country of origin on a monthly basis. Foreign trade data are published annually in the Foreign Trade Publication of the NCSO.

Industry Capacities

The Presidential Committee on Wood Industries Development is a planning, evaluative and consultative body under the Office of the President. Its main objective is to maximize wood industry production and processing capacity as well as marketing potentials in order for it to continue providing social and economic contributions to the country.

Publication

Detailed information on Forestry Resources are contained in the Philippine Forestry Statistics, an annual publication of the BFD. The publication is prepared by the Forest Economics Section of the Planning and Evaluation Division. The compilation presents basic information on forest resources, forest resources/products utilization, forestry activities, trade, revenue and other statistics relevant to forestry. The Philippine Forestry Statistics is disseminated to libraries, offices concerned with forestry information and forest users.

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FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY Philippines

DATA SUPPLIED BY MNR, Bureau of Forest Development

	IMP	ORTS				ļ								
				198	0	••	Т	981	••	19	82	••	198.	
PRODUCTS		TIN	Quai	ntity:	Value	:Que	intity	Value	ð.	uantity:	Value	:Quar	itity:	Value
	••			••		••		•	••	••	• • • •	••		• • • •
CHARCOAL				••		••			••	••		••		
PULPWOOD	••	т е		7503 :	282355		i		••	••		••	••	
POLES, PILING AND POSTS	••	ω E		: 192	470945	••				18	. 77	7:	:09	1,508
FUELWOOD	••	kg		••						••			2,948:	1,124
SAWLOGS AND VENEER LOGS	••	с Б		7785 :	288780	••	7882	2976	23:	70:	23,40		95:	27,840
SAWNWOOD	••	т ш		31:	21702	••	170	3255	. 96	275:	455,69		382:4	44,659
VENEER SHEETS	••	m _e	, r	one :	none	••	15	1806	•	1:	1,39	•••		
PLYWOOD Plywood Blockboard		m _e			- 13492		1312 2	7285/		• •	1,96	•	11	2,670 -
PARTICLE BOARD				••								••	••	
FIBREBOARD	••	kg		••		: 36	3918	: 18294	••	••			169:	1889
WOODPULP	••	kg	552	11616:	2388709	0:342	45123	16037	595:3	7663955:	1794807	4:647	34225:1	9866867
PAPER AND PAPERBOARD	••	k	527	88035:	2777289	9:52	241475	28558	598:3	9537813	2067582	0:262	30173:1	4570382
Newsprint	••	80 X	200	30168:	9235846	:48	94526	:25197(07:2	670917 :	1,66051	8:119	2267 :	554,508
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FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY Philippines

DATA SUPPLIED BY MNR, Bureau of Forest Development

FRODUCTS : UNIT : Quantity: Value : : : : : : : : : : : : : : : : : : :		IMPOR:	ST	1980			1981		1982	••	198	
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AND VENEER LOG3 i 7785 : 288780 : 7882 : 297623 : 70: 23,408: 95: 2 AND VENEER LOG3 i i 31 : 21702 : 170 : 325596 : 275; 455,698: 382:44 HEETS i i i 134 : 21702 : 170 : 325596 : 275; 455,698: 382:44 HEETS i i i 170 : 325596 : 275; 455,698: 382:44 HEETS i i i i 1965 11 Plywood i i i 13492 : 217312 72854 5 1,965 11 BOARD i i i i i i i i i i BOARD i kg i <i td=""> i i i i i i i i i<i td=""> i i i i i i i i i<i< td=""> i i<i td=""> i<td></td><td>kg</td><td>••</td><td></td><td></td><td></td><td></td><td>••</td><td></td><td></td><td>4,948:</td><td>1,124</td></i></i<></i></i>		kg	••					••			4,948:	1,124
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FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY Philippines

DATA SUPPLIED BY <u>m MNR</u>, Bureau of Forest Dev. (Department, office, etc.)

PRO	DUCTION				
(In	'000 m ³)				
PRODUCTS	: : UNIT	: 1980	1 1981	: : 1982	: : 1983
PITROPS SAWLOGS, VENEER LOGS	; m ³ ; m ³	: 139 : 6,213	120 5,280	63 63	147 4,283
PULPWOOD	: m ³	390	496	541	: : 732
POLES, PILING AND POSTS	m ³	16	20	75	38
FUELWOOD	: m ³	: 92	94	83	: 47
CHARCOAL	m ³	2	28	2	30
SAWNWOOD AND SLEEPERS	: m ³	: : 1,529	1,219	1,200	: : 1,222
PLYWOOD	. m ³	553	457	422	459
BLOCKBOARD	. m ³	$\frac{1}{3}$	6	81	1 : 10
PARTICLE BOARD	m ³		-		8
FIBREBOARD	:	: :(data not	availab]	: le)	:
WOODPULP	:	(data not	availabl	e)	• • •
PULP OTHER THAN WOODPULP	:	: (data not	availab]	te	:
PAPER	MT 1/	296	229	202	: 192
PAPERBOARD	: <u>MT</u> <u>1</u> /	28	18	21	: 21
OTHER FOREST PRODUCTS 2/ Specify: Wood Residues	: m ³	5,081	4,310	3,612	3,544
	•	: :	:		:

 $\frac{1}{2}$ In thousand metric tons.

 $\frac{2}{2}$ Estimate only.

Ву

Maria Arlene Kumardasa <u>1</u>/

General

Sri Lanka has a total land area of 6.6 million hectares and a total population of 15.4 million as of 1983.

Sri Lanka's forest cover consists of Dry Zone and Wet Zone forests, as well as <u>man-made plantations</u>. According to the Forest Inventory taken in 1956, the forest cover was estimated to be 44 percent or 2.98 million ha. of the total land area. However, Sri Lanka's forest cover has changed considerably during the past 25 years. With rapid strides being made in agricultural development and multi-purpose irrigation projects, large extents of natural forests have been cleared, and even in the forests maintained as 'reserves' heavy exploitation has been carried out to meet the rapidly increasing demand for timber. This situation has contributed to wards the shortage of firewood and industrial wood-products.

The total forest area of Natural Forests in Sri Lanka in <u>1980</u> was estimated to be 1.6 million ha., covering 24 percent of the total land area of the Island, according to landsat imagery studies carried out. Man-made forest plantations are also an equally important timber resource covering a total area of 161,961 ha. as of 1983. The contribution made by non-forest wood resources to the Timber Industry is quite significant in <u>Sri Lanka</u>. It is estimated that about 50 to 60 percent of the industrial wood supply is met through these sources. Non-Forest Wood Resources consist mainly of wood from rubber, coconut, palmyrah and homestead gardens.

The value added from Forestry to the GDP at current factor cost prices was Rs. 1907 million in 1983, which is about 1.7 percent of the total GDP. This figure tends to under-represent the importance of Forestry since it does not reflect its major role in providing energy in the form of fuelwood for both households and inudstries. Also, the value added to the Industrial Sector from forest products is not taken into account when calculating the value added from Forestry.

All forests in the Island are <u>state-owned and managed</u>. The following are the state-owned organizations which either own and/or are involved in the administration of the specific forest lands:

1/

Forest Resources Development Project, Vatira Lane, Sri Lanka

Ministry	Institution	Main Functions
Lands & Land Development	Forest Department	Protection of forests, reforestation, management of FRR, PRR and State Forests
	State Timber Corp.	Harvesting, sawmilling and sale of fuelwood, charcoal, logs, poles and posts and sawnwood. Import of timber, reforestation.
	Land Commissioner's Department	Control of forest land through G.AA., A.G.AA. Release of State forest lands
Industries & Scientific	Ceylon Plywoods Corp	Manufacture and sale of plywood chipboard. Import of timber, harvesting of timber
	National Paper Corp.	Manufacture and sale of pulp and paper. Import of pulp and paper
State	Dept. of Wildlife Conservation	Protection and management of flora and fauna
Coconut Industries	Coconut Plant- ations(public and private)	Management of lands within their charge
Plantation Industries	Rubber plantations (Private)	Management of lands within their charge
Janatha Estates Develop- ment Board	Rubber plantations (Public)	Management of estate lands within their charge, re- forestation to meet further fuelwood requirements
Sri Lanka State Plant- ations Corporation	Rubber Plantations	

As mentioned in the above list, only the STC, CPC, and NPC are involved in the manufacture of traditional sector and modern sector forest products and their sales. The STC, who is involved in logging, maintains records with regard to the Forest Category, Class of Timber, Species, Length, Mid-Girth and volume. These statistics are recorded at the forest site and at the Depot, and when they are sent for processing they are once again recorded at the Sawmills. All Depots send records on stock-balance with given Volume and Sales to the Head Office. This data is computerised.

All production statistics of the CPC are also recorded in the same manner at the forest site, at the factory and at Sales Points. The same applies to the NPC, where ultimately all statistics on Production and Consumption go on record at the Head Office.

A summary of the statistics relating to Production and Consumption is usually published by these Organizations in their Annual Reports, Administrative Reports, Statistical Highlights, Monthly Returns, etc.

Apart from the State Sector involvement, the Private Sector also plays an important role within the Forestry Sector. About 80 percent of the sawnwood used in this Island comes from private sawmills, of which about 90 percent is from small sawmills where usually no records are maintained. However, the large sawmills keep records of their Production and Sales in the Financial Statements. These figures are not published.

Apart from this, the requirements of fuelwood, poles, rafters, etc. of the villagers are not met from commercial suppliers but are found by the villagers themselves from the vicinity. These statistics on Forest Products go unrecorded.

The two main Institutions involved in the Collection and Reporting of all statistics in Sri Lanka are:

- i. the <u>Central</u> Bank of Ceylon (under the Ministry of Finance and Planning); and
- ii. the Department of Census and Statistics (under the Ministry of Plan Implementation)

These institutions, although they do not pay special attention to Forestry or Forest Production, are involved in the collection and publishing of such data on a national level. The method they follow for the collection of data is by writing to the various State Sector Institutions concerned. These statistics, which are made available in their Publications, may be reflected as part of the National Product and Expenditure, Industrial Production, Capacities, Output and Sales, Prices and Wages, use of local raw material in industries, agriculture, etc. As for the statistics on the consumption of fuelwood, the <u>Dept.</u> of <u>Census & Statistics conducts a sample-survey as a part of the Consumer</u> Finance Survey, after which the data is published.

The Dept. of Census & Statistics has also carried out a survey on manufacturing industries including statistics pertaining to sawmills and other forest industries. The publications which contain Forestry Statistics are as follows:

Annual Report) Published by the
Review of the Economy) Central Bank of
Economic & Social Statistics of Sri 1	Lanka) Ceylon
Socio-Economic Data)
Statistical Year Book) Published by the
National Accounts) Department of Census &
Statistical Pocket Book) Statistics
Labour Force and Socio-Economic Surve	rey)

Apart from this, the Industrial Development Board (under the Ministry of Industries & Scientific Affairs) is involved in recording all data of Small-Scale Industries in the Island, where such data is published.

All import and export statistics relating to Forest Products get into the record at the Customs, which are stored by computer. However, in most cases the Forest Products are broadly categorised, are not recorded on an individual basis, and the unit given is in 'kilogram', in which case more accurate statistics on Imports and Exports oculd be obtained from the various organizations involved in the Forest Products trade, namely, the STC, the CPC and the NPC.

Information on Forest Product Prices are published in small booklets, merely for the benefit of the consumer. Here, various prices pertaining to various measurements are given along with information of Class of Timber, Handling Charges and Metric Equivalent to British Units for the convenience of the customer.

The capacities of Forest Industries are published in their Annual Reports and in the Central Bank Annual Reports.

Classification of Forest Products and Units of Measurements are as follows:

Forest Product	Unit of Measurement	Other
Primary Products) Logs)))	The mid-girth is ex- pressed in mts. and the volume in cubic decimal = dm3
Secondary Products)) cubic metre	
Sawnwood))	Length is measured in mts
Plywood))	and cross-section in mili-
Fuelwood))	meters = mm

Transmission)	
Poles and)	
s lee pers)	nos.
Poles)	
Charcoal)	metric ton
Pulpwood)	

The metric measurements for Forest Products were introduced about 2 years ago where, especially for sales-purposes, the values are also given in the former British Units. The private small-scale industries involved in Forest Production, still following the former British Unit System in measurements.

The Forest Resources Development Project, under the Ministry of Land and Land Development, whose primary objective is the preparation of a Master Plan, has embarked on the collection of statistics on the Production and Consumption of all Forest Products, including the non-Forest Wood Resources. The two Surveys which are being conducted for this purpose are, namely:

i. The Wood Demand and Market Survey for Wood Products

ii. The Assessment of Non-Forest Wood Resources

It would be very useful to discuss the methodology followed for data collection of forest Products in these two Surveys.

Wood Demand and Market Survey

The objective of this study is to get an up-to-date knowledge of the Structure, Geographical Distribution and Magnitude of the Market for Wood and Wood-Based Products, and also to assess the demand for forest products in the country up to the year 2000. The Study, which will be carried out over a period of six months, will cover the following products: Roundwood, Sawn timber, Railway sleepers, wood-based panels, wood pulp, paper and paperboard, transmission poles, fence posts, fuelwood, charcoal and others. In each case, the existing mills/saw mills, their capacity, annual production, import and export volumes, planned new projects, specifications of products, species distribution, Nos., locations and capacities of wood preservation facilities, etc., would be collected from 1970 to 1983, where projections would be made up to the year 2000.

This Study, which would cover almost all aspects of forest resources in the island, would be carried out as follows:

- i. collection of basic data
- ii. Interviews
- iii. Field surveys (sampling)
- iv. Localized case studies

Sample surveys will be carried out in all Sectors involved in forest products in the economy which would include households, furniture-makers, buildders, contractors, architects, timber depots, factories, etc. As for sawmills, a 100% sampling will be carried out inorder to assess the total timber circulated in the Island and the consumption pattern.

The Household Surveys that will be carried out in respect of fuelwood will be 800. A more intensive stratification method will be adopted for the survey where the country will be divided into six homogenous zones and, further, each zone will be classified according to 4 population stratas.

In order to obtain more up-to-date information on the consumptionpattern of fuelwood, a few localized case-studies will be carried out in a few selected households in different geographical areas and economic levels. Here, given a certain amount of fuelwood, the consumption will be measured by the end of the period.

The demand for fuelwood will be measured for each district separately. The study would come out with information on:

- i. the types of wood and other fibre materials that are used as fuel and their proportions and comparison to total use;
- ii. the prospective availability from the present sources of supply;
- iii. evaluate the factors affecting fuelwood demand and prepare Demand Forecasts up to the year 2000;

iv. identify the industrial users of fuelwood and the Fuelwood Market

The Survey would be carried out for the household sector and the industrial sector separately. The Industrial Sector would cover bakeries, eating houses, and factories using fuelwood as energy.

Assessment of Non-Forest Wood Resources

The objective of this Study is the same as for the Wood Demand & Market Survey. The Non-Forest Wood Resources include agricultural plantations, mainly, coconut and rubber, tea, palmyrah and homestead gardens.

The Study is intended to facilitate the formulation of realistic targets for Industrial Roundwood Production and Fuelwood Production.

The duration of the Study will be five months and would consist of the following Methodology:

- i. Interviews
- ii. Sampling
- iii. Field Measurements

The Study will come out with statistics on the plantation areas by districts, ownership pattern, annual areas clear-felled, number of stems and volume per ha, proportion of stem-volume suitable for various uses, total availability effect of planting of new varieties, present use, etc. In the case of coconut, the use of coconut husks and shells for fuel and their volume will be assessed.

As for field measurements to be carried out in coconut and rubber plantations, a plot of about 0.5 ha will be measured. All standing trees will be measured except for a 120 felled trees in each case. Sampling and measuring_ of home-gardens will be carried out after careful selection of the area has been made by the help of aerial photographs. Description of resources, estimated total area, total growing stock, annual growth, main tree-species grown, and size of average ownership, are expected to be collected from home-gardens. In each case, the areas felled from 1975 to 1983 will be collected and estimated up to the year 2000.

These two Studies are intended to facilitate the formulation of realistic targets for Industrial Roundwood Production and Fuelwood Production in the Forestry Master Plan Study.

The method by which the above two Surveys are being carried out for the collection of data on the Traditional Sector as well as the collection of data on the Modern Sector Forest Products could be explained in greater detail if necessary.

Forest Products Questionnaire - Follow-Up

Country: SRI LANKA

Data Supplied by: STC, CPC, NPC

PRODUCTION

Unit	1980	1981	1982	<u>1983</u>
cu.m	172 , 776	132,000	161,817	187,999
cu.m	31,469			
Nos.	44,574	19,151	20,444	38,080
cu.m.	314,931	474,027	668 , 790	682 , 227
m.t.	1,227	1,162	1,344	3,235
Nos.	95,911	147,846	97,240	146,592
cu.m	22,079	27,000	16,792	25,144
cu.m	146,000	145,000	189,000	
cu.m	5,000	5,000	5,000	
Tonne	11,496	11,515	10,164.9	10,332.51
m.t.	21,252	23,746	22,209.01	22,263.95
cu.m	516,000	819,000		
Nos.	377,122	370,559	915,045	890,294
		1,960/		
Nos.	13,693	4,643/	5,786	9,807
-			11,534	9,884
cu.m			188	882
	Unit cu.m cu.m Nos. cu.m. m.t. Nos. cu.m Tonne m.t. cu.m Nos. Nos.	Unit 1980 cu.m 172,776 cu.m 31,469 Nos. 44,574 cu.m. 314,931 m.t. 1,227 Nos. 95,911 cu.m 22,079 cu.m 146,000 cu.m 5,000 Tonne 11,496 m.t. 21,252 cu.m 516,000 Nos. 377,122 Nos. 13,693	Unit 1980 1981 cu.m 172,776 132,000 cu.m 31,469 19,151 Nos. 44,574 19,151 cu.m. 314,931 474,027 m.t. 1,227 1,162 Nos. 95,911 147,846 cu.m 22,079 27,000 cu.m 146,000 145,000 cu.m 5,000 5,000 Tonne 11,496 11,515 m.t. 21,252 23,746 cu.m 516,000 819,000 Nos. 377,122 370,559	Unit198019811982cu.m172,776132,000161,817cu.m31,46919,15120,444cu.m.314,931474,027668,790m.t.1,2271,1621,344Nos.95,911147,84697,240cu.m22,07927,00016,792cu.m146,000145,000189,000cu.m5,0005,0005,000Tonne11,49611,51510,164.9m.t.21,25223,74622,209.01cu.m516,000819,000Nos.377,122370,559915,04513,6934,643/5,78611,534cu.m188

E X P U R T S

Country : SRI LANKA

Data Supplied by: The State Timber Corp.

6	VALUE ks.	5,286,984	2,662,935	
198	QTY.	2368	97.5	
2	VALUE Rs.	2,551,943	1	
198	оту.	1157.7	1	
	VALUE Rs.	181,942	t	
198	OTY.	112.4	I	
0	VALUE Rs.	ł	I	
16	QTY.	1	l	
	TINU	M. T.	еw	
		Wood Ch _a rcoal	Timber Exports (Satin Logs or Sawn Timber)	

I M P O R T S

Country : SRI LANKA

Data Supplied by: The State Timber Corporation The National Paper Corporation The Ceylon Plywood Corporation

PRODUCTS	LINU	1980		198.		T	982		983
		OTY.	VALUE Rs.	ery.	VALUE R.	OTY.	VALUE Rs.	OTY.	VALUE Rs.
Woodpulp	τ. Έ	4,000	47,590,918*	7,500	69,448,863*	3,800	76,995,388*	3, 000	60,899,419*
Paper	Μ.Τ.	23,809		37,906		31,475		31,487	
Paperboard	м.Т.	4,725) 309, 944, 402 (3,978)220,120,555)	8,189)461,291,562)	12,920)529 , 626,425)
Veneer Sheets									
Sawn Wood	۳ ع	5,826.37		2,935.92				1,413.4	6
Square Teak				1,274.78					

* Includes Turnover Tax and Other Charges

Ву

Anan Nalampoon 1/

Introduction

Forest statistics in Thailand are not maintained at a satisfactory level. This is due to the fact that some sources of information or data are not reliable. Many important data needed to be compiled are sometime unavailable or out-of-date. Being afraid of tax collection, those questionnaires sent to private companies or private enterprises are not always honestly filled. It is often found that there are discrepancies in the answers and cross checking is needed.

Forest statistics in forest products, such as veneer, plywood, particle board, blockboard, wood handicraft, etc., are also very poor. The Royal Forest Department has no authority to force the owners of these businesses to report their productions. As mentioned earlier, the source of the information gathered from questionnaires is sometimes unreliable. Thus, it is not strange if information or data sought from this office are not available or able to be confirmed.

Data Collecting Agency

The Planning Division of the Royal Forest Department (RFD) is the central data collecting agency. It also performs the analysis as well as prepares the report. This office has to prepare the annual report of the RFD. Besides that it has to provide full details of all activities accomplished by this department to the Ministry of Agriculture and Cooperatives in publishing the annual report of the Ministry. Most of the statistical information is thus in the hands of this division.

However, other 12 divisions of the RFD have their own information relating to their responsibilities with more details.

The other affiliated agencies of the RFD, viz., the provincial forest offices, regional forest offices, forest checkpoints, etc., have to submit a monthly report to the headquarters. The report will include the local timber production in each province, timber transported out of the province, the budgetary situation, forest taxes and fees collected, monthly expenses of each office, etc. From this report the timber production and timber consumption of each province can be estimated.

Since the Planning Division does not have its own computer, most of data compiling, summarizing and analyzing are tediously done manually.

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Senior Forest Official, Planning Division, Royal Forest Department, Bangkok

The Sources and Method of Collection of Data on Traditional Sector Forestry Products

<u>Charcoal</u> - charcoal production from timbers of mangrove forest implicitly has to get permission from the RFD. The annual production can be estimated from the timbers cut from mangrove forests and the forest tax paid by the owner of the charcoal kiln to the government.

