WORKING PAPER

LONG-TERM ECONOMIC DEVELOPMENT
AND DEMAND FOR FOREST PRODUCTS

Anders Baudin

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WP-88-05

Publication Number 74 of the Project:
Ecologically Sustainable Development of the Biosphere

IIASA
International Institute
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FOREWORD

Within IIASA's Environment Program, the Project on Ecologically Sustainable Development of the Biosphere seeks to clarify the policy implications of long-term, large-scale interactions between the world's economy and its environment. The Project conducts its work through a variey of basic research efforts and applied case studies. One such case study, the Forest Study, has been underway since March 1986, and is focusing on the forest-decline problem in Europe. Objectives of the Forest Study are:

(a) to gain an objective view of the future development of forest decline attributed to air pollution and of the effects of this decline on the forest sector, international trade, and society in general;

(b) to build a number of alternative and consistent scenarios about the future decline and its effects; and

(c) to identify meaningful policy options, including institutional, technological and research/monitoring responses, that should be pursued to deal with these effects.

As in North America, most of the forests of Europe are dedicated at least partly to timber production for industrial purposes. Thus, wood raw materials are processed into wood and paper products to meet market demands for a wide range of goods. Many decisions that bear on the management of European forests are driven by market forces. These forces must be taken into account in any study of the long-term outlook for timber-production forests and the forest-products industry. In this vein, the Forest Study is using the FAO system of models for forecasting forest-products demand (consumption) throughout the world. Through a special study conducted for the Forest Study, Anders Baudin has adapted the FAO models specifically for use in generating scenarios for the long-term demand for forest products. This paper, one in a series of several Forest-Study background papers, looks into the structure of these models, presents detailed projections for one input scenario of economic development, and discusses the limitations of interpreting such forecasts in the context of the uncertainties inherent in the models.

R.E. Munn
Leader
Environment Program

PREFACE

The projection system for forest-products demand described in this paper originated in the FAO Outlook Studies of 1986 and has been further developed for use in the Forest Study of the Project on Ecologically Sustainable Development of the Biosphere within IIASA's Environment Program. Parts of the FAO Outlook projection system have been programmed for IBM-compatible personal computers and are available for use at IIASA in a user-friendly format (Baudin and Segerstedt, 1987). IIASA's objectives for this work were:

(i) to provide a sound simulation basis for forest-product demand scenarios that will be considered in a policy framework addressing the future of the European forest sector in the face of continued forest decline; and

(ii) to provide a venue for collaborators with the study to use IIASA facilities in generating and exploring alternative national and international forest-product demand scenarios.

I am grateful to Sten Nilsson and Peter Duinker, research scholars in the Forest Study, for their encouraging guidance, constructive discussions and valuable suggestions during the course of this work. I also wish to express my thanks to an anonymous reviewer of the paper for constructive criticism.

Anders Baudin
Umea, Sweden
January 1988

ABSTRACT

The FAO Outlook Studies were published in October 1986. Projections of the demand and supply of forest products were presented up to year 2000 by country and for aggregates of countries. The Outlook Studies were based on two alternative economic scenarios: the FAO and Chase-Manhattan GDP growth-rate projections. The effect of varying the input to the FAO model system was, however, modest and did not reflect the inherent uncertainty of long-term projections. As an alternative, a pessimistic economic scenario has been developed based on simple time-series extrapolations of GDP growth rates. This subjective/statistical scenario gives generally substantially lower growth rates than the main alternatives of the Outlook Studies. This paper presents the methods of making projections of the FAO model system and demonstrates the effect of varying the input economic growth rates. Furthermore, it stresses the uncertainty aspects of long-term projections of the demand for forest products.

CONTENTS

1. INTRODUCTION

The objective of the recent FAO forest-sector "outlook" studies was "to establish a uniform, unbiased and international view of requirements, and an international perspective of the forest sector's long-term development" (FAO, 1986). Long-term projections of world demand for paper, sawnwood and wood-based panels are a basic input to policy formation and strategic decision-making for the forest industry, international organizations, and governments.

This paper will give a summary of the contents of the FAO models for projection of forest-products demand, and will discuss alternative economic scenarios that can be used as input to the model system for projection (simulation) purposes. These simulations will serve as a framework for a discussion about the future needs of forest products which can be contrasted to available fibre (wood) resources and future industrial capacity.

The uncertainty of long-term projections, such as those of the FAO Outlook Studies, consists of two parts:

(i) a model (or model system); and

(ii) basic input assumptions about exogenous variables of the model system.