Charcoal production from those timbers harvested from inland forests can be partially checked. Those people who establish the charcoal kilns to produce charcoal on an industrial scale have to receive permission from the RFD. They have to pay fees and taxes for the timbers fed in the kiln. In the case of transporting the charcoal from the factory to the market, the kiln owner has to report to the local forest office and a paper will be issued to allow the transporting of the products from the producing place to the market. However the charcoal produced locally in the villages or from family businesses all over the country cannot be checked and their share is the greater part of the annual charcoal production in this country.

<u>Fuelwood</u> - used in industries, such as tobacco curing, pottery or powder lime producing can be checked. But fuelwood used daily in the households in suburbs cannot be checked. The people who live close to the forests have traditionally collected fuelwood from the nearby forest for their own usage. The total amount of fuelwood used for the whole country cannot be estimated accurately.

The amount of unprocessed roundwood, poles and posts which have been used locally by villagers also is not known. Some of them have been cut from private plantations. Such timbers are allowed to trade freely. The data relevant to this type of timber production and consumption are unavailable, except those poles or posts produced from the conceded forests or from government plantations, which need to be checked by the forester before selling or use in traditional industry.

Therefore it can be seen that information and data relevant to traditional sector forestry products are not completed.

Sources and Method of Collection of Data on Modern Sector Forestry Products

Industrial roundwood, sawlogs, and veneer logs are strictly controlled by the RFD. All round logs from the forests or imported logs can be transported to the factories after they have been checked for both size and timber species by the forester. The official will issue the timber-transportation paper to the truck driver to indicate that the logs have been officially checked. Transporting logs without such a paper is considered illegal; both truck and logs will be confiscated. Thus data of round logs used in the modern sector can be known from the record of the forest official which has to be reported to headquarters monthly. However, raw materials used in pulp and paper factories in Thailand are not forest products. Kenaf or Indian jute is used by a paper company located in the northeastern part of the country to produce craft paper. Some factories import pulp to feed their machines. Other government authorities such as the Ministry of Commerce, the Customs Department of the Ministry of Finance and the Forest Industry Organization are sources of data where details of imported and exported logs or sold logs can be found.

Dissemination of the Data within the Country

The Annual Report of the Royal Forest Department is produced and distributed every year. The Planning Division also regularly produces Forest Statistics of Thailand for distribution.

All publications concerning data in forestry produced by the Planning Division, will be distributed to all provincial forest offices, all divisions in the RFD, all university librariries throughout the country, forest industry companies, international agencies such as FAO, UNDP, etc. It is also disseminated to all interested government agencies and private companies. The RFD has its own library where the general public can use its services as well.

Organization other than the forestry sector involved in data collection

In Thailand there is no such agency or organization to collect the data relevant to forestry. The Forest Industry Organization, a government owned organization, collects the data which is involved with activity of its own interest only. The Customs Department also keeps records of forest products both imported and exported. The Ministry of Commerce has some data involving the timber trade. All these offices are contacted periodically by the Planning Division in order to get useful information and up-to-date data.

<u>Methods used for collection and dissemination of data on forest products</u> prices and capacities of forestry industries

In order to keep up with the prices of forest products in the market, questionnaires are regularly sent to the producers and retailers of forest products. In addition the Planning Division also sends teams to study the prices of forest products in the Bangkok market, which is considered as the central market price. Selling prices of the main forest products from the Forest Industry Organization and some big wood industries are also regularly reported. However, only the prices of the main forest products, for instance, plywood, blockboard, charcoal, particle board, sawn log, veneer log, etc., are known. For small forest products such as furniture or wood handicrafts, the prices fluctuate and deal on a piece by piece basis.

The local traders are not interested in the prices of forest products. This is because they have their own system of getting the most up-to-date data about the market prices of the products of their own interest.
The capacity of each forest industry has to be reported to the RFD and the Ministry of Industry in order to get a licence to operate the factory. To evade paying full income tax to the government, some forest industries do not report their actual product. Generally speaking, the total production of forest products is still not reliably known.

Method used for collection of forest products' trade statistics

The statistics of trade in forest products are absolutely unknown, especially for the domestic market. Only the export and import of forest products can be checked and are recorded by the Customs Department.

General observation

Classification forest products: only a few grading rules are applied to the forest products exported out of the country. British grading rules, Malaysian grading rules, or Indian grading rules are often applied in making trade agreements between parties. Thailand does not have its own forest product classification. In the domestic market the buyer and the seller will agree on trading only upon seeing the products or a satisfactory sample. The order will be cancelled if the products are not satisfactory.

Unit of measurement: both the English and the metric systems are used in forest products trading, depending on the products and the agreement between buyer and seller. Some products are sold by pieces. These procedures are generally accepted by the local market. The unit of measurement which appears in the report is thus the one which is acceptable by the local market, for instance, plywood in piece, round log in cubic metre, plank in cubic foot, etc.

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY Thailand

DATA SUPPLIED BY Planning Division, RFD (Department, office, etc.)

PRODUCTION

PRODUCTS	UNIT (000)	1980	1981	1982	1983
SAWLOGS, VENEER LOGS	cu.m	2,544.2	1,798.5	1,769.4	1,819.7
PULPWOOD *	-				
POLES, PILING AND POSTS **	-				
FUELWOOD ***	cu.m	635.7	643.0	857.2	772.5
CHARCOAL **	-				
SAWNWOOD AND SLEEPERS **	_				
PLYWOOD AND BLOCKBOARD	cu.m	88.7	106.1	160.4	164.8
PARTICLE BOARD	cu.m	8.7	9.0	28.2	32.9
FIBREBOARD	cu.m	29.6	41.9	30.6	35.0
WOODPULP *	-				
PULP OTHER THAN WOODPULP **	-				
PAPER AND PAPERBOARD	metric ton	459	487	560	677
OTHER FOREST PRODUCTS ** specify:	-				

* imported only
** data not available

*** not included in those uncheckable amount

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY Thailand

DATA SUPPLIED BY Planning Division, Royal Forest Department

(Department, Office)

	TIPEOR	10							
טשאותסמנ		1980		<u>,</u>	81	1982		1983	
	TTNO	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
			1000 萬		1000 18		1000月		1000 #
CHARCOAL	Кg	2,035,529	5,619	2,640,005	4,169	5,430,317	8 , 583	7,459,741	11,731
PULPWOOD									
POLES, FILING AND POSTS	cu.m				ł	2,015	4,849	2,693	9,676
FUELWOOD	Кg	427	9	780,135	135	280,895	57	243,130	48
SAWLOGS AND VENEER LOGS	cu.m	92,029	206,510	136,094	300,423	141,639	335,464	229,155	711,131
SAWNWOOD AND SLEEPERS	cu.m	cum342,256 Ka 976	919,446	cum430,617 Ka 1,147	1,428,203	346,813	1,357,601	385,144	1,519,306
VENEER SHEETS	m.u2	85	2,395	408	11,659	923	14,182	156	3,266
PLYWOOD AND BLOCKBOARD	Кġ	59 5 ,706 30	6,807 2	842,793	12,177	1,1 56,114 56	17,402 6	1,1 96,461 32,000	21,462 224
PARTICLE BOARD	Kg	238,877	6,913	356,967	12,344	822,069	12,956	360,510	7,961
FIBREBOARD	Kg	1,574,893	23,379	1,483,924	24,502	839,425	13,531	1,426,325	21,707
WOODPULP	ton	80,737	942,856	113,637	1,313,000	92,152	918,908	122,344	1,203,984
PAPER AND PAPERBOARD	ton	1 36,159	2054,492	162,527	2,753,340	153,276	2,486,316	219,351	2,862,640
newsprint		-							
Other printing and writing									
Other paper and paperboard									
	Ŭ	prversion 2	3 12	S 3 1					

FOREST PRODUCTS QUESTIONNAIRE - FOLLOW UP

COUNTRY Thailand

DATA SUPPLIED BY Planning Division, Royal Forest Departmen

EXPORTS

(Department, office)

		1980		1981		196	32	19	183
PRODUCTS	TINU	Quantity	Value	Quantity	Value	Quantity	Value	Ouantity	Value
			1000 B		1000 B		10000		10000
CHARCOAL	Kg	39,742,609	49,174	51,342,753	63,767	64,744,257	8 3,837	70,283,227	94,026
DULPWOOD									
POLES , PILING AND POSTS		1	1	E	l		1		1
FUELWOOD	Кg	1	-	5,000	6	82,242	352		B
SAWLOGS AND VENEER LOGS	cu.m	28	39	7,115	64,811	-	91	631	927
SAWNWOOD AND SLEEPERS	cu.m	1,521	7,688	682	5,645	1,463	8,319	562	3,181
VENEER SHEETS	cu.m	6,805	269,464	5,858	266,922	5,811	300,348	6,699	368,998
PLYWOOD AND BLOCKBOARD	Kg	1,271,055	11,402	2,711,491	16,358	1,322,092	8,106	71,307	2,393
PARTICLE BOARD	Kg	553,273	19,968	349,227	17,105	459,927	20 ,8 56	341,285	10,321
FIBREBOARD	Кg	5,902,043	28,831	5 <i>;114</i> ,234	32,836	6,990,950	40,883	10,836,370	56,574
WOODPULP	Кg	Ĩ	1	819	17	305,084	2,578	914,174	12,139
PAPER AND PAPERBOARD	ton	14,553	196,436	7,511	155,104	7,712	192,605	4,719	153,219
OTHER FOREST PRODUCTS									
specify :									

DATA PROCESSING AND FORESTRY

STATISTICS IN FAO

By

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F. Padovani<sup>1/</sup>
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Forestry statistics are generally compiled on an annual basis to aid understanding the trends in the past. Statistics are also used as a tool to predict the future. In recent years both data sources and the data processing environment have undergone a vast change. This paper deals with the forestry statistics being published by FAO and some of the aspects of data processing.

Contents of FAO's Yearbook of Forest Products:

Total Production Quantity
Total Imports Quantity
Total Exports Quantity
Total Imports Value
Total Exports Value
Qualifier for Production Quantity
Qualifier for Imports Quantity
Qualifier for Exports Quantity
Qualifier for Exports Value
Qualifier for Exports Value
Forest Products
Country
Year

The measure used to quantify Total Production, Imports, and Exports depends on the products: they are shown either in metric tons or cubic meters. The values of Total Import and Export are exhibited in US Dollars. The data quality can be: Official, Estimated, or Project. Data availability from 1961 on:

```
Size of the data base
Y = number of years
P = number of products
C = number of countries
Fi-Fn = format of the variable in bytes
Y * P * C = Kl Number of cells for each variable
Kl * Fl = Bl Storage for each matrix
Bl + B2 + .. Bn Total storage required
Plus the calculated country and product aggregations.
Plus the ancillary files.
Plus all derived data such as Consumption = P + I - E, the Self-
sufficiency = P * 100/C, etc...
```

^{1/} Statistics and Economic Analysis Unit, FAO, Rome.

What does the Pulp and Paper Capacity Survey Contain?

It is an annual survey

Total Production Capacity (for pulps and papers) Total Production Capacity of which market pulp (only pulps) Total Production Capacity (for pulps and papers estimated for next 5 years) Total Production Capacity of which market pulp (only pulps) estimated for next 3 years They are measured in 1000 metric tons The data are freshly provided by the country or estimated based on the data from the previous year. T = total capacity (for 6 years)M = market capacity (for pulps and for only 4 years) P = number of products (65, of which 31 are pulps) C = number of countries((6 years * 65 products) + (4 years * 31 products)) * C Paper and pulp market pulp

This formula gives the annual increase in the data collected for pulp and paper historical capacity survey.

The meaning of 0 is that the product is not produced. The meaning of . is that NO information about the product has been made available.

What does the Pulp and Paper Production Survey Contain?

It is an annual survey which is conducted simultaneously with the Pulp and Paper Capacity Survey.

Total Production (for pulps and papers)
Total Production (of which market pulp)
Production is measured in 1000 metric tons
The total production figures are for the current year.
The total market production figures are only for pulps.
T = total capacity
M = market capacity
P = number of products (65 of which 31 are pulps)
C = number of countries (returned questionnaires)
 (65 products + 31 products) * C
 paper & pulp market pulp

This formula gives the annual increase of the data collected for the pulp and paper production survey.

```
Wood-based Panels Industry Survey 1983
     It has been computerized this year
     What does it contain?
         - Number of operating plants
         - Estimated annual production capacity
         - Annual production
         - Operating days per annum of a typical plant (only 1 year)
         - Shifts per day in a typical plant (only 1 year)
     Products
     1. Veneer sheets
    2. Plywood le bosh
3. P Particle board
     3.2 Non-wood based
     4. Fibre Board (fibre building board)
     4.1 Hardboard and medium hardboard (compressed)
     4.2 Insulation board (non-compressed)
     5. Total wood based panels (1+2+3+4)
     Year coverage
         1979-82 are actual data
         1983-84 are estimated data
     Country
     107 countries
     It is an integrated data base containing data from the questionnaires.
Missing data are drawn from Yearbook of Forest Products.
What does the TRADE MATRIX FROM YEARBOOK OF FOREST PRODUCTS database Contain?
     It is still being developed. The years covered are from 1966-1983.
     The product code list consists of the following:
```

247.10 = Sawlogs and Veneer Logs (C) 247.20 = Sawlogs and Veneer Logs (NC) 246.01 = Pulpwood Round and Split 246.02 = Chips and Particles 248.20 = Sawnwood (C) 248.30 = Sawnwood (NC) 634.10 = Veneer Sheets 634.32 = Particle Board 641.60 = Fibreboard





```
251.00 = Wood Pulp
641.10 = Newsprint
641.00 = Paper and Paperboard and Newsprint
Reporter country
Trading partner
Volume
```

Population Date Base

It is not a Forestry Department Data Set but is widely used in forestry economic analysis. It contains: population at national level from 1961 to 1981.

Population projection for the years 1982-85, 1990, 1995, 2000.

Forest Product Prices Data Base

The data provided are:

Prices in national currency Prices in the equivalent price in US Dollars Index of the dollar price having as base year 1970 from 1961 on.

Gross Domestic Product

It is not a Forestry Department Data Set but is widely used in forestry economic analysis.

It contains GROSS domestic product in current prices; GROSS domestic product in fixed prices.

The data from 1961 to 1981 and estimates are:

Low - GROWTH RATE 80 - 85 Low - GROWTH RATE 85 - 90 High - GROWTH RATE 85 - 90 Low - GROWTH RATE 90 - 95 High - GROWTH RATE 90 - 2000 High - GROWTH RATE 95 - 2000

Pulp and Paper Industry Data in the OECD Countries 1961-1981

It was requested in October, 1983 that we computerize the OECD publications: finally after one year, the data bank is ready to be used.

This computerized data bank contains information on:

Total Imports (total A)Total Exports (total B)Production

for Pulp, Paper, Fibre Building Board, Waste Paper: for a total of 65 products for 22 countries, covering the period 1961 to 1981.

What has been calculated from this data base?

The Apparent Consumption using the formula: P+I-E

World Forest Resources Database

It is being developed at the moment: only the Tropical Forest Resources have been computerized.

Recommended Database Structure

We must try to describe the data in a way that will avoid complexities. The desired data management techniques must be understood easily by users with no training in programming; make it possible to add to the database without changing the existing logical structure of application programmes, and permit the maximum flexibility.

Hierarchical, tree, or pointer-linked logical data structures can often inhibit changes that may be needed as the database grows.

The most natural way to represent data is with a data matrix, also known as a two dimensional table, or flat file. In this form of data representation, the columns are the variables and the rows represent observations.

The most complex tree or hierarchical data structure can be reduced to a collection on flat files.

The tables, or flat files, are rectangular arrays that have the following properties:

- Each column in a table represents a single valued variable.
- Rows are distinct, with no duplicates.
- Tables are column homogeneous; that is, in any column all items are of same kind.
- Each column is distinct, with a unique name assigned
- Both rows and columns may be viewed in any sequence without affecting the information content of the table

Basic Data Structures ARRAY "A"

ARRAY "B"

2)	country product pl	p2	pn ''''

Updating of Time Series



- 1 Annual returned questionnaires or estimated data
- 2 Add new data series
- 3 Update the frozen file

How to Validate the Time Series?

- Horizontal validation can be done using the mean, the standard deviation, growth rate, etc.
- Vertical validation allows screening an overall forestry process. It is particularly important when data comes from different forest sectors. The "Fiber Balance System" chart is a tool for Pulp and Paper data validation.

Forest Product Outlook Studies

The following illustration depicts the sequence of events in creating the database for pulp and paper, integrating FAO/Forestry databases.

THE OUTLOOK STUDY OF FULP AND PAPER FLOW.

step 1	the Carolina strain and the second strains	
	! data base !	
	4	
step 2	<pre>Analysis of the data ! # Graphical analysis ! # Correlation analysis! # Etc</pre>	
	Ţ	
step 3 +	Specification of the model ! * Data transformation ! * Equation form selection !	
4		1
4	Estimation of the parameters!	
4	,	
9 (((Parameter Evaluation) (* Economic criteria) (* Statistical soundness)	Unacceptable !
,	¢₩ ! ! Acceptable !	
	<pre>* * * * * * * * * * * * * * * * * * *</pre>	Unacceptable !
	(* Economic analysis)	
	! ! Acceptable !	
step 4 ·	Build, test and apply models ! !to forecast independant ! !variables !	
•	4	
step 5	<pre> Application of the model ! * policy evaluation ! * forecasting ! }</pre>	

The first step is the creation of the data base containing:

- 1. the dependent variables
- 2. the independent variables

The other steps fall into the following categories:

- Data Analysis (Step 2)
- Construction and validation of Product Models (Step 3)
- Dynamic Models to forecast Independent Variables (Step 4)
- Application of the model (Step 5)

At this level of the Outlook Study for Pulp and Paper project we are at Step 1 - Creation of the Data Base. Here the problem is to decide which methodology(ies) to apply based on an analysis of the data available.

:bamboo, straw, : :wood raw material: :bagasse, etc. : :CONSUMPTION for : CONSUMPTION for : pulp pulp • ****** ****** * wood pulp * +----* FRODUCTION *--* other fibre pulp* +---* PRODUCTION *--¥ ···· ··· + ***** ****** 1 1 v v ******* ****** * other fibre * * wood pulp * * pulp EXPORTS * × * EXPORTS ************ ******* I. ! v v ************ ***** ***** * wood pulp * * IMPORTS *----* other fibre * * PULP * -->* CONSUMPTION *(----* pulp IMPORTS * ************ ***** ****** 1 1 ****** ----->*OTHER USES OF * , filler , * PULP ¥ , CONSUMPTION ,------************ 1 1 v v + PAPER + ---+ PRODUCTION +<-----I. + paper + + IMPORTS +---****** >+ PAPER + + CONSUMPTION + 1 1 v +CONTAMINATED + + PERMANENT + waste paper +AND DESTROYED + + RECORDS + "AVAILABILITY * "waste paper"<----" waste paper " *EXPORTS RECOVERY " Waste paper " "waste paper" *IMPORTS *--->* CONSUMPTION *---->+ Industry Working Party on Wrapping and Packaging Paper OTHER USE of Stockholm, 26-28 Sept. 1984 "Waste paper By L. Lintu edited by F. Padovani

Graphical presentation of an Integrated System for the Outlook Studies for Supply and Demand of Forest Products

++++++ * Historical data ++++++++< ' 85 >+++++++++ + Predicted data +++G +***********<'80 >********** ++ D *********** . >********* 4.4. +++** F' ********** _ >********* **++ +++*** **********< '75 >******** ****+++ ***** +++******** D ******* . >******* ******** +++********* F' ******<''70 >****** T ********* +**** ***** ₽ ************* G ****<) ***** + R ********** D ***<15 >*** P ******* T ¥+++ +++ I ******** F' **< . >** X ******* R ***+++ +++*** С +++****** ***** ****** +++**** **** **** 1 ************* +++******** ***** FOREST ** *************** +++*** ** F' P ****************** .. R ****** . () ****************** +++**** D U . I) ******************** PRODUCTION N ×υ. . U * CAPACITY +++************* С Т . С * ************* * +++*** Τ., Γ., Τ. ***************** +++**************** • • • • • • Y • ***** +++************ ×× FOREST ** ************** +++*** *** 关关 W *********** +++*********************************** ***** A ************* +++**** 关头关头外外外子子 P ★★★★★+++ ***+*+ p * + + + E ++++ ₽ **************** R. +****************** +++++++++******** ****** +++**** 关关关关关关关关关关关关关关于十十 +++*** ********* +++++

AUSTRALIA	QUANTETY	QUANFIT	E CANTIC	AD 1000			VALUE	VALEUR	VALOR 10	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N AUSTRAL			*********			******	*******	**********	
FUELWOOD AND CHARCOAL	1147	1461	1462	1472	1466	1387	1398	1409	1763	2069	2469
IND. ROUNDWOOD	947.2	9192	10564	9408	9123 4598	9452 4086	8749 4067	9014 4300	9794 4554	9213 4454	8105
PANELS	654	791	702	837	855	810	841	907	948	965	787
PAPER AND PAPERBOARD	1620	1765	1764	1541	1837	1732	1902	2029	2020	2133	1887
OPULATION	13180	13399	13621	13840	14062	14283	14501	14714	14919	15121	15317
CONSUMPTION OF MAIN CO	MMOUITIES P	ER IOUG C	APLIA								
FUELWOOD AND CHARCOAL	87 719	109	107	106	104	97 662	96 603	96 613	118	137	161 529
SAWNWOOD & SLEEPERS	341	351	319	322	327	286	280	292	305	295	233
PANELS PAPER AND PAPERBOARD	123	1 32	129	111	131	121	131	138	135	64 141	123
VALUE ALL FOREST PRODU	CTS (US\$)										
IMP•VALUE EXP=VALUE	302996 97079	464248 130189	483644 100530	420485 91756	538467 117531	520761 127575	618129 147343	750838 217963	808975 257307	865174 234665	615452 218404
ROUNDWOOD	CUM										
	17/67	12061	14463	14343	16364	15/55	16003	17050	17400	16040	14.016
IMP.QUANTITY	12457	104	42	48	23	23	19	2	1/690	10440	10015
IMP .VALUE EXP .QUANTITY	4432 1937	7165	2367	2832 3513	2167 4788	2370	1996 4964	274	100	237	312
EXP-VALUE	67026	96158	65887	65422	68369	93252	106982	151321	138829	179206	140249
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	1146	1460	1461	1471	1465	1386	1397	1408	1762	2068	2468
IMP.VALUE	1	1 14	1 31	1 31	1 31	1 102	1 102	1 102	1 25	1 25	1 25
- IND+ ROUNDWOOD	CUN										
PRODUCTION	11311	11591	13192	12872	13889	14069	13696	15651	15928	14872	13547
LMP+QUANTITY IMP+VALUE	98 4415	104 7151	41 2336	47 2801	23	22	18 1894	172	0 75	212	1 287
XP-QUANTITY XP-VALUE	1937 67026	2503 96158	2669 65887	3513 65422	4788 88369	4639 93252	4964 106982	6637 151321	6135 188829	5660 179206	5444 140249
- SAWLOGS & VENEER	CUM										
PRODUCTION	8663	8565	7546	7833	8003	8063	7686	8508	8900	8478	6983
IMP+QUANTITY	97	102	38	46	15	17	10	0	0	1	1
EXP-QUANTITY	4572	• 3	2147	2761	2032	2010	1494	103	0	181	1
EXP+VALUE	278	539	490	20	47	0	102	181	52	100	95
AWNWOOD & SLEEPERS	CUM										
PRODUCTION	3490	3499	3511	3490	3488	3191	3168	3389	3553	3364	2794
IMP • QUANT LIY IMP • VALUE	89237	1271	909	1025	1167	947	969 174480	993 216461	1061	221900	626 146914
EXP.QUANTITY	84	63	69	62	57	52	70	83	60	51	45
AF . TALVE	0000	10108	10260	10208	10427	11148	19548	61438	17331	14524	12104
PANELS	CUM		_								
PRUDUCTION IMP+QUANTITY	646 83	728 108	654 100	728 126	758 112	745 80	760 92	847 82	865 99	871 105	732 74
INP.VALUE	14330	29079	23659	32398	33911	26890	35493	39698	47519	45186	34343
EXP .VALUE	6126	45 5770	5480	3511	15 3360	16 3340	12 3582	23 5917	17 6452	11 4328	20 4311
- PLYNOOD	CUM										
PRODUCTION	119	114	78	73	78	85	87	87	89	89	71
IMP • QUANT ITY IMP • VALUE	53 8995	69 19136	57 13911	94 22597	80 24180	64 19959	74 27139	63 29328	76 35235	81 34913	54 24079
XP-QUANTITY	1	3	2	0	1	0	1	1	1	2	1F
CAP•VALUE	1467	1486	13/2	1347	1278	1226	1827	2483	3210	2441	1520
ULP FOR PAPER	MT										
PRODUCTION	510	612	571	557	581	602 235	656 2 1 ∡	702	708	762	752
IMP.VALUE	50048	64332	90996	67272	73209	60801	76383	99785	121915	101445	72674
EXP•QUANTITY EXP•VALUE	0	0	765	425	5 425	5 425	0 39	0 39	4 583	4 583	0 0
PAPER & PAPERBOARD	MT										
PRODUCTION	1152	1185	1142	1126	1249	1226	1311	1430	1427	1465	1430
EHP+QUANTITY THP-VALUE	520	622 203677	652 255074	436	620	550	632	695	704	748	528
EXP-QUANTITY	52	42	30	21	32	43	41	95	111	80	72
EXP . VALUE	15072	18153	18138	11890	14950	19410	20442	39248	44112	36019	61740

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BANGLADESH	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 100)0	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N BANGLADES	бн								
FUELWOOD AND CHARCOAL IND. ROUNDWOOD SAMWOOD - SI SEDEAS	23669 1013	24046 1082	24848 913	25510 1065	26232 1041	27000	27796 881	28606 889	29426 896	30262 992	31118 933
PANELS	210	280	46	40	42	43	100	136	11	11	178
PAPER AND PAPERBOARD	42	52	43	39	46	39	51	50	62	60	68
POPULATION	72452	744 38	76582	78779	81049	83384	85777	86219	90709	93246	95830
CONSUMPTION OF MAIN CO	MHODITIES P	ER 1000 CAP	PITA								
FUELWOOD AND CHARCOAL IND. ROUNDWOOD	327	323	324	324	324	324	324	324	324	325	325
SAWNWOOD & SLEEPERS	3	4	3	2	12	ź	2	10	2	2	2
PANELS	0	0	1	ĩ	ī	ĩ	ō	ō	õ	0	õ
PAPER AND PAPERBOARD	1	1	1	0	1	0	1	1	1	1	1
VALUE ALL FOREST PRODU	CTS (US\$)										
IMP.VALUE	6732	9417	1001	3936	5173	3108	4430	4430	2034	2034	2328
EXP-VALUE	2809	2436	1253	1735	4018	5878	6185	6400	3945	5695	5695
ROUNDWOOD	CUM										
PRODUCTION	24682	25128	25761	26575	27273	27755	28677	29495	30322	31254	32051
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	23669	24046	24848	25510	26232	27000	27796	28606	29426	30262	31118
- IND. ROUNOWOOD	CUM										
PRODUCTION	1013	1082	913	1065	1041	755	881	889	896	992	933
SAWLOGS & VENEER	CUM										
PRODUCTION	704	778	614	760	730	436	555	555	555	643	583
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	210	280	236	148	165	176	176	176	176	176	1.76
IMP.QUANTITY	0	0	4	3	3	3	10	10	1	1	2
IMP.VALUE	18	18	735	490	655	655	1930	1930	2 3 1	231	525
PANEL S	CUM					,					
PRODUCTION	29	36	46	40	42	43	12	11	11	11	11
- PLYNOOD	CUM										
PRODUCTION	7	11	13	4	z	2 F	ZF	1	1	1	16
PULP FOR PAPER	MT										
PRODUCTION	40	34	28	54	43	67	81	81	61	81	81
IMP.QUANTITY INP.VALUE	18 6714	12 9399	0 266	6 3446	8 4518	6 2453	2500	6 2500	4 1803	4 1803	4 1803
PAPER & PAPERBOARD	ят										
0.000 (CT 10)		10					_	_			
EXP-QUANTITY EXP-VALUE	54 12 2809	60 8 2436	49 6 1253	45 6 1735	62 16 4018	58 20 5878	71 21 6185	71 21 6400	73 11 3845	83 15 5695	83 15 5695

BHUTAN	QUANTITY	QUANTITE	CANFIDAG	0001			VALUE	VALEUR V	ALOR 100	00	
*****	1973	1974	1975	1976	1977	1978	1979	1980	1931	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N BHUTAN					545422354				
FUELWOOD AND CHAPCOAL	2466	2517	2572	2630	2690	2750	2814	2884	2946	2946	2946
NO. ROUNDWOOD	238	239	238	238	238	339	271	271	271	271	271
SAWNNOOD & SLEEPERS	0	0	0	0	0	-1	-1	-1	-1	-1	-1
ANELS	0	0	U	U	0	0	U	0	U.	U	0
OPULATION	1111	1134	1157	1181	1205	1230	1255	1580	1307	1333	1360
ONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CA	PITA								
UELWOOD AND CHARCOAL	2220	2220	2/23	2227	2232	2236	2242	2253	1254	2210	2166
ND. KUUNDWUUU	/14	210	206	202	148	275	216	/11	201	203	199
ANELS	0	0	ú	0	o	0	-1	-1	0	0	-1
ALUE ALL FOREST PRODU	CTS (USB)										
		•	0	2	â	<u>^</u>					
XP .VALUE	0	0	ů ů	0	0	501	501	501	501	501	501
OUNDWOOD	CUM										
RODUCTION	2704	2755	2810	2868	2928	3096	3092	3162	3224	3724	3774
XP.QUANTITY	0	0	à	O	0	7	7	7	7	7	7
XP.VALUE	0	0	0	0	0	217	217	217	217	217	217
FUELWOOD & CHARCOAL	CUH										
RODUCTION	2466	2517	2572	2630	2690	2750	2814	2884	2946	2946	2946
IND. ROUNDWOOD	CUM										
RODUCTION	238	238	238	238	238	346	278	278	278	278	278
XP.QUANTITY XP.VALUE	0	0	0 Ú	0	0	217	217	217	217	217	217
	-			-	-				•••		
- SAWLOGS & VENEER	CUM										
RODUCTION	200	200	200	200	200	308	240	240	240	240	240
XP-QUANTITY YP-YALIE	0	0	<u></u>	0	0	7	7	7	7	7	7
	0	0	0		0	~	211	211	217	211	217
ANNWOOD & SLEEPERS	CUM										
RODUCTION	0	o	0	0	0	5	5	5	5	5	5
XP-QUANTITY	0 2	0	0	0	0	6	6	6	6	6	6
XP • VAL UE	0	0	0	0	0	284	284	284	284	284	284
ANELS	CUN										
MP•QUANTITY MP•VALUE	0	0	0 0	0	0 0	0 0	0 95	0 143	0 1 4 3	0 0	0 0
PLYNOOD	CUM										
MP.QUANTITY	0	0	9	o	a	0	0	a	ÖF	0	OF
MP.VALUE	õ	ō	ŏ	õ	ŏ	õ	95F	143	143F	ō	ÕF

BRUNE I	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALUR 100	10	
	1973	1974	1975	1976	1977	1978	1979	1780	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N BRUNE1									
FUELWOOD AND CHARCOAL	71	75	77	11	78	90	81	81	81	81	80
IND. ROUNDWOOD	88	89	120	155	152	1 32	143	136	203	215	216
SAWNNUOD E SLEEPERS	40	42 6	50	0 č 4	69	52	10	11	18	12	90
PAPER AND PAPERBOARD	1	ĩ	i	1	i	i	1	1	1	Z	ź
POPULATION	150	156	162	173	136	201	215	228	240	250	260
CONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CAF	1TA								
FUELWOOD AND CHARCOAL	473	479	472	445	418	396	376	353	336	322	309
IND. ROUNDWOOD	597	512	741	896	817	657	667	597	846	860	831
SAWNWOOD C SLEEPERS	305	269	306	358	371	308	307	261	348	394	344
PAPER AND PAPERBOARD	4	5	5	5	4	4	4	4	4	8	1
	CTS 111541										
VALUE ALL FOREST FROOD	(034)					****		34.5		(130	-1.4.2
IMP .VALUE EXP .VALUE	1499 241	1148	1189	1278 241	250	109	3418	3945 14	6064 70	5139	7182 90
ROUNDWOOD	CUM										
PRODUCTION	159	164	197	232	230	212	224	217	284	296	296
1MP.QUANTITY	Ó	0	ò	0	0	0	0	ò	0	ō	0
1MP.VALUE	2	2	0	0	0	0	0	0	0	0	0
- FUELNOOD & CHARCOAL	CUM										
PRODUCTION	71	75	11	77	78	80	81	81	81	31	80
- IND. ROUNDWOOD	CUM										
PRODUCTION	88	80	120	155	15.7	132	143	136	203	215	216
1MP-QUANTITY	ő	ő	0	Ó	172	ō	Ĩ		- 0 <u>,</u>		0
IMP.VALUE	2	z	0	0	0	0	0	0	Ō	0	0
SAWLOGS & VENEER	CUM										
PRODUCTION	82	82	115	148	144	124	1 3 5	128	195	206	206
SAWNHOOD & SLEEPERS	CUM										
PRODUCTION	40	45	51	A 5	12	63	67	60	95	90	90
1 MP - QUANTITY	Ó	ō	ō	Ő	ō	ō	ò	ĩ	ĩ	0	Ő
1MP.VALUE	54	14	20	0	0	0	119	350	535	59	60
EXP-QUANTITY EXP-VALUE	4 241	227	2	3 241	3 250	109	137	0 14	1 70	75	1 90
								• ·			
PANEL S	CUM										
IMP-QUANTITY IMP-VALUE	6 690	6 296	4 271	4 350	4 430	8 1774	10 2077	11 2373	18 4307	12 3531	15 4573
- PLYW000	CUM										
		0	2	0-					1.75		
IMP-VALUE	2 448	30F	130F	130F	130F	4F 1425	1311	6F 1607	13F 3541	2524	3566
PAPER & PAPERBOARD	MT										
IMP.QUANTITY IMP.VALUE	1	1									

BURNA	QUANTITY	QUANTITE	CANTIDAD	D 1000			VALUE	VALEUR	VALOR 10	00	
*****	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N BURMA									
FUELWOOD AND CHARCOAL	12450	1 29 32	13329	13656	13991	14337	14692	15057	15431	15815	16206
IND. ROUNDWOOD	2439	2233	1990	2058	2073	2157	2476	2886	2912	2917	2925
PANELS	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	12	12	12	12	12	12	12	15	15	15
PAPER AND PAPERBOARD	26	25	26	28	36	35	35	32	37	36	36
POPULATION	29389	30103	30834	31587	32357	33149	33968	34818	35701	36614	37553
CONSUMPTION OF MAIN CO	MHODITIES P	ER 1000 CA	PITA .								
FUELWOOD AND CHARCOAL	424	4 30	432	432	432	433	433	432	432	432	432
IND. ROUNDWOOD SAMNHOOD & SLEEPSES	83	74	65	65	64 11	55 11	73	83	82	80 8	78
PANELS	0	0	õ	ŏ	0	0	ő	0	ō	ő	ō
PAPER AND PAPERBOARD	1	1	1	1	1	1	1	1	1	1	1
VALUE ALL FOREST PRODU	CTS (USS)										
INP .VALUE	5130	8275	9190	6595	10607	10400	10760	9760	11460	11080	11060
EXPOVALUE	4 3 4 0 4	48589	33086	51412	53187	57805	91729	111036	111036	124608	126000
ROUNDWOOD	CUM										
PRODUCTION	15061	15251	15385	15771	16126	16571	17253	13021	19421	18834	19254
EXP-QUANTITY EXP-VALUE	172 29223	86 22959	66 18515	57 29965	62 28257	77 34682	85 402 33	77 42128	77 42128	102 55700	123 68000
					-						
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	12450	1 2 9 3 2	13329	13655	13991	14337	14692	15057	15431	15815	16206
- IND. ROUNDWOOD	CUM										
PRODUCTION	2611	2319	2056	2115	2135	22 34	2561	2964	2990	3019	3048
XP.VALUE	29223	22959	18515	29965	28257	34682	40233	42128	42128	55700	68000
SAMERICS & VENEER	C 1194										
PRODUCTION EXP-QUANTITY	1718	1404	1119	1155	1152	1227	1531 85	1909	1909	1909	1909
XP.VALUE	29223	22959	18515	29965	28257	34682	40233	42128	42128	55790	68000
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	606	466	407	335	415	415	415	415	415	415	415
EXP-QUANTITY EXP-VALUE	105 14310	97 25518	104 14310	14 21507	63 24930	56 23123	98 51496	118 68908	118 68908	118 68908	100
					2.754		2		40790	22,90	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
ANELS	CUM										
PRODUCTION	12	12	12	12	12	12	12	12	15	15	15
EXP-QUANTITY EXP-VALUE	5 1871	112	261	0	0	0	0	0 0	0	0	0 0
- PLYN000	CUM										
	1.56	176	100	126	136	150	1.76	135	105	150	
EXP-QUANTITY	121-	0*	0*	126	126	121	126	12F 0	151	156	156
EXP .VALUE	1871	112	261	0	0	0	0	0	0	0	0
PULP FOR PAPER	NT										
PRODUCTION	13	13	13	13	13	13	13	13	13	13	13
PAPER & PAPERBGARD	NT										
	7	10	10	10	10	10	10	10	10	10	10
INP.QUANTITY	za	15	16	18	26	25	25	22	27	26	26
IMP .VALUE	5130	8275	9190	6595	10607	10400	10760	9760	11460	11080	11080

CHINA	QUANTITY	QUANTITI	CANTID	AD 1000			VALUE	VALEUR	VALOR 10	00	
******	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MNODITIES I	N CHINA									
FUELNOOD AND CHARCOAL	134422	137359	140248	143030	145793	148662	151627	154554	154633	154635	154635
IND. ROUNDWOOD SAMANDOD & SLEEPERS	50335	54947 16644	58392	61646	65824 18277	69542	72053	74553	76425	80998	86998
PANELS	579	569	473	526	524	745	1054	1423	1451	1602	1555
PAPER AND PAPERBOARD	4211	4108	4458	4593	5024	5920	6507	7989	7129	7055	7325
POPULATION	889872	911180	932997	949593	964342	977695	990342	1002863	1015234	1027537	1039677
CONSUMPTION OF MAIN CO	MHODITIES P	ER 1000 C/	PITA								
FUELWOOD AND CHARCOAL	151	151	150	151	151	152	153	154	152	150	149
IND. ROUNOWOOD	57	60	63	65	68	71	73	74	75	79	84
PANELS	18	10	1	18	. 1	20	1	1	* 1	23	24
PAPER AND PAPERBOARD	5	5	5	5	5	6	7	7	7	7	7
VALUE ALL FOREST PRODU	ICTS (US\$)										
INP.VALUE EXP.VALUE	276743 302380	359083 241178	263803 242636	405377 318333	626802 353905	865645 471126	982507 577841	1417065 545962	1376064 571040	1317957 482068	1564553 519072
ROUNDWOOD	CUM										
PRODUCTION	180357	187955	194156	199514	204840	210605	216548	222156	226.106	227687	221460
IHP-QUANTITY	4465	4394	4565	5231	6806	7669	7199	7105	6795	8086	10037
IMP .VALUE EXP .QUANTITY	201724	250231	177698	269799	434403	586877	674517	718111	641220	736217	813026
EXP.VALUE	23800	15441	30230	33002	33002	33002	38386	29505	42 15306	13320	53 17769
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	1 34422	137359	140248	143030	145793	148662	151627	154654	154633	154636	154636
- IND. ROUNDHOOD	CUM										
PRODUCTION	45935	50596	53908	56484	59087	61943	64921	67502	69672	72951	77014
IMP-QUANTITY TMP-VALUE	4465	4394	4565	5231	6806	7669	7199	7105	6795	8086	10037
EXPAQUANTITY	65	43	81	69	69	69	68	55	42	39	53
EXP .VAL UE	23800	15441	30230	3 3 0 0 2	33002	33002	38386	29505	16806	1 3 3 2 0	17769
SAWLOGS & VENEER	CUM										
PRODUCTION	24600	27386	28577	29930	31252	32763	34331	35898	36949	38695	40784
IMPAVALUE	201724	250231	4485	261327	425931	578405	671817	7055	630025	7847	9681 801553
EXP-QUANTITY	65	43	81	69	69	69	68	55	42	39	53
EXP.VALUE	23800	15441	30230	33002	33002	33002	38386	29505	16806	13320	17769
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	16104	16555	16652	17485	18361	19252	20185	21165	22194	23275	24410
IMP .VALUE	1275	5023	4535	28 6364	36 8183	54 12628	94 22295	139 33850	206 48122	299 61743	433 99320
EXP.QUANTITY	203	136	179	167	121	153	93	73	62	89	91
EXF+VALUE	28854	20865	43679	49613	38317	55703	47171	27521	25479	37580	37735
PANELS	CUM										
PRODUCTION	1537	1254	1242	1 3 8 6	1461	1966	2115	2258	2340	2340	2340
IMP .VALUE	1 798	1 548	1 860	11 3600	12 4912	23	35 18980	50 22054	68 2681 9	96 31031	99 37842
EXP.QUANTITY	959	686	770	871	948	1244	1095	884	957	834	893
EXP .VALUE	225248	171933	132672	191144	238012	328595	428951	385031	401967	336175	367937
- PLYW000	CUM										
PRODUCTION	1317	1039	1005	1133	1155	1535	1575	1613	1634	1634	1634
CHP .VALUE	48	30	0 30	2700	9 2700	3370	2 61.6	1775	13 4167	21 5280	39 10850
XP-QUANTITY	953	685	768	869	946	1240	1091	868	951	822	867
TAP . VALUE	223936	171513	131887	190111	236663	326396	426367	374462	399015	329482	360465
PULP FOR PAPER	MT										
PRODUCTION EMP.QUANTITY	2925	2921	3213	3239	3586	4181	4581	4809	4309	4809	4971
MP .VALUE	37336	51233	38604	63331	55854	£08 67246	210 75977	427 152639	525 179179	435 149401	633 229689
EXP-QUANTITY EXP-VALUE	26 4469	25 8757	33 10217	33 9304	33 9304	44	46 17952	49 24496	86 39144	61 30924	64 22974
	HT					. = -					~
		/									
ROOVETICA	4174	4040	4440	4523	4878	5655	5203	6623	5533	5738	5888
MP-QUANTITY	153	175	150	1.42	200	3 85	344	624	0.14	442	755
IMP+QUANTITY IMP+VALUE IXP+QUANTITY	153 33347 116	49929	38315	58236	120306	170206	180516	624 477095	465289	314778	256174

FIJI	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 100	0	
*****	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1783
CONSUMPTION OF MAIN CO	MHODITIES I	N F1J1									
FUELWOOD AND CHARCOAL IND+ ROUNDWOOU SAWNWOOD & SLEEPERS PANELS PAPER AND PAPERBOARD	7 142 97 5 4	7 162 106 4 5	9 151 82 4 6	11 157 82 4 4	11 157 82 4 4	11 157 72 5 4	10 194 89 6 8	14 232 91 6 9	14 208 90 0 9	14 208 90 0 8	14 208 90 0 8
POPULATION	553	564	576	587	598	608	619	630	641	652	663
CONSUMPTION OF MAIN CO	MMODITIES PE	R 1000 CAP	1174								
FUELWOOD AND CHARCOAL ; IND. ROUNDWOOD SAWNWOOD & SLEEPERS PANELS PAPER AND PAPERBOARD	9 13 257 175 9 8	12 267 197 7 8	16 262 143 8 10	19 268 140 7 7	18 263 136 7 7	18 258 119 9 7	16 313 144 10 12	22 363 144 9 14	22 324 140 0 13	21 319 138 0 13	21 314 135 0 13
VALUE ALL FOREST PRODU	CTS (US\$1										
1HP.VALUE EXP.VALUE	4900 620	5799 691	5175 1568	3692 2184	3966 2265	2729 2385	7054 2992	8824 5968	11219 4300	11159 4300	11159 4300
ROUNDWOOD	CUM										
PRODUCTION IMP JUANTITY IMP JVALUE EXP JUANTITY EXP JVALUE	148 1 78 0 0	168 1 72 0 0	160 0 24 0 0	168 0 19 0 0	163 0 19 0 0	168 0 19 0 0	204 0 0 0 0	250 0 4 1534	224 0 0 2 918	224 0 0 2 918	224 0 0 2 918
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	7	7	9	11	11	11	10	14	14	14	14
- IND. ROUNDWOOD	CUM										
PRODUCTION IMP+QUANTITY IMP+VALUE EXP+QUANTITY EXP+VALUE	141 1 78 0 0	161 1 72 0 0	151 0 24 0 0	157 0 19 0 0	157 0 19 0 0	157 0 19 0 0	194 0 0 0	236 0 4 1534	210 0 2 918	210 0 2 918	210 0 2 918
SANLOGS & VENEER	CUN										
PRODUCTION EXP+QUANTITY EXP+VALUE	137 0 0	159 0 0	149 0 0	155 0 0	155 0 0	155 0 0	192 0 0	234 4 1534	208 2 918	208 2 918	208 2 918
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION IMP.QUANTITY IMP.VALUE EXP.QUANTITY EXP.VALUE	82 17 2080 3 326	95 14 2041 3 397	72 15 2183 5 803	81 5 1370 8 1456	81 9 1370 9 1537	81 0 14 9 1657	96 0 169 7 1953	103 0 52 13 3454	93 1 107 4 1127	93 1 107 4 1127	93 1 107 4 1127
PANELS	CUM										
PRODUCTION INP-QUANTITY IMP-VALUE EXP-QUANTITY EXP-VALUE	3 3 1281 1 294	3 3 1380 1 294	9 3 1043 8 765	8 3 1084 7 728	9 3 1084 7 728	10 3 1084 7 728	11 3 1279 8 1039	10 2 1331 7 980	11 2 1294 13 2255	11 2 1294 13 2255	11 2 1294 13 2255
- PLYH000	CUM										
PRODUCTION IMP.QUANTITY IMP.VALUE EXP.QUANTITY EXP.VALUE	0 2F 829F 0 25F	0 1F 704F 0 25F	1 0 185 0 40	1 0 124 0 22	2 0F 124F 0F 22F	3 OF 124F OF 22F	3 OF 245 0 0	3 0 137 0 9	4 0 98 0 316	4F 0T 98T 0T 316T	4F OF 98F OF 316F
PAPER & PAPERBOARD	MT										
1MP.QUANTITY 1MP.VALUE	4 1461	5 2 306	6 1925	4 1219	4 1493	4 1612	8 5606	9 7441	9 9818	9758	8 9758

FR POLYNESIA	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR V	ALOR 100	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1931	1982	1983
***************************************	**********		*********	*******	*******	*******	*********			*********	*********
CONSUMPTION OF MAIN CO	MHODITIES I	N FR POLYN	ESIA								
IND. ROUNDWOOD	0	. 0	0	1	1	1	1	1	1	1	1
SAWNWOOD & SLEEPERS	28	23	19	14	17	20	31	24	zo	32	37
PANELS	6	6	6	6	7	7	10	7	7	9	9
PAPER AND PAPERBOARD	1	1	2	Z	2	2	2	2	2	2	2
OPULATION	123	128	132	136	139	141	144	147	150	153	157
ONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CA	PITA				8				
IND. ROUNDWOOD	0	0	o	4	9	9	9	9	9	8	6
SAWNWOOD & SLEEPERS	225	180	144	105	124	144	215	163	133	209	233
ANELS	46	44	42	46	48	48	70	46	45	57	55
APER AND PAPERBOARD	7	9	11	13	14	13	13	13	13	14	14
	BTT JUSES										
ALUE ALL PUREST PRODU	CI3 (03*)										
MP.VALUE	5205	4957	4907	7397	9757	10507	14496	11886	11251	16902	18132
COUNDWOOD	CUM										
	0	0	0	,	,	,	,	,	,	,	,
HP .VALUE	ŏ	ŏ	ŏ	127	298	Z 98	300	460	520	529	529
IND. ROUNDWOOD	CUM										
MP.QUANTITY	O	0	0	1	1	1	1	1	1	1	1
HP.VALUE	0	0	0	127	298	. Z 98	300	460	520	529	529
AWNWOOD & SLEEPERS	CUM										
	20			• -							
HP .VAL HE	28	25	2200	2531	1/	4100	51	24	20	32	37
nr et he Ut	5172	2030	2200	6731	0770	4500	0000	2200	4800	8610	9900
ANEL S	CUM										
MP_OHANT ITY	۲	6	6	6	,	,	10	,	,	0	a
MP . VALUE	1628	16 28	1628	2438	3155	31 5 5	4842	3172	3177	4926	4926
	C11#										
MP.QUANTITY	4	4F	4F	4	5	5F	8*	5F	5F	7	7F
HP .VALUE	12/56	12758	1275F	1938	2513	2513F	4200F	2530F	2535	4195	4195F
APER & PAPERBUARD	AT										
HP-QUANT (TY	,	,	,	,	,	,	,	,	,	,	,
MP .VALUE	405	679	1079	2303	2754	2754	2754	2754	2754	2777	2772
	-07	017	10/7	2301	2134	21.24	2137	2134	6134	2111	2111

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HONG KONG	QUANTITY	QUANTITE	CANTIDA	0 1000			VALUE	VALEUR	VALOR 100	0	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
*******************************		*********	********	********	********			*******	*********	********	
CONSUMPTION OF MAIN COM	MODITIES IN	HONG KON	G								
FUELWOOD AND CHARCOAL	252	244	201	239	254	261	274	289	282	305 561	328
SAWNWOOD & SLEEPERS	189	212	176	241	333	345	386	412	381	395	333
PANELS	90	11	83	109	120	147	200	282	286	194	192
PAPER AND PAPERODARD	4 204	4301	6 7 9 6	423	46.66	4111	4910	50.39	5161	5211	5189
CONCUMPTION OF MAIN CON	8031 1001	4500 CA	4375 D174	4710	4044			,,,,,	,		
CORSONPTION OF MAIN COP	HODITIES PC	.R 1000 CA	FI I R								
FUELWOOD AND CHARCOAL	60 76	57	46	53 88	55	55	56	57 99	55 111	58 106	18 601
SAWNWOOD & SLEEPERS	45	49	40	53	12	12	19	35	74	75	62
PANELS PAPER AND PAPERBOARD	21 88	19 69	19 67	24 95	26 94	31 117	41 117	56	55 112	37	36 118
VALUE ALL FOREST PRODUC	TS (USS)								c / 1 1 1 1		
IMP.VALUE EXP.VALUE	158923 21443	202851 21190	159182	232318	6475	6753	461925 7408	63749	41710	42 852	40595
ROUNDWOOD	CUM										
PRODUCT ION	1,40	146	147	153	154	160	160	161	161	174	180
IMP.QUANTITY IMP.VALUE	490 17994	508 22344	397 14534	516 25736	607 30225	672 39935	696 66327	709 63206	707 56104	710 46526	734 50027
EXP.QUANTITY	56	45	40	33	37	39	38	84	12	18	14
EXP+VALUE	4 3 6 3	3112	2196	1314	1493	1804	1001	17911	497	1044	504
- FUELWOOD & CHARCOAL	CUN										
PRODUCTION	140	146	147	153	154	160	160	161	161	174	180
IMP.VALUE	1157	1449	874	1462	1781	2626	3565	4192	3214	4113	5026
EXP-QUANTITY	14	19	22	13	13	13	13	9 254	9 254	11 318	11
	C11N	101							,2		
									6.37	<i></i>	c 1.
IMP.QUANTITY IMP.VALUE	16837	20895	13660	24274	28444	37309	62762	59014	52890	42413	45001
EXP-QUANTITY EXP-VALUE	42 4200	27	17	20	24 1213	26 1329	25 1321	75 17257	3 203	731	3 219
	12.00	,,,,,,									
SAWLOGS & VENEER	CUM										
IMP.QUANTITY	363	391	321	418	493	558	569	572	576	567	572
1MP+VALUE ExP+QUANT1TY	16837	20895	13660	24274 20	28444	37309	62125	58888	52788	42310	44469
EXP.VALUE	4200	3308	2380	1034	1213	1213	1213	17054	٥	0	0
	C11#										
JARMOOD & JECCICAS										36.3	24.2
PRODUCTION IMP.QUANTITY	130	152	122	166 88	228	262	136	262	262	181	131
1HP.VALUE	6387	11112	8777	11711	14112	16585	30750	28313	21136	31078	20352
EXP+VALUE	3579	5112	3873	3310	3310	3310	3310	10273	10221	11374	15289
A. NEL 1	C 1 (94										
FANEL 3											
PRODUCTION 1MP+QUANTITY	12	12	12	12	12	12	12	273	278	184	182
1HP-VALUE	21608	21174	20032	3463	43746	50807	84208	113555	121197	93203	85585
EXP-VALUE	490	410	474	857	330	×82	161	1212	1801	1432	753
- PLYN000	CUM										
PRODUCTION	12F	12F	12F	12F	12F	12F	12F	126	12F	12F	12F
1MP.QUANTITY	74	60	68	92	98	123	169	237	249	167	169
EXP-QUANTITY	20457	1	19192	2	42205	40521	1	103400 1F	2	2F	1
EXP+VALUE	490	324	211	461	9	61	446	446F	1400F	1400F	405
PULP FOR PAPER	мт										
INP QUANTITY	0	0	0	0	1	2	1	1	0.00	1	2 938
ANT STALUE	5	5	v	170	371	071	200,	,,,,		,,,	
PAPER & PAPERBOARD	MT										
PRODUCTION IMP_QUANTITY	0 399	0	8 305	8 444	11 429	14 549	17	17	17 591	17 609	32 629
1MP.VALUE	112934	148231	115839	160571	168630	234742	280254	359130	35 85 7 7	346 30 2	299264
EXP-QUANTITY EXP-VALUE	30 13011	17	17 9910	24	1342	4 1452	1730	45 34753	29231	28 28997	23969

INDIA	QUANTITY	QUANTITE	CANTID	AD 1000			VALUE	VALEUR	VALOR 10	00	
******	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N INDIA									
FUELWOOD AND CHARCOAL IND. ROUNDWUOD	173197	177172	181231	185069	188915	192759	196678	200500	204554	208474	212647
SAWNWOOD & SLEEPERS	5629 138	6209 149	6798	7491	8197 186	8997 207	10024	10991	10991	10991	10991
PAPER AND PAPERBOARD	962	1045	1026	1074	1174	1254	1312	1390	1588	1496	1489
POPULATION	590886	604695	618826	632672	646592	660598	674716	688956	703315	717762	732256
CONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CA	PITA								
FUELWOOD AND CHARCOAL IND. ROUNDWDDD	293 25	293 26	293 27	293 27	292 27	292 28	291 28	291 29	291 28	290 28	290 27
SAWNWOOD & SLEEPERS PANELS	10	10 0	11 0	12	13	14 0	15	16	16 0	15	15
PAPER AND PAPERBOARD	2	2	2	2	2	z	2	2	2	Z	2
VALUE ALL FOREST PRODU	CTS (USB)										
IMP • VALUE EXP • VALUE	49715 33786	82752 24760	84042 22686	74652 31622	116482 28971	146152 28971	187682 26558	204482 26558	276083 26558	181683 26558	178359 26558
ROUNDWOOD	CUM										
PRODUCTION THP-OLIANTITY	188095	192968	197709	202331	206718	211175	215718	220360	224368	228316	232537
IMP VALUE	997	1157	752	586	982	982 49	2355	2355	2355	2355	2355
EXP.VALUE	22051	10741	14829	17658	14161	14161	14526	14526	14526	14526	14526
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	173191	177168	181230	185107	188949	192793	196658	200580	204534	208454	212627
IMP SQUANTITY	96	53	25	78	54	54	250	250	250	250	26 250
EXP .VALUE	8	43	28	683	1130	11 30	114	6 114	114	6 114	6 114
- IND+ ROUNDWOOD	CUM										
PRODUCTION IMP-QUANTITY	14904	15800	16479	17224	17769	18382	19060	19780	19834	19862	19910
IMP .VALUE EXP .QUANTITY	901 43	1104	727	508	928	928	2105	2105	2105	2105	2105
EXP-VALUE	22043	10698	14801	16775	13031	13031	14412	14412	14412	14412	14412
SAWLOGS & VENEER	CUM										
PRODUCTION IMP+QUANTITY	10531	11032	11556	12104	12679	13281	13892	14551	14551	14551	14551
IMP.VALUE EXP.QUANTITY	901 43	1104	727	508 39	928	928	2105	2105	2105	2105	2105
EXP.VALUE	22043	10698	14801	16775	13031	13031	14412	14412	14412	14412	14412
SAWNWOOD & SLEEPERS	CUN										
PRODUCTION IMP-QUANTITY	5630 2	6212	6804 2	7507	8199	8999	10009	10976	10976	10976	10976
IMP.VALUE EXP.QUANTITY	324 3	163	338 8	340 18	534	534	2440	2440	2440	2440	2440
EXP .VAL UE	216	530	850	2055	1918	1918	640	640	640	640	640
PANELS	CUM										
PRODUCTION THP-QUARTITY	171	186	172	187	206	228	237	237	237	237	237
IMP.VALUE EXP.QUANTITY	35	70	33	53	146	146	87	87	87	87	87
EXP.VALUE	700 8	10900	5529	10400	9296	9296	7464	7464	7464	7464	7464
~ PLYW000	CUM										
PRODUCTION	126	143	127	141	149	176	180	180F	180F	180F	180F
IMP+VALUE EXP-QUANTITY	35	16	0	0	116	116F	57	57F	576	571	57F
EXP.VALUE	5091	7860	4495F	9039	5930	5930F	3084	3084F	3084F	3084T	3084F
PULP FOR PAPER	MT										
PRODUCTION THP: OUANTITY	785	860	904	959	970	1100	1100	1100	1100	1100	1100
IMP.VALUE	6024	6502	6428	1974	14 6359	14 6359	36 15366	36 15366	36 15366	36 15366	36 15366
EXP-VALUE	15	0	0	1 134	0 0	0	0	0 0	0	0 0	0 0
PAPER & PAPERBOARD	AT										
PRODUCTION THP-DUANTITY	840	893	911	937	992	1003	1046	1099	1208	1290	1290
IMP-VALUE	37199	70105	63385	67020	186 89360	254 119030	270 131799	295 148599	384 220200	210 125800	203 122476
EXP-VALUE	4511	2589	1478	1509	3596	3 3 5 9 6	4 3928	4 3928	4 3928	4 3928	4 3978

INDONESIA	QUANTITY	QUANTITE	CANTID	AD 1000			VALUE	VAL EUR	VALOR 10	040	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES 1	N INDONESI									
FUELWOOD AND CHARCOAL	95 30 2	97227	99324	101182	103015	104838	106623	108425	110274	112127	113991
IND. ROUNDWOOD SAWNWOOD & SLEEPERS	9774	8354	3645 2022	5884 2367	4968 2917	8857	8292	7856	6807 4586	5574	4627 4911
PANELS PAPER AND PAPERBOARD	24	48 217	146	219	273	365 377	509 410	772	966 484	1256	1385
POPULATION	129289	132439	135666	138790	141893	144972	147996	150958	153548	156668	159434
CONSUMPTION OF MAIN CO	DNMODITIES P	ER 1000 CA	PITA								
	717	71/	710	770	774	7 1 2	770	719	717	716	715
IND. ROUNDWOOD	76	63	27	42	35	61	56	52	57	11	29
SAWNWOOD & SLEEPERS PANELS	8 0	12	15	17	21	19	14	18	30 6	36 B	31
PAPER AND PAPERBOARD	2	Z	z	2	2	3	3	3	3	4	4
VALUE ALL FOREST PRODU	UCTS (US\$)										
IMP.VALUE	47256	62200	69813	105988	115458	147990	139152	145846	170034	208810	209491
EXP.VALUE	578697	727823	473237	892990	979253	1041957	1847980	1879002	966198	809263	976007
ROUNDWOOD	CUM										
PRODUCTION	123813	122788	117890	127417	128394	134645	134689	132852	126270	127908	122248
IMP+VALUE	U D	0	8174	0	0	0	0	0	0	0	0
EXP.QUANTITY EXP.VALUE	18737 562514	17207 705822	15028 441717	20351 843112	20411 926888	20950 937867	19774 1580929	16571 1562941	7188 627441	3734 338988	3631 323015
- FUELMOOD & CHAREDAL	С ЦМ										
PERCENTION	05516	07537	99605	101478	103200	105094	106880	109493	1105.05	112338	114209
EXP QUANTITY	214	310	281	296	284	256	257	258	231	211	218
		2101	1107	1000	••••						
- INO. ROUNDWOOD	CUM										
PRODUCTION	28297	25251	18285	2 5 9 3 9	25095	29551	27809	24169	15766	15571	8040
IMP.VALUE	0	0	8174	0	0	0	0	0	0	0	0
EXP+QUANTITY EXP+VALUE	18523 562013	16897 703658	14746 439948	20055 841452	20127 925409	20694 936406	19517 1579468	16314 1559303	6957 623548	352 4 336521	3413 320895
	¢ (194										
JANLUGJ & VENECK	CUM										
PRODUCTION 1MP-QUANTITY	26297 0	23210	16200	23800 0	22900 0	27300	25500 0	21700	13254	13015	5377
IMP.VALUE	0	0	8174	0	0	0	0 18161	0	0	0 3220	0
EXP.VALUE	561323	702935	409552	811115	899004	909312	1550326	1514829	619171	332611	316985
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION	1411	1829	2415	3022	3510	3501	3408	3993	5768	6816	6314
IMP QUANTITY	0	1	2	1	2	0	0	0	0	0	0
EXP-QUANTITY	330	278	395	656	594	757	1284	41	1182	1242	1403
EAP•VALUE	16183	22001	51456	49011	50228	85760	235331	250325	190862	158005	217714
PANELS	CUM										
PRODUCTION	10	25	801 91	215	280	425	625	1015	1724	2488	3139
IMP.VALUE	2205	6419	7069	4166	2538	3249	542	750	750	319	750
EXP+QUANTITY EXP+VALUE	0 0	0	1 64	13 867	2137	70 18330	117 31720	245 55736	760 147395	1232 282270	1756 435278
- PLYWOOD	CUM										
PRODUCTION	9\$	24\$	107*	214\$	279*	424*	624	1014	1723	2487	3138
IMP QUANTITY	14	14	7	5	4	2071	1	2*	2F	1	2F 7505
EXP.QUANTITY	2205	0	1	13	17	70	117	245	760	1232	1756
CAM®VALUE	0	a	64	867	2137	18330	31720	>>136	147895	202210	435278
PULP FOR PAPER	MT										
PRODUCTION IMP.QUANTITY	37	43 7	46 9	46 19	46 41	46 82	46 581	46 87	46 140	46 171	46 171
IMP.VALUE	798	2790	3074	6128	13197	24188	20699	40064	63989	73894	73894
PAPER & PAPERBOARD	NT										
PRODUCTION	43	43	46	56	78	154	212	231	258	329	374
1MP.QUANTITY 1MP.VALUE	201 44253	174 53007	220 50841	228 95430	213 99898	223 114398	198 106017	212 97896	226 103396	267 141478	277 141687

JAPAN	QUANTITY	QUANTIT	E CANTIG	AD 1000			VALUE	VALEUR	VALUR 10	000	
	1973	1974	1975	1976	1977	1978	1979	1980	1931	1982	1983
	********	********				********			********	*********	*********
CONSUMPTION OF MAIN CO	MMODITIES 1	IN JAPAN									
FUELWOOD AND CHARCOAL 1ND, ROUNDWOOD	1644 99555	1449 93525	1275 78509	1023 86953	862 89987	660 86388	661 93559	682 97941	705 74184	790 75178	785 73671
SAWNHOOD & SLEEPERS PANELS	48280	44151 9561	39369 7764	42587 8843	41720	42779 9731	44687 10760	42471 10448	36443	37512 8938	34298
PAPER AND PAPERBOARD	15770	15410	13057	14969	15337	16307	17565	17981	16811	17344	18372
POPULATION	108700	110160	111524	112770	113863	114898	115870	116782	117648	118440	119260
CONSUMPTION OF MAIN CO	MHOOITIES P	ER 1000 0	AP 1TA								
FUELWOOD AND CHARCOAL	15	13	11	9	8	6	6	5	6	7	7
SAWNWOOD & SLEEPERS	916 444	849 401	353	378	366	769	807 366	753	631 310	635 317	618 286
PANELS Paper and paperboard	107	87 140	70 117	78 133	80 135	85 142	93 152	89 154	77 143	75 146	75 154
VALUE ALL FOREST PRODU	CTS (USS)										
INP .VALUE	4071063	4877844	3536738	4528338	4934978	5493822	9091788	9613496	6291624	6653136	6063714
EXP.VALUE	311536	654310	558934	504671	563428	629059	775019	878732	861769	811078	733733
ROUNDWOOD	CUM										
PRODUCTION 1MP-QUANTITY	42965 58245	40151 54840	35309 44494	36198 51797	34565 56309	32747	33854	34622	31976	32819	32813
IMP+VALUE Exp-QUANTITY	3159610	3545814	2673189	3542031	3859035	4113936	6915773	674 92 26	42055 54	4363056	3834436
EXP.VALUE	1718	2150	3801	31.82	4546	7770	6605	4720	6457	6088	45 9413
- FUELWOOD & CHARCOAL	CUM										
PRODUCT 10N	1381	1277	1155	927	772	602	584	571	615	586	580
INP .VALUE	3748	4474	3361	2534	2311	58 1649	2093	111 3719	90 3254	204 6009	6010
EXP +VALUE	0	2 69	0 45	0	0	0 0	0	0 0	0 0	0 0	0 0
- IND+ ROUNDWOOD	CUM										•
PRODUCTION	41584	38874	34154	35271	33793	32145	33270	34051	31361	322 33	32233
IMP .VALUE	3155862	3541340	2669828	3539497	3856724	4112297	6913680	53911 6745507	42855	42975 4357047	41483 3828426
EXP-VALUE	1718	15 2081	19 3756	19 3182	25 4546	30 7770	37 6605	21 4720	32 6457	30 6088	45 9413
SAWLOGS & VENEER	CUM										
PRODUCTION INP-QUANTITY	26912	23184	21581	22037	21184	21079	22064	21467	19979	20396	20396
IMP .VALUE	2866340	3120585	2228888	3061514	3310827	3555666	6244535	5694677	3458061	3689272	3005638
EXP .VALUE	1556	1829	1376	2772	3167	5606	5689	3188	4656	4493	6323
SAWNHOOD & SLEEPERS	CUM										
PRODUCTION LMP=QUANTITY	44658 3680	40570	36812	39371	38198	38894	39631	36955	32519	32537	29670
1HP-VALUE	394904	440030	347014	431623	498224	594628	1091271	1248295	771423	937592	841858
EXP.VALUE	16269	18638	15362	18513	31237	43658	39676	37712	25739	40 21647	22755
PANELS	CUM										
PRODUCTION IMP_QUANTITY	10289	8917	7664	8901	9305	9824	10739	10280	9082	8836	8836
IMP.VALUE	181026	107821	38309	36790	23126	32170	50188	74841	37366	214 49347	43162
EXP.VALUE	310 75766	248 70279	231 59310	262 80345	284 102799	240 100759	208 98563	147 77870	170 76250	172 67076	199 76639
- PLYWOGD	CUM										
PRODUCTION INP-DUANTITY	9596	7443	6168	7136	7476	8016	8532	6000	7096	6740	6740F
INP.VALUE	165 381	93369	31554	26975	15196	20155	19597	32900	38 11206	38 11563	44 5883
EXP.VALUE	72022	66759	56121	251 76539	262 96554	197 88907	152 83621	104 66345	107 62427	94 52246	100 5799 7
PULP FOR PAPER	NT										
PRODUCTION	9634	9596	8350	9194	9107	9070	9677	9468	8356	8361	8601
MP.VALUE	190760	396607	305787	305694	301031	438550	1012 604846	1935 914614	1489 727939	1581 751375	1924 754347
EXP .VALUE	49 9871	222 110451	140 47559	136 38873	153 43335	94 27671	107 43552	99 49128	103 43800	66 22832	44 15047
PAPER & PAPERBOARD	MT										
PRODUCTION	1 597 5	15645	13600	15394	15702	16499	17861	16088	16980	17453	18442
IMP .VALUE	304 102455	507 281060	164 93254	227 127150	299 162762	436 219099	459 309160	656 467090	617 430986	746 461789	807 471943
EXP • QUANT ITY EXP • VALUE	509 207462	742 445000	707 427661	652 362966	664 378994	628 448066	755	763 708558	786 708705	855	877
					2. 3777	110000	9000	100390	100103	072000	007010

	KANPUCHEA DH	OUANTITY	QUANTITE	CANTIDAO	1000			VALUE	VALEUR	41.0R 100	0	
CONSUMPTION OF MAIN COMPOSITIES IN ALMPICATA OM UNITATION OF MAIN COMPOSITIES PERIODAD CARAGE AND AFFRIDAND COMPULATION TO ALL COMPOSITIES PERIODAD UNITATION COMPULATION TO ALL COMPOSITIES PERIODAD UNITATION COMPUTED COMPUTED COMPUT	میں میں ایک	1973	1974	1975	1976	1977	1979	1979	1980	1981	1982	1983
CAGGUAPTICA OF ALLA COMPONDITES IN ARCHIVER OF NEW & SAULANDOD NEW & SAU	*****	**********		*********	*******	********	********	*******		1555528225	x 5 X 2 3 5 # 2 7 3	
μημιαμοριμή (classical key) κ.vop κ.vop <th< td=""><td>CONSUMPTION OF MAIN CO</td><td>MHODITIES IN</td><td>KANPUCHE</td><td>DH</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	CONSUMPTION OF MAIN CO	MHODITIES IN	KANPUCHE	DH								
NR. AZUCUDU COLO 6.87 4.87 3.97 7.21 7.47 7.42	FUELWOOD AND CHARCOAL	4574	4595	4616	4568	4500	44 30	4387	4388	444U	4540	4672
Antion 2 <td>IND. ROUNDHOOD</td> <td>487</td> <td>498</td> <td>507</td> <td>521</td> <td>534</td> <td>43</td> <td>43</td> <td>43</td> <td>43</td> <td>43</td> <td>43</td>	IND. ROUNDHOOD	487	498	507	521	534	43	43	43	43	43	43
PAPER AND PAPERDARD 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6, 6,	PANELS	2	Z	2	2	2	2	2	2	2	z	2
POPULATION 7034 7036 7036 6780 <	PAPER AND PAPERBOARD	6	6	6	6	6	6	5	5	6	0	o
$ \begin{array}{c} COMMUNETIES PER 1 000 CAPITAL PROPERTIES PER 1 000 CAPITAL PUBLIC DATA COMMUNETIES PER 1 000 CAPITAL 0.50 0 50 0 50 0 50 0 50 0 0 0 0 0 0 0 $	POPULATION	7034	7066	7098	6966	6780	6585	6443	5400	6473	6546	6898
UPEL LODO AND CHARCOLL 650 650 650 650 650 654 673 671 671 673 <th67< th=""> 673 <th67< th=""></th67<></th67<>	CONSUMPTION OF HAIN CO	MHODITIES PE	ER 1000 CAF	PITA								
IND. REQUIND/000 69 10 72 72 79 83 87 85 97 64 12 SAMMOD 1 1	FUELWOOD AND CHAPCOAL	650	650	650	656	664	673	681	686	696	683	678
Direct in 1 LEEPERS 0	IND. ROUNDWOOD	69	70	12	15	. 19	83	87	88	87	54	6
PAPER AND PARENDARU 1 <th1< th=""> 1 <th1< th=""></th1<></th1<>	SAWNWOOD & SLEEPERS	0	0	õ	o	0	o	0	ว	ò	õ	ō
VALUE ALL FOREST PRODUCTS (USH) IMP.VALUE EXP.VALUE 1885 173 1895 173 173	PAPER AND PAPERBOARD	1	i	1	1	1	1	L	1	i.	1	1
NALLE LOCKET HOUSE (1997) NALLE LOCKET HOUSE (1997) LAP VALUE 1885 1895 10		CTS (11583										
IMP. VALUE 1033 1043 1043	TALUE ALL POREST PRODU	1000	10.25	1005	1005	1096	1995	1484	1885	र न स 5	1845	1885
KOUMONOOD CUM PRODUCTION EXP.OUALTITY 5067 6 6 6 6 7 6 7 6 7 7 7 7 7 7 7 7 7 7	INP.VALUE Exp.VALUE	1885	1835	1885	1885	173	173	173	173	173	173	173
ROUNDOOD CUN PRODUCTION EXP-JUALITY Soft of or												
PRODUCTION EXP-QUALITY SOBT <	ROUNDWODD	CUN										
EXP.QUANTITY 6 <t< td=""><td>PRODUCTION</td><td>5067</td><td>5099</td><td>5131</td><td>5095</td><td>5040</td><td>4983</td><td>4954</td><td>4955</td><td>5007</td><td>5107</td><td>5239</td></t<>	PRODUCTION	5067	5099	5131	5095	5040	4983	4954	4955	5007	5107	5239
EXP.VALUE 34 94 <td>EXP-QUANTITY</td> <td>6</td>	EXP-QUANTITY	6	6	6	6	6	6	6	6	6	6	6
- FUELWOOD 1 CHARCOAL CUM PRODUCTION 4574 4595 4616 4568 4500 4430 4387 4388 4440 4540 4672 - IND. ROUNDWOOD CUM PRODUCTION 493 504 515 527 540 553 567 567 567 567 567 567 66 6 6 6 6 6 6	EXP.VALUE	94	94	94	94	94	94	94	94	94	94	74
PRODUCTION 4574 4595 4616 4508 4500 4430 4387 4388 4440 4574 4672 - IND. ROUNDHOOD CUH -<	- FUELWOOD & CHARCOAL	CUM										
- IND. ROUNDHOOD CUM PRODUCTION EXP.QUARTITY 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	PRODUCTION	4574	4595	4616	4568	4500	4430	4387	4388	4440	4540	4672
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		1211										
PRODUCTION 493 504 515 527 540 553 567 <	- IND. ROUNDWOOD	CUH										
EXP.OUANTITY 6 <t< td=""><td>PRODUCTION</td><td>493</td><td>504</td><td>515</td><td>527</td><td>540</td><td>553</td><td>567</td><td>567</td><td>567</td><td>567</td><td>567</td></t<>	PRODUCTION	493	504	515	527	540	553	567	567	567	567	567
EXP_VALUE 94	EXP+QUANT1TY	6	6	6	6	6	6	6	6	6	6	6
	EXP-VALUE	94	94	94	94	94	94	94	94	94	94	74
PRODUCTION EXP-QUANTITY 110	SAWLOGS & VENEER	CUN										
EXP.QUANTITY 10 <th10< th=""> 10 10</th10<>	PRODUCTION	110	110	110	110	110	110	110	110	110	110	110
EXP-VALUE 94	EXP-QUANTITY	.10	- 6	6	6	6	6	6	6	6	6	6
SAMMWOOD & SLEEPERS CUM PRODUCTION 43	EXP+VALUE	94	94	94	94	94	94	94	94	94	94	94
PRODUCTION 43	SAWNWOOD & SLEEPERS	CUN										
PANELS CUM PRODUCTION 2 <th2< th=""> 2 2</th2<>			43	43	47	<u>4</u> 2	63	43	43	43	43	43
PARELS CUM PRODUCTION EXP-QUANTITY EXP-QUANTITY EXP-VALUE 2 PRODUCTION CUM	PRODUCTION	43	43	43	43	4 3	43	43	43	4.5		
PRODUCTION 2 Z	PANEL S	CUM										
EXP-QUANTITY 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PRODUCTION	2	Z	2	2	2	2	2	2	z	2	2
- PLYWOOD CUN PRODUCTION 2F	EXP-QUANTITY	1	1	1	1	1 79	1	1	1 70	1 70	1 79	1
- PLYNOOD CUM PRODUCTION 2F	EXPOVALUE	19	14	14	19	19	17	. 4	.,	.,		
PRODUCTION 2F	- PLYW000	CUN										
EXP-QUANTITY IF	PRODUCTION	2 F	2F	2 F	2F	2F	2F	2F	2F	2F	2F	2F
EXP-VALUE (YE /YE /YE /YE /YE /YE /YE /YE /YE /YE /	EXP.QUANT 1TY	1F	1F	1 F	1F	1F	1F	1F	1F	1F 705	11	1F Taf
PAPER & PAPERBOARD NT IMP-QUANTITY 6 6 6 6 6 6 6 6 6 6 6 IMP-VALUE 1805 1885 1885 1885 1885 1885 1885 1885	EXP.VALUE	79F	79F	79F	79F	79F	79F	7.9F	79F	79F	791	1.45
IMP•QUANTITY 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	PAPER & PAPERBOARD	NT										
INP-VALUE 1805 1885 1885 1885 1885 1885 1885 1885	IMP.QUANTITY	6	6	6	6	6	6	6	6	6	6	6
	INP.VALUE	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885

KOREA REP	QUANTITY	QUANTITE	CANT 10A	0 1000			VALUE	VALEUR	VALOR 10	00	
و الله الله الله الله الله الله الله الل	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
************************	**********	********	*******	********	********			*******	*********		********
CONSUMPTION OF HAIN CON	MOOITIES 1	N KOREA RE	Р								
FUELWOOD AND CHARCOAL	5913	6030	6156	6268	6377	6490	6599	6709	6821	6936	6983
IND. ROUNDWOOD SAMMHOOD & SLEEPERS	7135	7189	8240	8719 2090	2783	12681 3051	11728 2619	10102	8858 2737	2846	9724 3395
PANELS	201	201	188	92	632	994	1053	668	588	827	1201
PAPER AND PAPERBOARD	513	612	644	656	1093	1331	1572	1557	1640	1660	1935
POPULATION	33897	34582	35281	35887	36468	37028	37578	38124	38669	39212	39757
CONSUMPTION OF MAIN CON	MMODITIES P	ER 1000 CA	PITA								
FUELWOOD AND CHARCOAL	174	174 208	174	175	175	175	176	176 265	176	177	176
SAWNWOOD & SLEEPERS	40	50	63	58	76	82	70	70	71	73	85
PANELS PAPER AND PAPERBOARD	6 15	6 18	5 18	3 18	30	27	28 42	18 41	42	42	30 49
	TS (11565										
IND VALUE	389745	445020	367138	534428	659703	799710	1220963	1103147	911546	84 3 7 5 9	826387
EXP-VALUE	335363	266429	296566	416705	532709	513312	596811	533732	550541	299264	138658
ROUNDWOOD	CUM										
PRODUCTION	7619	8328	9216	8664	10146	9762	9243	10670	10121	10170	10189
1HP-QUANTITY	5429	4891	5180	6323	7807	9409	9084	6141	5558	5671	6518
1 MP . VALUE	308101	313199	269817	415298	524195	642737	1008531	536237	0 3 4 6 3 5	611327	587472
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	5913	6030	6156	6268	6377	6490	6599	6709	6821	6936	6983
- IND. ROUNDWOOD	CUM										
PRODUCT ION	1706	2298	3060	Z 396	3769	3272	2644	3961	3300	3234	3206
1MP.∎QUANT1TY 1MP.₽¥ALUE	5429 308101	4891 313199	5180 269817	6323 415298	7807 5241 <u>9</u> 5	9409 642737	9084 1008531	6141 838237	5558 634635	5671 611327	6518 587472
SAWLOGS & VENEER	CUM										
PRODUCTION	758	1288	2152	1468	2722	2276	1692	3009	2169	2077	2077
IMP.QUANTITY IMP.VALUE	5416 307588	4830 312572	5119 269190	6323 415298	7807 524195	9409 642737	9084 1008531	6141 838237	5558 634635	5671 611327	6518 587472
SANNNOOD & SLEEPERS	CUM										
PROMICTION	1570	1000	7767	7767	2005	1161	1110	3043	2978	3010	3518
IMP QUANTITY	41	37	148	148	148	148	0	0	0	6	9
1HP -VALUE	2205	2819	4864	4864	4864	4864	0 520	0	0	2182	1914
EXP-VALUE	28704	28522	18403	38407	61078	70801	115308	82262	48483	33439	20914
PANEL S	CUM										
PRODUCT 10N	1613	1344	1597	1747	2365	2623	2409	1634	1676	1469	1546
1HP-QUANTITY	0	2	0	0	0	0	0	0	0	0	0
EXP.QUANTITY	141Z	395	1409	1656	1733	1629	1355	966	1089	64Z	345
EXP.VALUE	290208	217536	263856	350385	411898	414416	453461	354106	393552	201126	109857
- PLYWOOD	CUM										
PRODUCTION	1481	1217	1436	- 1671	2289	2560	2338	1575	1599	1423	1491
1MP-QUANTITY	0	2	0	0	0	0	0	0	0	0	0
EXP-QUANTITY	1322	1030	1258	1623	1703	1605	1297	946	1068	64Z	345
EXPOVALUE	273987	192600	228754	347589	408717	411954	447928	352199	391645	201126	109857
PULP FOR PAPER	MT										
PRODUCTION	86	101	94	94	130	106	226	234	273	302	309
IMP .VALUE	62570	105529	70774	264 74450	89220	106040	408 158048	207458	223900	164292	166614
PAPER & PAPERBOARD	MT										
PRODUCTION	512	618	662	698	1124	1365	1594	1680	1783	1737	1982
1MP-QUANTITY	33	25	18	24	19	25	30	32	36	38	52
EXP.QUANTITY	31	31	36	66	61	59	53	154	179	115	99
EXP+VALUE	16451	20371	14307	27913	59733	Z8095	28042	97364	108506	64699	57887

KOREA DPR	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 10	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES 1	N KUREA UPP	t i i i i i i i i i i i i i i i i i i i								
FUELWOOD AND CHARCOAL	4510	4635	4755	4877	5000	5124	5250	5335	5420	5510	5600
IND. RUUNDWOOD Sammood r Sleepes	280	280	280	280	280	2 9 9	280	280	280	260	280
PAPER AND PAPERBOARD	88	83	86	88	88	38	88	88	88	88	88
POPULATION	15054	15451	15853	16254	16657	17063	17475	17892	18317	18747	19185
CONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CAP	TTA								
FUELWOOD AND CHARCOAL	300	300	300	300	300	300	300	295	296	294	292
ING. ROUNDWOOD	40	39	38	37	36	35	34	34	33	32	31
PAPER AND PAPERBOARD	6	5	6	5	5	5	5	5	5	5	5
VALUE ALL FOREST PRODU	ICTS (USS)										
IMP.VALUE	1879	1879	1879	1879	1879	1879	1879	1879	1879	1879	1879
ROUNDWOOD	CUM										
PRODUCTION	5110	5235	5355	5477	5600	5724	5850	5935	6020	6110	6200
IMP.QUANTITY	2	2	2	2	2	2	2	Z	2	2	2
IMP .VALUE	135	135	135	135	135	I 35	135	135	135	135	135
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	4510	4635	4755	4877	5000	5124	5250	5335	54 20	5510	5600
- IND. ROUNDWOOD	CUM										
PRODUCTION	600	600	600	600	600	6 00	600	600	600	600	600
IMP-QUANTITY	2	2	2	2	2	1 1 2	2	2	1.75	1.15	1.15
IMP.VALUE	135	135	135	135	135	135	135	135	135	135	135
SAWLOGS & VENEER	CUM										
PRODUCTION	600	600	600	600	600	600	600	600	500	600	600
IMP-QUANTITY	Z	Z	z	Z	2	2	2	z	2	2	2
IMP.VALUE	135	135	135	135	135	135	135	135	135	135	135
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	280	280	280	280	280	280	280	280	280	280	280
IMP.QUANTITY	0	0	0	0	0	0	0	0	0	0	0
IHP.VALUE	64	64	64	64	64	64	64	64	64	64	64
PULP FOR PAPER	мт										
PRODUCTION	45	45	45	45	45	45	45	45	45	45	45
PAPER & PAPERBOARD	MT										
PRODUCTION	80	75	80	80	80	80	80	80	80	80	80
IMP-QUANTITY	8	8	8	8	8	8	8	8	8	8	8
IHP.VALUE	1680	1680	1680	1680	1680	1680	1680	1660	1650	1680	1680

LAOS	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 10	oc	
******	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MHODITIES I	N LAOS									
FUELNOOD AND CHARCOAL IND. ROUNDWOOD Sannwood & Sleepers	2922 212 36	2986 270 67	3054 213 43	3125 179 29	3199 181 34	32 80 21 5 5 1	3358 204 33	34.36 206 33	3516 208 33	3609 210 33	3690 213 33
PAPER AND PAPERBOARD	2	1	1	1	1	i	1	1	í	í	í
POPULATION	3253	3342	3423	3517	3610	3705	3802	3901	4002	4104	4209
CONSUNPTION OF MAIN CO	MHOOITIES P	ER 1000 CA	PITA								
FUELWOOD AND CHARCOAL IND. ROUNDWOOD Sawnwood & Sleepers Danges	897 65 11	893 81 20	891 62 13	889 51 8	886 50 9	885 57 14	883 54 9 0	881 53 8 0	879 52 8	579 51 8	877 51 8
PAPER AND PAPERBOARD	ō	ō	ò	ō	ā	õ	õ	ó	. 3	ō	ō
VALUE ALL FOREST PRODU	ICTS (US\$)										
IMP.VALUE EXP.VALUE	807 1850	816 2100	816 2150	816 1800	816 1628	816 7531	816 8706	816 8706	316 8706	816 8706	816 8706
ROUNDWOOD	CUM										
PRODUCTION EXP.QUANTITY EXP.VALUE	3134 1 50	3257 1 100	3268 1 150	3305 1 200	3381 1 214	3508 15 6936	3579 17 7790	3659 17 7790	3741 17 7790	3836 17 7790	3920 17 7790
- FUELWOOD & CHARCOAL	CUN										
PRODUCTION	2922	2986	3054	3125	3199	3280	3358	3436	3516	3609	3690
- IND. ROUNDWOOD	CUM										
PRODUCTION EXP+QUANTITY EXP+VALUE	212 1 50	271 1 100	214 1 150	18Q 1 200	182 1 214	228 15 6936	221 17 7790	223 17 7790	225 17 7790	227 17 7790	230 17 7790
SAWLOGS & VENEER	CUM										
PRODUCTION EXP+QUANTITY EXP+VALUE	132 1 50	190 1 100	131 1 150	95 1 200	95 1 214	139 15 6936	130 17 7790	130 17 7790	130 17 7790	130 17 7790	130 17 7790
SAWNHOOD & SLEEPERS	CUM										
PRODUCTION EXP-QUANTITY EXP-VALUE	66 30 1800	92 25 2000	63 20 2000	44 15 1600	46 12 1414	56 5 595	41 8 916	41 8 916	41 8 916	41 8 916	41 8 916
PANELS	CUM										
PRODUCTION Imp.quantity Imp.value	0 2 240	2 0 0	2 0 0	2 0 0	1 0 0	1 0 0	1 0 0	200	3 0 0	5 0 0	5 0 0
- PLYWOOD	CUM										
PRODUCTION IMP+QUANTITY IMP+VALUE	0 2F 240F	2 0 0	2F 0 0	2F 0 0	1 0 0	1F 0 0	1 0 0	200	3 0 0	5 0 0	5F 0 0
PAPER & PAPERBOARD	MT										
INP.QUANTITY INP.VALUE	2 567	1 816	1 816	1 816	1 816	1 816	1 816	1 816	1 816	1 816	1 816

MAGAU	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR V	ALOR 100	0	
*****	1473	1974	1975	1976	1977	1978	1979	1980	1931	1982	1983
ONSUMPTION OF MAIN CO	MNODITIES 1	N MAGAU									
FUELWOOD AND CHARCOAL	28	26	22	20	17	14	15	18	18	18	18
ING. ROUNDWOOD	0	_0	_o	c	0	28	30	21	21	21	21
SAWNWOOD & SLEEPERS	5	5	5	5	4	4	5	3	3	3	3
PANELS	2	2	2	2	2	2	4	6	6	6	6
PAPER AND PAPERBOARD	9	3	6		3	1	8	11	11	11	11
POPULATION	254	257	260	265	270	276	282	287	293	298	304
CONSUMPTION OF MAIN CO	MNOOITIES PI	ER 1000 CAR	PITA								
FUELWOOD AND CHARCOAL	111	99	86	75	64	50	55	84	63	62	61
IND. ROUNDWOOD	0	0	0	0	0	101	106	74	72	71	69
SAWNWOOD & SLEEPERS	20	19	18	17	16	14	17	11	11	11	11
PANEL S	9	9	9	9	7	5	13	22	22	21	21
PAPER AND PAPERBOARD	34	10	23	25	28	25	28	39	39	39	37
ALUE ALL FOREST PRODU	CTS (US\$)										
IMP .VALUE	2441	1980	2526	2676	2882	3680	6762	12435	12435	12435	12435
EXP .VALUE	189	158	127	100	60	17	35	28	28	28	28
ROUNDWOOD	CUM										
IMP-QUANTITY	.28	26	22	20	17	42	45	40	40	40	40
THE TALGE	380	406	412	572	204	1475	2330	2571	2571	2571	2311
- FUELWOOD & CHARCDAL	CUM										
ND GUANTITY	20	26		20	17	14	16	1.0	1.0	1.0	1.0
MP+VALUE	360	406	412	392	364	255	304	435	435	435	435
- 1ND . ROUNOWOOD	CUM										
LMP .QUANTITY	Ð	0	0	0	o	28	30	21	21	21	21
IMP .VALUE	õ	ō	ō	õ	õ	1220	2034	1936	1936	1936	1936
SAWLOGS & VENEER	CUM										
		_									
IMP • QUANT I TY	0	0	0	0	0	28 1220	30	21	21	21	21
INF OT ALVE	U	0		0	v	1220	2034	1750	1750	1750	1730
SAWNWOOD & SLEEPERS	CUM										
MP-QUANTITY	5	5	5	5	4	4	5	3	3	3	3
INP .VALUE	245	300	350	370	404	422	1314	1243	1243	1243	1243
ANELS	CUN										
IMP • QUANT I TY IMP • VALUE	2 843	2 900	2 950	2 1000	2 1000	2 786	4 1414	6 3229	3229	6 3229	6 3229
- PLYW000	CUM										
LMP+QUANT1TY LMP+VALUE	2 843	2F 900F	2F 950F	2F 1000F	2F 1000F	2 786	4 1414	6 3229	6F 3229F	6T 32291	6F 3229F
PAPER & PAPERBOARD	MT										
MP_OUANTITY	0	1	6	7	8	7	8	11	11	11	11
HP-QUANTITY MP-VALUE	9 973	3 374	6	914	8 1114	7 997	8 1696	11 5592	11 5592	11 5592	11 5592
HP-QUANTITY HP-VALUE XP-QUANTITY	9 973 0	3 374 0	6 814 0	914 0	8 1114 9	7 997 0	8 1696 0	11 5592 0	11 5592 0	11 5592 0	11 5592 0

HALAYSIA	QUANTITY	QUANTITE	CANTIDA	0 1000			VALUE	VALEUR	VALOR 10	00	
ور به مرد این مرد این	1973	1974	1975	1976	1977	1973	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN COM	MODITIES 1	N HALAYSIA	((10.3		7314	7646	7610
FUELWOOD AND CHARCOAL IND. ROUNDWOOD	5778 -12238	5997 9803	6282	6386	11912	12458	12910	13997	15052	13746	15071
SAWNWOOD & SLEEPERS PANELS	-2012 83	117	2200	150	248	98	129	2945	198	437	187
PAPER AND PAPERBOARD	192	206	149	192	240	271	292	242	344	330	320
POPULATION	11708	12004	12307	12610	12918	13230	13548	13870	14197	14520	14863
CONSUMPTION OF MAIN COM	MODITIES P	ER 1000 CA	ρίτα								
FUELWOOD AND CHARCOAL IND. ROUNDWOOD	494 -1045	500 817	510 705	506 919	504 922	511 942	505 953	501 1009	508 1060	513 946	513 1014
SAWNWOOD & SLEEPERS	-172	170	179	182	227	253	199	212	235	206 30	178
PAPER AND PAPERBOARD	16	17	12	15	19	20	22	21	24	23	2 2
VALUE ALL FOREST PRODUC	TS (US\$)										
IMP+VALUE	68767	110267	80010	112351	116676	130297	146211	191627	216303	216495	212918
EXP+VALUE	720957	743010	536877	1022687	1057951	1176179	2148286	1987252	1661259	2041364	2174731
ROUNDHOOD	CUM										
PRODUCTION	6941	26808	26408	33880	35123	36175	36349	36525	38503	40873 384	41877 386
IMP.VALUE	6644	1858	2709	1822	2233	3484	5329	6902	6301	4444	4444
EXP .VALUE	410259	455895	302760	581869	632450	126953	1385372	1216320	1072467	1461594	1424282
+ FUELWOOD & CHARCOAL	CUM										
PRODUCTION	5726	5885	6041	6198	6362	6528	6690	6853	7017	7195	7368
IMP -QUANTITY IMP - VALUE	177	212 1121	299 1708	252 1440	252 1573	262 1794	219 1937	215 3510	274 2816	367 4090	367 4090
EXP-QUANTITY EXP-VALUE	125	100	58 376	64	98 491	29 212	67 497	120 1259	77 734.	116 555	116 555
				511							
- IND. ROUNDWOOD	CUM										
PRODUCTION	1215	22923	20 36 7	27682	28761	29647	29659	29672	31486	33678	34509
IMP+VALUE	5913	131	1001	382	660	1690	3392	3392	3485	354	354
EXP .VALUE	409528	455120	302384	581525	631959	726681	1384875	1215061	1071733	1461039	1423727
	C (1)										
	10	11/08	18076	36506	37684	7061/	74676	20676	10127	17607	11110
IMP-QUANTITY	159	21498	28	11	14	25	32	32	32	0	0
EXP.QUANTITY	5871 12887	595 12176	10793	322 15505	16118	16717	16500	15151	15870	19301	18806
EXP.VALUE	396649	433636	281009	574097	622761	719936	1380450	1204910	1059268	1447866	1410554
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	152	4165	4002	5230	5760	6019	6021	6050	6050	6050	6050 84
IMP .VALUE	3022	7611	7882	11750	12761	10746	15165	17920	11124	10804	10804
EXP . VALUE	235196	2219 226746	1914 180547	351382	2993 345833	2827 352961	610230	616234	430842	500978	596309
PANELS	CUN										
PRODUCTION	617	612	575	696	174	652	679	790	792	976	976
IMP-QUANTITY IMP-VALUE	25 2816	19 3165	26 3386	32 4283	26 4591	4 1 5983	44 7986	29 8071	38 10233	45 10873	41 9318
EXP-QUANTITY EXP-VALUE	560 75033	514 59900	402 51878	578 84164	553 79002	596 94028	594 150230	604 152403	632 155655	584 126502	830 151845
	C 194										
- FLTH000	110		101	c 7 c		,		401	603	767	7876
IMP-QUANTITY	8	5	404	4	8	15	22	225	31	32	32F
EXP-QUANTITY	355	215	233	407	344	410	466	474	467	402	479*
EAF WALVE	03908	44473	44172	14820	00750	34372	133147	134772	134217	102 770	11/221
PULP FOR PAPER	MT										
PRODUCTION IMP-QUANTITY	1	1	1	1	1	1 4	1 4	15	1 5	1 4	1 4
IMP+VALUE	411	1014	527	1116	1217	1530	1306	2139	2864	2637	2637
PAPER & PAPERBOARD	MT										
PRODUCTION	19	19	19	18	20	38	46	46	51	51	51
IMP.VALUE	55817	190 96619	134 65506	207 93380	223 95874	245 108578	256 115925	251 156595	185873	284 187863	185841
EXP.QUANTITY Exp.value	2 469	2 469	4 1692	33 5472	3 660	13 2237	10 2454	5 2295	5 2295	5 2295	5 2295

HONGOL 1 A	QUANTITY	QUANTITE	CANTIDA	D 1000			VALUE	VALEUR	VALOR 100	0	
********	1973	1974	1975	1976		1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES	IN HONGOLIA									
FUELWOOD AND CHARCOAL	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350	1350
IND. ROUNDWOOD	976	930	933	976	976	976	976	976	976	976	976
SAWNWOOD & SLEEPERS	450	411	410	581	5	5	5	5	5	5	5
PAPER AND PAPERBOARD	z	z	9	10	10	10	10	10	10	15	15
POPULATION	1363	1403	1444	1486	1529	1573	1616	1663	1709	1755	1803
CONSUMPTION OF MAIN CO	MHODITIES	PER 1000 CA	PITA								
EUELWOOD AND CHARCOAL	990	962	735	908	883	858	834	612	790	769	749
IND. ROUNDWOOD	716	663	646	656	638	620	603	587	571	556	541
SAWNWOOD & SLEEPERS	330	293	284	261	253	246	239	233	221	221	215
PAPER AND PAPERBOARD	i	1	6	6	6	6		6	6	8	8
N	FT5 /11541										
VALUE ALL FOREST FROOD		0	1450	205.0	3950	3974	1394	4016	4160	6800	6800
EXP+VALUE	3022	6522	8686	9300	9300	9300	9300	9300	9300	9300	9300
A (11 14 10 10 10 10	C 118										
RUCHDWOOD	04							22.6.5	1100	1100	1100
PRODUCTION EXP-DUANTITY	2390	2390	2390	2390	2390	2390	2390	2390	2390	2390	2390
EXP.VALUE	1740	2890	4786	2900	2900	2900	2900	2900	2900	2900	2900
- FUELWOOD & CHARCOAL	CUM										
PRODUCT 10N	1 3 5 0	1 3 5 0	1350	1350	1350	1350	1 35 0	1350	1350	1350	1350
- IND. ROUNDWOOD	CUM										
PRODUCTION	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
EXP-QUANTITY	64	110	107	65	65	65	65	65	65	65	65
EXP.VALUE	1740	2890	4786	2900	2900	2900	2900	2900	2900	2900	2900
SANLOGS & VENEER	CUM										
PRODUCTION	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040	1040
EXP.QUANTITY	64	110	107	65	65	65	65	65	65	65	65
EXP.VALUE	1740	2840	4786	2900	2400	2900	2900	2400	2900	2900	2900
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	470	470	470	470	470	470	470	470	470	470	470
EXP-QUANTITY	21	59	60 3900	83	83 6400	83 6400	83	83 6400	83 6400	83 6400	6400
LXF .VALUE	1202	5052	5700	0,000	0100	0.00	0.00				
PANEL S	CUM										
PRODUCTION	4	4	4	4	4	4	4	4	4	4	4
IMP.QUANTITY IMP.VALUE	0	0	2 450	1 300	1 300	1 300	1 300	1 300	1 300	1 300	1 300
- PLYW000	CUM										
PRODUCTION	3	F 3F	3F	3F	3F	3F	3F	3F	35	3F	38
1MP.QUANTITY 1MP.VALUE	0	0	2 450	1 300	1F 300F	1F 300F	1F 300F	1F 300F	1f 300f	1 T 300 T	1F 300F
PULP FOR PAPER	HT										
PRODUCTION	z	z	z	2	2	2	2	2	Z	2	2
PAPER & PAPERBOARD	MT										
PRODUCTION	,	,	2	2	2	2	2	2	2	2	2
IMP.QUANTITY IMP.VALUE	0	0	8 3400	8 3650	8 3650	8 367,4	8 3694	8 3716	8 3840	13 6500	13 6500

NEPAL	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	ALOR 100	00	
من هذه چه چه چه وسند. ان این این این می بودین بودین می ورد و این ماه و این ماه و این این این این این این این ا	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
							. 1 3 1 9 8 8 8 8				
CONSUMPTION OF MAIN CO	MMODITIES I	N NEPAL									
FUELWOOD AND CHARCOAL IND. ROUNDWOOD	11163 434	11399 290	11776 398	12048 488	12324 435	12618. 413	12904 436	13199 434	13498 434	13808 434	14124 434
SAWNWOOD E SLEEPERS Paper and paperboard	216	213	216 2	218	220 2	2 2 0 2	220	- 220	220	220 Z	220 2
POPULATION	12373	12603	13600	13324	13652	13984	14323	14667	15018	15375	15738
CONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CAR	PITA								
FUELWOOD AND CHARCOAL	902	899	906	904	903	902	901	900	399	893	897
IND. ROUNDHOOD	35	23	31	37	32	30	30	30	29	28	28
PAPER AND PAPERSDARD	0	0	0	0	16	0	0	0	13	14 C	0
VALUE ALL FOREST PRODU	CTS (USS)										
EXP.VALUE	3380	8737	6020	31.00	12143	15044	14211	11000	11000	12000	12000
ROUNDWOOD	CUM										
PRODUCTION	11723	11959	12336	12608	12884	13178	13464	13759	14058	14368	14684
EXP-QUANTITY	126	270	162	72	124	147	124	126	126	126	126
EXP .VALUE	3200	8400	5800	3000	12143	15044	14211	11000	11000	12000	12000
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	11163	11399	11776	12048	12324	12618	12904	13199	13498	13808	14124
- IND. ROUNDWOOD	CUM										
PRODUCTION	560	560	560	560	560	560	560	560	560	560	560
EXP-QUANTITY	126	270	162	72	124	147	124	126	126	126	126
EXP .VALUE	3200	8400	5800	3000	12143	15044	14211	11000	11000	12000	12000
SAWLOGS & VENEER	CUM										
PRODUCTION	560	560	560	560	560	560	560	560	560	560	560
EXP-QUANTITY EXP-VALUE	126 3200	270 8400	162 5800	72 3000	124 12143	147	124 14211	126 11000	125 11000	126 12000	126 12000
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION	220	220	220	220	220	220	220	220	220	220	220
EXP QUANTETY	190	337	220	100	0	0	U Q	0	5	Ű	0
	130			100	Ū	Ŭ		Ū	0	Ū	Ŭ
PULP FOR PAPER	MT										
PRODUCTION	15	15	15	15	15	15	15	15	15	15	15
PAPER & PAPERBOARD	MT										
PRODUCTION	Z	2	2	2	2	2	2	Z	2	2	2
NEW ZEALAND	QUANTETY	QUANTITE	CANTID	AD 1000			VALUE	VALEUR	VALOR 10	00	
---------------------------------------	---------------	---------------	--------------	---------------	---------------	----------------------	---------------	---------------	---------------	-----------------------	-----------------------
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MNODITIES 1	N NEW ZEAL	AND								
FUELWOOD AND CHAPCOAL	251	251	258	254	251	251	51	50	50	50	50
IND. ROUNDWOOD SAWNWOOD & SLEEPERS	8261 1854	6666 1926	7385	8462 2032	7931	7381	7118	8539 1466	9221	8914 1802	1665
PANELS PAPER AND PAPERBOARD	278 440	276 432	279 413	327 421	211 403	286 385	227 353	206 395	234 421	277 510	245 437
POPULATION	2977	3042	3087	31 32	3143	3144	3133	3144	3157	3183	3203
CONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CA	PITA								
FUELWOOD AND CHARCOAL	84	82	84	31	80	80	16	16	16	16	16
IND. ROUNDWOOD SAWNWOOD & SLEEPERS	2175 623	2191 633	2 392 627	2702 649	2523 545	2348 419	2268 427	2716 466	2921 533	2800 566	2763 520
PANELS PAPER AND PAPERBOARD	93 148	91 142	91 134	104 134	88 128	91 123	72 112	65 126	74 133	87 150	77
UNINE ALL EGREST DEGON	C YS /115 # 1										
IMP.VALUE	25700	50977	33743	41017	46157	40489	61799	82176	72721	106300	82903
EXP .VALUE	111301	140942	150760	187594	217138	236291	369185	436765	433134	350180	338175
r oundwo'go	CUM										
PRODUCTEON	10693	8664	8567	10019	9742	9003	8803	9995	10315	10021	10021
IMP.VALUE	574	719	1549	1117	1180	922	735	1462	1977	3593	3593
EXP+QUANTITY EXP+VALUE	2191 54031	1759 52617	938 26790	1315 33209	1571 39596	1378 46477	1639 65784	1410 67243	1050 43288	1066 39066	1129 38754
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	250	250	250	250	250	250	50	50	50	50	50
INP.QUANTITY IMP.VALUE	1 14	1	8 253	4	1 173	173	1 173	0	0	0	0
- IND. ROUNDWOOD	CUM										
PRODUCTION	10443	8414	8317	9769	9492	8753	8753	9945	10265	9971	9971
1MP-QUANTITY 1MP-VALUE	9 560	11	6 1296	8 992	10	6 749	4 562	4 1462	5 1977	8 3593	8 3593
EXP.QUANTITY EXP.VALUE	2191 54031	1759 52617	938 26790	1315 33209	1571 39596	1378 46477	1639 65784	1410 67243	1050 43288	1066 39066	1129 38754
SAWLOGS & VENEER	CUM										
PRODUCTION	6578	5212	5300	6393	5693	5161	5181	5816	5784	5614	5614
1 MP • QUANT 1 TY 1 MP • VALUE	6 344	7 399	3 473	4 369	1 627	2 312	1 222	1 745	1 498	6 2473	6 2473
EXP.QUANTITY EXP.VALUE	1922 48084	1312 44684	534 18039	959 26627	1030 28862	937 37741	1237 56670	974 55928	533 29808	479 22146	439 18800
SAMNWOOD & SLEEPERS	CUM										
PRODUCTION	2063	2108	2075	2233	1981	1666	1829	2062	2293	2286	2154
IMP.QUANTITY	40	64	22	36	32	18	25	25	27	31	27
EXP-QUANTITY	249	246	161	237	300	4245 368 29428	513 53957	621 70981	546	13527 516 55728	10286 516 55728
IN TREVE			43337	19301	20673		19011	17701	00317	55120	JJ120
PANELS	CUM	~								_	
PRODUCTION 1 MP .QUANTITY	286 9	260	266 24	326	285 9	314 8	313	319	350	359	327
1 MP•VALUE EXP•QUANT1YY	2514 18	6691 7	4511 10	4894 11	4467	2665	5061 93	3982	4989	5037 88	4527 87
EXP.VALUE	2641	1498	819	1557	3119	6664	19537	26345	26780	20999	18759
- PLYNOGD	CUM										
PRODUCTION 1MP •QUANTITY	57F 3	51 15	43 5	26	33 3	46 2	4 Z Z	54 2	60 2	59 2F	55 2F
HP .VALUE	884	3601	2113	2148	1595	805	1656	1597	2011	1958	1958F
EXP.VALUE	620	566	88	305	1203	2606	7029	8827 8827	10918	8534	6481
PULP FOR PAPER	HT				~						
PRODUCTION	816	893	953	1103	1133	1097	1043	1122	1205	1134	1062
IMP .VALUE	2252	2339	611	1111	486	1432	1581	5225	2865	1014	4029
EXP-QUANTITY EXP-VALUE	142 20162	232 35802	327 65458	370 63095	447 71034	430 73182	464 111933	475 130330	514 142571	417 115809	460 114268
PAPER & PAPERBOARD	MT										
PRODUCTION	534	547	555	635	641	641	631	674	724	723	670
IMP .VALUE	43 14442	56 28815	31 21878	34 26780	32 31240	34 30551	39 46228	44 60929	33 50471	47 76569	59424
EXP.QUANTITY EXP.VALUE	138	172 32107	174 44154	248 73346	270 83096	289 80540	318 118074	323 132866	336 152176	Z60 118578	285
					0,00,0						

NENCALEDONIA	QUANTITY	QUANTITE	CANTIOAD	1000			VALUE	VALEUR V	ALOR 100	ю	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	OMMODITIES I	N NEWCALEDO	NIA .								
IND. ROUNDWOOD SAWNWOOD & SLEEPERS	18 22 0	20 25	13 15 4	11 16	15 21	12 13 3	15 14 4	15 14 4	15 14 4	15 14 4	15 14
PAPER AND PAPERSOARD	3	3	ĩ	i	í	i	i	1	i	i	1
POPULATION	123	1 28	133	136	138	139	140	142	144	147	149
CONSUMPTION OF MAIN CO	DMMODITIES P	ER 1000 CAP	ITA								
IND. ROUNDWOOD SAWNWOOD & SLEEPERS PANELS	146 176 0	156 192 0	96 114 26	82 121 21	109 150 19	86 96 20	104 102 26	102 101 25	101 99 25	99 97 24	97 96 24
PAPER AND PAPERBOARD	20	20	8	9	8	9	9	9	9	9	9
VALUE ALL FOREST PRODU	ACTS (USS)										
IMP.VALUE	2422	2422	3819	3518	4177	4589	5716	5716	5716	5716	5716
ROUNDWOOD	CUM										
PRODUCTION	18	20	12	10	14	11	12	12	12	12	12
IMP.QUANTITY	ő	0	ĩ	ĩ		ï	2	2	2	2	2
IHP.VALUE	0	0	60	132	270	107	750	750	750	750	750
- IND. ROUNDWOOD	CUM										
PRODUCTION	18	20	12	10	14	11	12	12	12	12	12
IMP.QUANTITY IMP.VALUE	0 0	0	1 60	132	1 270	1 107	2 750	2 750	2 750	2 750	2 750
SAWLOGS & VENEER	CUM										
PRODUCTION	17	19	11	9	13	10	11	11	11	11	11
IMP.QUANTITY IMP.VALUE	0	0	0 30	1 1 3 2	1 1 1 5	107	2	2 750	2 750	2	2 750
	-	-							2		
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION	7	10	6	5	6	3	4	4	4	4	4
IMP.VALUE	680	680	1195	1319	1849	1955	1955	1955	1955	1955	1955
PANELS	CUM										
IMP.QUANTITY	0	0	4	3	3	3	4	4	4	4	4
INF.VALUE	0	U	1500	1131	1116	1429	1796	1796	1796	1796	1796
- PLYW000	CUM										
IMP-QUANTITY IMP-VALUE	0F	0	1 880	1	1	2	3	3F	3F	3T	3F
	UF	v	000	005	100	1039	1900	13005	12005	1 2001	13005
PAPER & PAPERBOARD	MT										
IMP.QUANTITY INP.VALUE	3 1742	3 1742	1 1064	1 936	1 942	1 1098	1 1215	1 1215	1 1215	1 1215	1 1215

PAKISTAN	QUANTITY	QUANTITE	CANTIDA	D 1000			VALUE	VALEUR V	ALOR 10	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES U	N PAKISTAN									
	13953	14345	14749	15166	15598	16042	16502	16979	(7469	17976	18425
IND. ROUNDWOOD	493	478	490	577	489	669	632	632	614	621	627
SAWNHOOD & SLEEPERS	141	129	110	139	88	102	107	132	160	160	160
	43	130	35	37	66 59	128	57	124	120	120	120
AFER AND PRECEDURED		130									
OPULATION	71234	73179	75176	77340	19602	81982	34503	8/1/2	90017	93010	96043
ONSUMPTION OF MAIN CO	MAODITIES PI	ER 1000 CAP	PITA								
FUELWOOD AND CHARCOAL	196	196	196	196	196	196	195	195	194	193	193
SAWNHOOD & SLEEPERS	z	ż	i	ż	ĩ	ĩ	i	2	ż	2	z
ANELS	1	1	0	0	0	1	1 2	1	1	1	1
AFER AND FATERDOORD	Ľ	Ľ		•	•	Ľ	~	•			Ľ
ALUE ALL FOREST PRODU	ETS (US\$)										
IMP .VALUE	37095	46564	47300	36633	45077	53111	64692	79759	8 35 39	82340	82340
EXP .VALUE	172	0	0	0	0	0	0	0	Ũ	C	0
LOUNDWOOD	CUM										
PRODUCTION	14434	14811	15188	15702	16032	16637	17074	17558	13056	18570	19095
MP-QUANTITY	12	12	51	41	55	74	60	52	27	27	27
MP+VAL UE	1065	1065	4457	3713	5324	7381	6512	5791	3592	3592	3592
FUELWOOD & CHARCOAL	CUM										
RODUCTION	13953	14345	14749	15166	15598	16042	16502	16978	17469	17976	16495
IND. ROUNDWOOD	CUH										
RODUCTION	481	466	439	536	434	595	572	580	587	594	6 0 0
MP • QUANTITY MP • VALUE	12	12	51 4457	41	55 5326	74 7381	60 6512	52	27	27	27
IN TORE OF	1005	100)	4451	5115	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1501	0,12	5171	5572	5572	,,,,
- SAWLOGS & VENEER	CUN										
RODUCTION	256	233	199	288	178	330	299	299	299	299	299
MP-QUANTITY	12	12	50	41	54	73	59	51	27	27	27
MP.VALUE	1065	1065	4 3 5 0	3688	5248	7375	6454	5733	3534	3534	3534
AWNWOOD & SLEEPERS	CUM										
	104	0.0	70	96		10					
MP-QUANTITY	37	31	31	53	61	63	52	27	105	105	105
HP .VALUE	3119	2621	2621	5208	5343	5923	5314	8191	11087	11087	11007
ANELS	C11H										
ATTLE 2	CUR				_	_					
RUDUCTION	36	32	27	27	24	47	52	112	112	112 R	112
MP-VALUE	968	988	1470	1918	1941	1518	1484	3768	4046	4046	4046
PL48000	CUM										
RODUCTION	1	4	2	75	,	,	1	15	16	36	16
HP .QUANTITY	14	ÌF	Ĩ	1	1 F	1	, 1F	16	2	2F	ZF
MP.VALUE	361	361	402	440	277	311	426	560	1038	1038F	1038F
ULP FOR PAPER	H T										
RODUCTION	50	50	50	50	50	5.6	56	54	56	54	90
HP QUANTITY	6	8	7	3	4	7	11	12	13	13	13
IMP . VALUE	1196	2238	2174	1084	975	2451	3798	4301	6903	6903	6903
APER & PAPERBOARD	MT										
RODUCTION	47	52	56	33	34	60	60	60	60	60	76
MP QUANTITY	74	78	68	72	64	68	98	95	83	18	81
XP+QUANTITY	1 (80 (34045	81 COC 0	24/10	08806	35838 0	47584	57708	0	50/12	56/12
XP.VALUE	172	ŏ	õ	ŏ	ŏ	õ	ŏ	ő	ő	ŏ	o

PAPUA N GUIN	QUANTETY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 100	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N PAPUA N C	UIN								
FUELWOOD AND CHARCOAL IND. ROUNDWOOD SAWNWOOD & SLEEPERS PARELS PAPER AND PAPERBUARD	4529 379 111 8 1	4639 299 90 8 1	4753 656 110 8 1	4870 736 102 5 3	4995 563 87 15 0	5122 741 91 16	5255 741 91 16 0	5390 679 142 13 0	5533 454 100 11 0	5533 187 103 12 0	5533 204 104 12 0
	7616	7686		2844	2017	3035	1134	1211	1125	3417	3508
CONSUMPTION OF MAIN CO	MMODITIES P	ER 1000 CAF	PITA .		2751		5154	52.51			
FUELWOOD AND CHARCOAL	1731	1727	1724	1712	1701	1688	1677	1668	1564	1619	1577
IND. ROUNDWOOD Sawnnood & Sleepers Panels Paper and Paperboard	145 42 3 0	111 34 3 0	238 40 3 0	259 36 2 1	192 30 5 0	244 30 5 0	236 29 5 0	210 44 4	137 30 3 0	55 30 4 0	58 30 4 0
VALUE ALL FOREST PRODU	CTS (USS)										
IMP •VALUE Exp •VALUE	551 15727	400 30787	305 18986	1474 26707	0 28765	0 3 30 4 2	0 39483	0 70857	0 64979	0 87004	0 74025
R DUND WOOD	CUM										
PRODUCTION EXP.QUANTITY EXP.VALUE	5333 425 8036	5603 665 18088	5859 450 11617	6194 588 15516	6131 573 18775	6478 615 23099	6611 615 29540	6842 773 57057	6831 844 54945	6910 1190 78222	6910 1173 66219
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	4529	4639	4753	4870	4995	5122	5255	5390	5533	5533	5533
- IND. ROUNDWOOD	CUM										
PRODUCTION EXP-QUANTITY EXP-VALUE	804 425 8036	964 665 18088	1106 450 11617	1324 588 15516	1136 573 18775	1356 615 23099	1356 615 29540	1452 773 57057	1298 844 54945	1377 1190 78222	1377 1173 66219
SAWLOGS & VENEER	CUM										
PRODUCTION EXP-QUANTITY EXP-VALUE	804 425 8036	889 655 17824	939 372 9465	1181 445 11273	965 402 13373	1186 445 15859	1186 445 22300	1164 642 46478	1080 749 46825	1159 1063 67222	1159 1019 52819
SAWNWOOD & SLEEPERS	CUN										
PRODUCTION IMP-QUANTITY IMP-VALUE EXP-QUANTITY EXP-VALUE	141 0 30 3844	142 0 52 7117	137 0 27 3498	152 1 54 51 6351	138 0 0 51 7155	138 0 0 47 6440	138 0 47 6440	187 0 45 9221	124 0 0 24 5368	124 0 21 4765	124 0 20 3789
PANELS	CUM										
PRODUCTION IMP-QUANTITY IMP-VALUE EXP-QUANTITY EXP-VALUE	23 274 16 3847	27 2 235 21 5582	23 1 140 15 3871	20 1 393 15 4840	23 0 0 8 2835	25 0 9 3503	25 0 0 9 3503	20 0 0 8 4579	19 0 0 8 4666	19 0 7 4017	19 0 7 4017
- PLY#000	CUM										
PRODUCTION IMP-QUANTITY IMP-VALUE EXP-QUANTITY EXP-VALUE	18 1F 138F 13 3429	22 1 65 16 4885	19 1 140 12 3466	15 0 218 11 4290	15 0 6 2560	15 0 6 31 52	15F 0 6F 3152F	10 0 6 4252	9 0 0 8 4564	9F 0 0 5 3915	9F 0 0 6F 3915F
PAPER & PAPERBOARD	MT										
IMP.QUANTITY IMP.VALUE	1 277	1. 165	1 165	3 1027	0 0	0 0	0 0	0	0 0	0	0 0

PHILIPPINES	QUANTITY	QUANTIT	CANTIO	AO 1000			VALUE	VALEUR	VALOR 10	00	
********	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN COP	MODITIES I	N PHILIPP	INE S								
FUELWOOD AND CHARCOAL IND. ROUNDWOOD Sawnwood & Sleepers Panels	21786 4821 634 395	22225 4926 1009 172	22944 5970 1216 329	23572 8779 1116 247	24199 8479 1112 278	24839 7653 1209 263	25452 8079 712 262	26039 8011 787 324	26845 6260 672 226	27619 5551 610 309	28378 6279 494 304
PAPER AND PAPERBOARD	368	332	255	326	329	436	463	456	359	355	337
CONSIMPTION OF MATH COM	40477	41909 Fe 1000 C/	42303	43830	44770	43724	47100	40517	47572	,0011	52075
EUELWORD AND CHARCOAL	538	5 3 5	539	540	541	541	540	539	542	544	545
IND. ROUNDWODD SAWNOOD & SLEEPERS PANELS PAPER AND PAPERBOARD	119 16 10 9	119 24 4 8	140 29 8 6	201 26 6 7	189 25 6 7	167 26 6 9	171 15 6 10	166 16 7 9	126 14 5 7	109 12 6 7	121 9 6 6
VALUE ALL FOREST PRODUC	TS (US\$)										
MP •VALUE XP •VALUE	27247 422258	59518 300141	33504 225050	35554 253711	29449 263680	60989 312534	79864 471862	85129 473550	74146 444810	79645 372126	79200 340182
COUNDWOOD	CUM										
PRODUCTION	34401	32047	33617	34792	34851	34835	34982	35 501	34982	34899	35787
IMP QUANTITY IMP QUANTITY EXP QUANTITY EXP QUANTITY	0 8 7794 303785	12 4896 270332	1 99 4704 168870	150 2443 137203	408 2175 136339	427 2346 147667	409 1453 149616	760 1460 158014	769 1886 1875 97	298 1738 168889	0 1130 9 6 132
	303103	200332	100010								
FUELWOOD & CHARCOAL	CUM 21.621	22428	23052	23684	24327	24985	25657	26345	27048	27766	28491
EXP.QUANTITY EXP.VALUE	35	203 4483	108	112 1981	128 2491	146 2798	205 5209	306 9148	203	148 3529	113 2534
- IND. ROUNDWOOD	CUM										
PRODUCTION IMP •QUANTITY	12580 0	9619 0	10565 1	11108 2	10524 2	9850 3	9325 2	9156 9	7934 9	7133 8	7296 0
MP•VALUE XP•QUANTITY XP•VALUE	8 7759 303564	12 4693 215849	99 4596 166881	150 2331 135222	408 2047 133848	427 2200 144869	409 1248 144407	760 1154 148866	769 1683 181764	298 1590 165360	0 1017 95598
- SAWLOGS & VENEER	CUM										
RODUCTION	10243	7332	8441	8712	7927	7169	6578	6351 #	5400 B	4514	4430
MP.VALUE XP.QUANTITY XP.VALUE	0 7759 303564	12 4693 215849	0 4596 166381	0 2331 135222	0 2047 133848	0 2200 144869	0 1248 144407	289 1154 148866	298 1683 181764	298 1590 165360	0 1017 95598
AWNWOOD E SLEEPERS	CUM										
RODUCTION	1061	1292	1470	1609	1567	1781	1626	1529	1219	1200	1222
[MP.QUANTITY [MP.VALUE	0 51	1 142	0 1 2 2	0 108	0 144	0 245	1 534	0 224	0 332	0 434	0 429
XP.QUANTITY XP.VALUE	427 35117	284 30068	254 27229	493 68195	455 66681	573 85190	915 198345	742 181286	547 125766	591 123696	728 149075
ANELS	CUM										
PRODUCTION IMP.QUANTITY	952	5 3 2 0	584 1	556 1	653 1	678 1	732	759 0	672 0	603 0	662 0
IMP .VALUE EXP .QUANT I T Y	0 557	0 360	573 256	494 310	494 376	494 416	470	0 435	446	0 294	0 358
XP•VALUE	77479	46164	28717	48313	60660	79433	122763	133307	129433	78106	91259
- PLY#000	CUM										
RODUCTION XP+QUANTITY XP+VALUE	705 388 59008	274 171 27530	423 157 20602	416 260 43163	489 340 55957	490 383 74676	515 417 112683	553 367 117314	463 398 118540	434 249 69306	469 303 78482
PULP FOR PAPER	HT										
PRODUCTION	184	182	118	174	204	211	218	171	234	277	196
HP-NUANTITY HP-VALUE EXP-QUANTITY EXP-VALUE	9426 13 3495	21249 6 5489	8835 2 1941	40 13166 2 1941	18244 2 1941	15978 2 1941	22086 6 8150	23769 6 8934	15675 10 10296	17489 8 10607	19845 7 10361
PAPER & PAPERBOARD	HT										
PRODUCTION IMP.QUANTITY	340	270 67	217	286 40	305 24	341 95	350 115	337 120	247 113	222	212 127
IMP • VALUE EXP • QUANTITY EXP • VALUE	17827 29 4418	33570 5 2778	23970 0 234	21227	9798 0 0	43457 1 244	56974 3 1138	59792 1 745	57017 1 1432	60887 1 1034	58905 1 1315
note: • unofficial figure F fao estimate T trend				2	216						

SAMOA	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 10	00	
*****	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MMODITIES I	N SAMDA									
FUELWOOD AND CHARCOAL IND. ROUNDWOOD SAWNWOOD & SLEEPERS	60 65 24	60 65 19	60 61 30	60 26 14	70 47 16	70 53 18	70 61 19	70 61 20	70 61 37	70 51 31	70 61 31
PANELS	3	3	1	0	0	0	2	2	1	1	1
PAPER AND PAPERDUARD	1					164	154	167	148	14.0	
POPOLATION	147	149	150	151	153	134	198	157	155	100	101
CUNSURPTION OF MAIN CO	HRUUITIES P	ER TOUD CA	-114								
FUELWOOD AND CHARCOAL	408	403	400	397	458 308	455	449	446	443	438	435
SAWNWOOD & SLEEPERS	162	127	197	91	104	118	123	127	231	193	191
PANELS	18	17	7	1	2	0	13	13	3	3	3
PAPER AND PAPERDUARD	0	U	0	0	0		0	5	v	•	•
VALUE ALL FOREST PRODU	CTS (USS)										
IMPSVALUE	763	307	368	437	467	340	677	677	1252	1962	1962
EXP.JVALU€	610	614	167	139	266	254	294	309	288	1270	1270
ROUNDWOOD	CUM										
PRODUCTION	125	125	121	86	116	123	131	131	131	131	131
IMP-QUANTITY	0	0	0	0	1	0	0	0	Q	0	0
INP+VALUE	,	U	0	24	100	U	U	0	0	Ŭ	U
- FUELHOOD & CHARCOAL	CUM									^{ند} .	
PRODUCTION	60	60	60	60	70	70	70	70	70	70	70
- IND. ROUNDWOOD	CUM										
PRODUCTION	65	65	61	26	46	53	61	61	61	61	61
INP-QUANTITY	0	0	0	0	1	0	0	0	0	0	0
INF & VALUE	,	Ū	c	24	100	Ū	0	0	Ŷ	•	· ·
SAWLOGS & VENEER	CUM										
PRODUCTION	62	62	58	23	43	50	58	58	58	58	58
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION	32	26	31	14	18	20	21	21	21	21	Z 1
INP QUANTITY	1	1	1	1	2	3	2	2	18	16	16
EXP+QUANTITY	10	8	3	2	4	4	4	3	2	6	6
EXP.VALUE	610	614	187	139	266	254	294	309	288	1270	1270
PANELS	CUM										
PRODUCTION	2	Z	0	0	0	0	0	0	0	0	0
IMP.QUANTITY IMP.VALUE	1 194	1 194	1 194	47	0	0	2 451	2 451	1 207	1 193	1 193
- PLYW000	CUM								_		
IHP+QUANTITY IMP+VALUE	1 194	1F 194F	1F 194f	0 47	0 114	0 0	1 400F	1 400	F 1F F 207	16 1937	1F 193F
PAPER & PAPERBOARD	NT										
IMP+QUANTITY	1	0	0	0	0	с С	0	0	0	1	1 345
LAF & TALUC	404	5	v	5	0	5	v	0	0	243	2.17

SINGAPORE	QUANTITY	QUANTITE	CANTIO.	AD 1000			VALUE	VALEUR	VALOR 10	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1931	1982	1983
CONCIMPTION OF MITH CO											
CONSUMPTION OF MAIN CO		SINGAPUP	10							168	
IND. ROUNDWOOD	1329	1189	1003	1460	1299	1507	1441	1091	184	480	483
SAWNWOOD & SLEEPERS PANELS	509 157	688 302	387 234	421 258	366 270	414 325	127 311	357 282	558 407	669 344	642 368
PAPER AND PAPERBOARD	145	141	90	132	133	146	224	2 30	251	239	300
POPULATION	2186	2224	2263	2295	2326	2355	2385	2415	2445	2476	2508
CONSUMPTION OF MAIN CO	MMODITIES PE	R 1000 CA	PITA								
FUELWOOD AND CHARCOAL	24	20	17	20	37	22	29	36	7	60 194	-6
SAWNWOOD & SLEEPERS	233	309	171	183	157	176	53	148	228	270	256
PANELS PAPER AND PAPERBOARD	72	136	103 40	112	116 57	139 62	130 94	117 95	166 103	139	147
VALUE ALL FOREST PRODU	CT'S (US\$)										
IMP.VALUE	186229	218104	169101	255617	289725	376321	522342	545109	552153	464509	525730
EXP .VALUE	209456	187141	149163	236110	251340	321725	512396	526980	441400	400786	463578
ROUNDWOOD	CUM										
1HP-QUANTITY	1403	1291	1075	1547	1501	1635	1612	1285	944	702	690 77747
EXP-QUANTITY	21	58	33	42	115	78	101	107	143	14	221
EAP.VALUE	385	1097	643	142	4327	7593	14001	12754	10318	11502	14045
- FUELNOOD & CHARCOAL	CUM										
IMP-QUANTITY	69	91	68	84	161	94	129	152	138	174	152
EXP-QUANTITY	252	391	364 29	429 39	1249	841 43	1396	2085 65	1813	26	166
EXP.VALUE	115	559	354	414	1155	892	837	751	2855	418	4055
- IND. ROUNDWOOD	CUH										
IMP QUANTITY	1334	1200	1007	1463	1340	1542	1483	1133	806	528	538
EXP+QUANTITY	51675	49131	43111	59586	66422 41	121442	130349 42	42	41888	60073	74965
EXP.VALUE	270	5 38	289	328	3172	6701	13164	12003	7463	11084	9990
SAWLOGS & VENEER	CUM										
IMP QUANTITY	1328	1195	1000	1450	1324	1529	1477	1118	781	501	529
EXP QUANTITY	51788	49000	43008	59429	00210 40	34	42	42	91255	59155	74860
EXP.VALUE	245	520	246	318	3161	6687	13164	11997	7251	10872	9778
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION	830	860	407	461	339	397	391	418	418	418	418
IMP .VALUE	819 43191	658 45576	664 43778	83253	98816	116809	161900	156867	148531	133811	128778
EXP+QUANTITY EXP+VALUE	1141 119571	830 85202	685 62553	1142 120522	1194 128234	1236 160383	1465 287677	1192 261869	958 184559	884 158900	893 191338
PANELS	C UM										
PRODUCTION	240 440	6 60	676	410	418	5 7 7	577	577	577	577	577
INP.QUANTITY	193	199	219	283	313	345	329	362	459	413	526
IMP+VALUF EXP+QUANTITY	26987 476	26175 336	25922 410	40014 495	44000 481	>6915 590	94525 590	92076 652	112738 624	94732 641	118612 730
EXP.VALUE	80254	12496	74343	100462	102766	136908	191947	220500	209746	193909	217458
- PLYW000	CUM										
PRODUCTION 1MP+QUANTITY	350F	350F 98	334F	380F	348F 219	482F 233	482F 229	482F	482F 319	482F 283	482F 417
IMP.VALUE	21965	18187	20217	34098F	35647	44942	11264	70236F	86368	71596	94112
EXP-VALUE	430 72745	289 62997	58U 68194	459F 93678F	441 93765	128260	568 181542	616 206345	587 197468	511 181940	693 202774
PULP FOR PAPER	HT										
1MP+QUANT1TY	4	2	1	z	1	5	2	5	3	3	3
1MP.VALUE EXP.QUANTITY	1153	648 3	487	688 1	406 0	1703	680 0	2503	1885	1500	1558
EXP-VALUE	119	1 3 5 1	117	208	107	59	151	264	203	70	192
PAPER & PAPERBOARD	HT										
PRODUCTION	6	6	. 6	6	6	6	6	6	6	6	6
IMP .VALUE	192 62713	177 96183	114 55439	165 71612	174 78797	188 78575	260 133456	273 178186	297 195298	282 172671	354 199540
EXP-QUANTITY EXP-VALUE	53 9127	42 26995	30	39	46 15906	48 16782	41	49 31593	52 36574	49 36405	60 19945
		_ ~							20214		

RI-LANKA	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR V	ALUK 100	<i>.</i> 0	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
DUSUNPTION OF MAIN CO	MNODITIES IN	N SRT LANKA									
UELWOOD AND CHARCOAL	6383	64.91	6599	6706	6816	6931	7054	7007	7150	7310	7476
ND. ROUNDWOOD	487	502	515	492	489	558	596	677	647	673	708
ANNNOOD & SLEEPERS	23	33	38 38	40	2 8 32	64 30	20	36 36	36	26 19	35
APER AND PAPERBOARD	46	40	33	28	37	43	41	57	70	62	60
PULATION	13170	13381	1 360 3	13825	14053	14292	14546	14813	15111	15422	15747
INSUMPTION OF MAIN COM	MMODITIES PE	ER 1000 CAP	ITA								
JELWOOD AND CHARCOAL	485	485	485	485	485	485	485	473	473	474	475
WINNOOD & SLEEPERS	2	2	3	3	2	4	14	*0 2	43	2	2
INEL S	3	3	3	3	2	2	1	Z	1	1	1
PER AND PAPERBOARD	3	3	2	2	3	3	3	4	5	4	4
LUE ALL FOREST PRODUC	CTS (US\$)										
AP .VALUE	8355	11231	10211	7345	9797	10278	18461	377 42	35012	35177	29358
AF BTALUE	10	10	230	699	202	262	202	0404	6437	5152	2188
ODDWON	CUM										
DOUCTION P-QUANTITY	68.70 0	6993 0	7115	7199 1	7305	7489 0	7650	7865	7978	8157 173	8363
P+VALUE	10	10	196	121	27	27	27	5794	5767	3182	3188
FUELWOOD & CHARCOAL	CUM										
ODUCTION	6181	64.91	6599	6706	6816	6031	7064	71 87	7110	7686	7660
AQUANTITY	0	0	0	0	0	0	0	180	180	173	178
ALVE	U	U	U	0	U	U	U	3101	2101	3182	2128
IND. ROUNDWOOD	CUM										
ODUCTION P-QUANTITY	487	502	516	493	489	558	596	677	647	673	708
.VALUE	10	10	196	121	27	27	27	27	õ	ŏ	o
SAWLOGS & VENEER	CUM										
DUCTION	67	92	97	65	53	113	162	184	145	162	188
P-QUANTITY	0	Ő	1	ĩ	ō		0	0	. 0	0	0
FARLUE	10	10	196	121	27	21	27	27	0	0	0
INNOOD & SLEEPERS	CUM										
	23	33	38	37	25	61	17	26	31	21	Z 9
P-QUANTITY P-VALUE	0	0	0	3 345	3 345	3 345	4 470	11 2100	8 1309	5 782	6 893
QUANTITY	Ö	Ō	0	1	1	1	1	1	1	ō	0
- TALVE	o	o	34	110	633	237	233	670	010	U	U
ÆLS	CUM										
ODUCTION P_GUANTITY	24	25	26	23	20	18	.5	15	15	13	13
P.VALUE	1291	1291	1291	1291	1291	1291	1291	21 9409	379	2764	1982
V Y WOOD	CUM										
ODUCTION	. ,,	,,,	23	21	17	15	1	12	12	10	1.05
.QUANTITY .VALUE	12F 1246F	21 9380	2F 850	6 2764	1982						
LP FOR PAPER	MT										
ODUCTION	6	10	6	5	6	10	9	10	10	10	10
P•QUANTITY P•VALUE	6 897	6 897	6 897	6 897	8 1743	11 2638	15 6542	2953	6 3700	4 2 36 8	5 2643
	HT										
ST & TATERDUARD									10	10	10
DOUCTION	21	22	10	14	20	• •		1.0			
DOUCTION P.QUANTITY	21	23	19	18	20	19	21 20	39	50	43	41

SOLOMON IS	QUANTITY	QUANTITE	CANTIDAO	1000			VALUE	VALEUR V	ALOR 100	0	
ی اسان بر بر استان از این بر بر این منابع بر بر این این بر این	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
*************************	**********	**********	**********		********	********			********	*******	*********
CONSUMPTION OF MAIN CO	MNODITIES I	N SOLOHON 1	15								
FUELWOOD AND CHARCOAL	177	182	187	193	198	204	210	210	210	210	210
IND. ROUNDWOOD	11	15	20	23	21	26	44	76	5	25	14
PANELS	5	0	3	ĩ	í	2	10	10	10	10	10
									•		-
POPULATION	180	186	193	200	201	215	223	231	240	249	259
CONSUMPTION OF MAIN CO	MMODIFIES P	ER 1000 CAR	PITA								
FUELWOOD AND CHARCOAL	983	978	969	965	957	949	942	909	875	843	811
IND. ROUNDWOOD	60	80	104	114	102	1 3 2	196	331	25	101	56
SAWNWOOD & SLEEPERS	27	33	39	39	31	40	44	4Z	41	39	38
PANELS	4	5	4	'	6	1	13	13	13	12	12
VALUE ALL FOREST PRODU	CTS (USS)										
INP.VALUE	162	167	196	163	177	196	592	592	592	592	592
EXP+VALUE	4834	5708	3670	7625	9555	7358	17687	17060	21360	21160	21580
ROUNDWOOD	CUM										
PRODUCTION	442	408	415	457	484	453	512	512	512	512	512
EXP+QUANT1TY	254	211	208	241	265	221	258	226	296	211	288
EXP.VALUE	4834	5708	3550	7426	9342	6996	16457	15830	20130	19930	20350
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	177	182	1.97	193	198	204	210	210	210	210	210
r Robot r rom		152		.,,	1,0	201	110				
- IND. ROUNDWOOD	CUM										
PRODUCTION	265	226	228	264	286	249	302	302	302	302	302
EXP-QUANTITY	254	211	208	241	265	221	258	226	296	211	288
EXP + VALUE	4834	5708	3550	7426	9342	6996	16457	15830	20130	19930	20350
SAWLOGS & VENEER	CUM										
PRODUCTION	265	226	228	264	286	249	302	302	302	302	302
EXP-QUANT 1 TY	254	211	208	241	265	221	258	226	296	277	288
EXP.VALUE	4834	5708	3550	7426	9342	6996	16457	15830	20130	19930	20350
SAWNWOOD & SLEEPERS	CUM										
PRODUCTION	4	6	8	9	8	11	18	18	18	18	18
INP-QUANTITY	1	0	0	0	o	0	0	0	0	0	0
IMP.VALUE	48	48	71	17	0	0	0	0	0	0	0
EXP-QUANTITY	0	0	1	1	2	3	8	8	8	8	8
EXMANUE	0	U U	120	199	213	362	1230	1230	1230	1230	1230
PANEL S	CUN										
PRODUCTION	0	0	0	0	0	1	1	1	1	1	1
INP.QUANTITY	1	1	1	1	1	1	2	2	2	2	2
INP .VALUE	114	119	125	146	177	196	592	592	592	592	592
- PLYWOOD	CUM										
IMP.QUANTITY	0	0	0*	0*	0	0*	1*	16	16	17	15
IMP.VALUE	80	67	89F	75F	99	150	400*	400F	400F	400 T	400F

THA IL AND	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 10	00	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN CO	MAGOITIES I	Ν ΤΗΑΤΙΑΝΟ									
FUELWOOD AND CHARCOAL	28313	29107	29939	30670	31458	32222	32999	33731	14476	35108	35866
IND. ROUNDWOOD SAWNHOOD & SLEEPERS	5244 2067	5279	5018 1771	5149	5414	4879	6449 2358	5101	4459	4215	4402
PANELS PAPER AND PAPERBOARD	84 268	87 261	100	114	118	128	154	143	175	229	252
POPULATION	39303	40332	41 388	47394	43402	44414	45431	46455	47489	48531	49568
CONSUMPTION OF MAIN CO	HHODITIES P	ER 1000 CA	PTTA	42374	434,52		1,1,1	404))	4/407	40551	49300
FUELWOOD AND CHARCOAL	720	122	723	723	725	725	776	776	725	723	774
IND. ROUNDWOOD SAWNWOOD & SLEEPERS	133	131 43	121	121	125	110	142	110	94 28	87	89
PANELS PAPER AND PAPERBOARD	2 7	2 6	2	3	3	3	3	3	4	5	5
VALUE ALL FOREST PRODU	CTS (US\$)										
IMP.VALUE	54044	53999	63030	75093	92314	139985	238638	199103	253692	220452	274870
EXP.VALUE	42475	37055	38641	58511	61258	35203	30157	27963	27174	30262	29493
ROUNDWOOD	CUM										
PRODUCTION IMP QUANTITY	33832 24	34685 0	35140 23	36094 14	37045	37144	39410	38954	39024	39536	40416
IMP+VALUE EXP+QUANTITY	728 299	0 299	402 206	841 290	4123	12037	21714	11678	15664	15658	31428
EXP.VALUE	12913	12913	1153	12305	10401	4235	1822	2701	5743	6458	4088
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	28525	29319	30139	30910	31665	32428	331 68	33957	34718	35463	36243
INP.VALUE	0	0	24	1 9	0	23	3 34	12 274	16 191	32 373	45 510
EXP-VALUE	846	212 846	1049	241 1618	1618	208 1205	192 1529	238 2408	308 2927	388 3642	422 4088
- IND+ ROUNDWOOD	CUM										
PRODUCTION	5307	5366	5001	5184	5380	4716	6222	4997	4306	4073	4173
IMP.QUANTITY IMP.VALUE	24 728	0 0	17 378	14 832	66 4123	180 12014	227 21680	105 11404	160 15473	149 15285	229 30918
EXP .VALUE	87 12067	87 12067	1 104	49 10687	32 8783	17 3030	1 293	1 293	7 2816	7 2816	0 0
SAWLOGS & VENEER	CUM										
PRODUCTION	3517	3517	3090	3210	3340	2609	3101	2544	1798	1769	1820
IHP-QUANTITY IHP-VALUE	23 723	0	12 92	10 623	61 3825	169 11490	216 20188	105 11382	159 15326	147 15074	226
EXP QUANTITY EXP VALUE	- 87 12067	87 12067	1 104	49 10687	32 8783	17 3030	1 293	1 293	7 2816	7 2816	0
SAWNWOOD & SLEEPERS	CUR										
PRODUCTION	1942	1519	1672	1670	1744	1572	1558	1543	971	011	930
IMP+QUANTITY IMP+VALUE	218	285	174	131	255	346	806	342	433	347	385
EXP.QUANTITY EXP.VALUE	93 19959	63 19959	75 27913	101 26851	52 31283	16 12784	7	2	1 249	1	138
PAMELS .	C 118										
PRODUCTION	111	114	107	122	128	132	164	15.0	1.0.7		34.4
IMP-QUANTITY IMP-VALUE	6	1	9	9	8	14	15	8	10	-7	8
EXP+QUANTITY EXP+VALUE	32 8687	29 3267	15 7462	18	17 15958	19	17	15	17	16	21
~ PLYW000	CUB									17107	15000
PRODUCTION	55	60	51	63	68	75	93	89	106	14.0	145
IMP.QUANTITY IMP.VALUE	0 51	117	0	1	1 168E	1	2	1	1	2	2
EXP+QUANTITY EXP+VALUE	28 3230	28F 3230F	9 1956	11 2254	5	1 288	2 426	2 557	4	352	2
PULP FOR PAPER	MT										
PRODUCTION	36	26	38	52	52	3.8	36	37	17	51	41
IMP.QUANTITY IMP.VALUE	84 18259	84 18259	26 9556	70 23255	87 29068	105	128 56248	81 43993	111 59241	92 39756	121 51741
PAPER & PAPERBOARD	MT										
PRODUCTION	171	165	180	217	252	211	332	338	349	259	279
IMP.VALUE	30372	30 37 2	48063	45521	110 38594	63149	151 87127	134 96909	164 121319	151 104870	208 124461
EXP.VALUE	4 916	4 916	2113	5 2696	6 361 o	7 3915	11 6668	15 9763	8 6738	8 8268	5 6587

TUNGA	QUANTITY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 100	0	
*****	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
CONSUMPTION OF MAIN COM	MODITIES IN	TONGA									
IND. ROUNDWOOD Sawnwood & Sleepers	0 0	0 0	0 0	0 0	0 0	0 0	0 0	9 0	0 0	8 15	3 9
POPULATION	37	87	88	89	90	92	94	96	99	101	104
CONSUMPTION OF MAIN COM	MODITIES PE	R 1000 CAP	ITA								
IND. ROUNDHODD SAWNHOOD & SLEEPERS	0 0	0 0	0 0	0 0	0 0	0	0 0	0	0 0	74 148	29 83
VALUE ALL FOREST PRODUC	TS (US\$)										
IMP .VAL UE	0	0	0	0	0	o	0	0	0	2614	1577
ROUNDWOOD	CUM										
PRODUCTION	0	0	0	0	0	о	Ó	0	Û	8	3
- IND . ROUNDWOOD	CUM										
PRODUCTION	0	0	0	0	о	ø	0	0	0	8	3
SAWLOGS & VENEER	CUM										
PRODUCTION	0	0	0	0	0	0	ð	. 0	0	8	3
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION Imp QUANTITY Imp VALUE	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	0 0	0 0 0	0 0 0	3 12 2614	1 8 1577

VANUATU	QUANTETY	QUANTITE	CANTIDAD	1000			VALUE	VALEUR	VALOR 100	00	
۵ - ۲۰ - ۲۰ - ۲۰ - ۲۰ - ۲۰ - ۲۰ - ۲۰ - ۲	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
***************************************	53537777 6 53	*********	*******	22222232							
CONSUMPTION OF MAIN CON	MODITIES I	N VANUATU									
FUELWOOD AND CHARCOAL	21	22	22	23	23	24 1	24 1	24	24	24	24
SAWNNOOD & SLEEPERS	ž		7	3	2	3	3	3	2	3	4
PANELS	0	Û	U	U	U	Ŭ	. 1	•		-	
POPULATION	95	98	101	104	107	111	114	118	122	127	131
CONSUMPTION OF MAIN CON	MMODITIES P	ER 1000 CA	PITA								
FUELWOOD AND CHARCDAL	221	224	218	221	215	216	211	203	197	189	183
IND. ROUNDWOOD	4	109	106	27	21	25	26	26	15	20	32
PANELS	0	0	4	4	4	4	5	5	6	5	5
VALUE ALL FOREST PRODU	CTS (USS)										
IMP.VALUE	361	404	343	251	251	251	251	251	300	633	451
EXPAVALUE	521	216	158	132	199	457	623	608	511	810	011
ROUNDWOOD	CUM										
PRODUCTION	33	34	34	28	29	30	30	30	35	33	38
EXP-QUANTITY EXP-VALUE	12	1 78	1 78	18	18	395	585	585	585	585	546
		-									
- FUELWOOD & CHARCOAL	CUH										<u>.</u>
PRODUCTION	21	22	22	23	23	24	24	24	24	24	24
- IND. ROUNDWOOD	CUM										
PRODUCTION	12	12	12	. 5	6	6	6	6	11	9	1:4
EXP-QUANTITY EXP-VALUE	12	1	1	78	78	395	585	585	585	585	546
SAWLOGS & VENEER	CUM									_	
PRODUCTION	12	12	12	5	6	6	6	6	11	9 5	14
EXP-QUANTITY EXP-VALUE	460	78	78	78	78	395	585	585	585	585	546
SAWMHOOD & SLEEPERS	CUM										
PRODUCTION	7	7	6	Z	2	2	2	2	2	2	4
IMP+QUANTITY IMP+VALUE	83	83	136	136	136	136	136	136	80	368	150
EXP.QUANTITY	1	1	1 80	0	1	0 62	0 43	0 23	1 226	225	131
EXPOVALUE		130		24				• -			
PANELS	CUM										
IMP.QUANTITY IMP.VALUE	0 278	0 321	0 201	0 115	0 115	0 115	1 115	1 115	1 220	1 265	1 301
		-									
- PLYNOOD	CUM										
IMP.QUANTITY IMP.VALUE	0 2 3 0 F	0 = 230F	0 92	0	0 0	0 0	0 0	0	0 141	0 163	0 211

.

VIET NAM	QUANTITY	QUANTITE	CANTIDA	0 1000			VALUE	VALEUR N	ALOR 100	0	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
	************	*********	********	*******	********	*********		*********		122161353	******
CONSUMPTION OF MAIN CO	MMOOITIES I	N VIET NAM									
FUELWOOD AND CHARCOAL	16632	16984	17344	17740	18154	16582	19019	19461	19905	20353	20802
IND. RUUNUMUUUU	2177	2204	2232	2000	2701	2732	2124	2780	2512	2879	2915
PANELS	1	71	\tilde{i}	16	28	30	18	18	18	18	18
PAPER AND PAPERBOARD	50	50	53	54	78	73	60	52	52	52	52
POPULATION	45424	46503	47607	48796	50028	51281	52526	53740	54915	56058	57181
CONSUMPTION OF MAIN CO	MMOOITIES PE	ER 1000 CA	PITA								
FUELWOOD AND CHARCOAL	366	365	364	364	36.3	362	362	362	362	36 3	364
IND. ROUNDWOOD	48	47	47	55	54	53	52	52	51	51	51
PANELS	12			11	1		10	10	10	10	10
PAPER AND PAPERBOARD	i	1	i	ĩ	2	i	ĩ	i	ĩ	ĩ	ĩ
VALUE ALL FOREST PRODU	CTS (USS)										
IMP.VALUE	4089	4089	3549	5149	7329	5576	6915	8669	8569	8669	8669
ROUNDWOOD	CUM										
DE ODUCITION	10307	10111	1065	10111							
FRODUCTION IMP.QUANTITY	18/6/	19166	19554	20384	20828	• ²¹²⁸⁸ 26	21725	22200	22676	23191 4T	23676
IMP.VALUE	689	689	689	689	1189	1209	1255	3409	3409	3409	3409
- FUELWOOD & CHARCOAL	CUM										
PRODUCTION	16632	16984	17344	17740	18154	18582	19019	19461	19905	20353	20802
- IND. ROUNDWOOD	CUM										
BRODUCT TON	31.00	21.02				770/	370/				
TMP_QUANTITY	2155	2182	2210	2644	2614	2706	2706	2739	2771	2838	2874
IMP.VALUE	689	689	689	689	1189	1209	1255	3409	3409	3409	3409
SAWLOGS & VENEER	CUM										
PRODUCTION	906	906	A0.9	1312	1312	1312	1312	1312	1312	1312	1312
IMP.QUANTITY	15	15	15	15	20	19	11	34	34	34	34
IMP . VALUE	380	380	380	380	880	900	946	3100	3100	3100	3100
SAWNNOOD & SLEEPERS	CUM										
PRODUCTION	520	520	520	520	520	520	520	520	520	520	520
IMP.QUANTITY IMP.VALUE	3 120	3 120	23 1420	30 2520	30 2520	30 2520	30 2520	30 2520	30 2520	30 2520	30 25 2 0
PANEL S	CUM										
PRODUCTION	7	7	7	16	7 8	30	10	10	1.0	10	1.0
IMP.QUANTITY IMP.VALUE	0	0 140	0 140	0 140	0 140	0 140	0 140	0 140	140	0 140	0 140
PLYW000	CUM										
DD ODUCT LON											
THP-QUANTITY IMP-VALUE	7F 0F 128F	7 F OF 128F	7F 0F 128F	0F 128F	28 0F 128F	30 OF 128F	18 OF 128F	18F 0 F 128F	18F OF 128F	18F 0T 128T	18F OF 128F
PULP FOR PAPER	AT										
PRODUCTION	15	15	15	15	15	15	15	บ่ร	15	15	15
IMP.VALUE	3090	3090	ŏ	ó	0	0	0	0	0	0	0
PAPER & PAPERBOARD	MT										
PRODUCTION	50	50	50	50	71	69	54	47	47	47	47
IMP.QUANTITY	0	0	3	4	7	4	6	5	5	5	5
INF.VALUE	50	50	1300	1800	3480	1707	3000	2600	2600	2600	2600

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note: unofficial figure F fao estimate T trend