Both parts contribute to the uncertainty in projections:

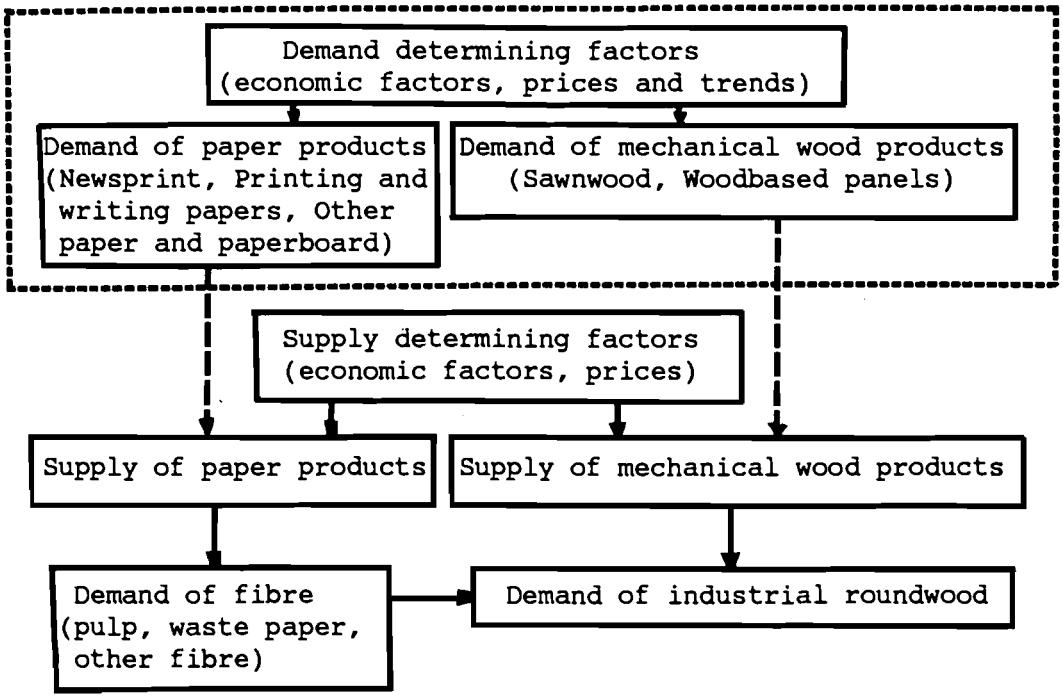
(i) the model in terms of an error component that summarizes incomplete knowledge, model assumptions and limitations, and data imperfections;

(ii) the input error in terms of differences between the assumptions and the outcomes of the future values of the exogenous variables.

According to this view, the concept "projection" is synonymous to "simulation", i.e., a projection is a set of answers to 'what-if' questions based on a given (or accepted) model system. In this paper the effect of different exogenous assumptions (economic scenarios) on the FAO demand models of forest products is discussed. Thus, here the model is considered as given and the discussion is focused on the effect of different economic scenarios (rather than on the error term of the model).

For each of five forest products, the FAO Outlook model system (Figure 1) consists of a demand and a supply equation (FAO, 1987b). In the supply equations, the explanatory factors are essentially gross fixed capital formation, product prices and production costs (Martin et al., 1985). Projections of supply are used as input to the fibre demand models to obtain projections of fibre demand, e.g. the demand of roundwood. In this paper, only the demand equations of forest products are considered (also, see Baudin and Lundberg, 1987). The five forest products considered are:

(i) newsprint;
(ii) printing and writing papers;
(iii) other paper and paperboard;
(iv) sawnwood and sleepers; and
(v) wood-based panels.



Note: The dotted link between demand and supply represents the restriction imposed on the supply projections; world supply projections are equal to world demand projections.

Figure 1. The FAO Outlook model system. (For the Forest Study of the Biosphere Project, only the upper part (dotted) is applied).

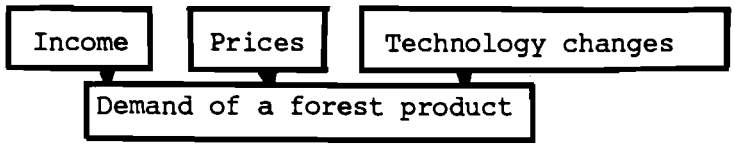


Figure 2. A model structure for the demand of a forest product.

2. SUMMARY OF THE STRUCTURE OF THE DEMAND MODELS

The FAO demand models for forest products have be structured from production theory (Figure 2). The indicator of income is real gross domestic product (GDP) transformed to US dollars at 1980 exchange rates. The price variable is real unit border values for the largest trade flow. An additional time trend factor is included as a proxy for 'other factors' such as technology change and product substitution.

A demand model should include all (end-use) factors that are important for the determination of demand for a forest product. Here, GDP has been used as an explanatory factor for all products even though it can be argued that other factors such as construction (for sawnwood and panels), private consumption expenditure (for newsprint) and index of manufacturing production (for other paper) would be better indicators. The argument for using GDP as an exogenous (explanatory) variable is lack of an international data set on relevant end-use factors. In fact, in a recent study on wood-based panels (FAO, 1987a) a data set that contains gross value added in construction as an explanatory variable was used instead of GDP. An argument in favor of using GDP as an explanatory variable in a model that may serve as an instrument for simulations is that official forecasts of GDP are available, while official forecasts of other explanatory variables are generally not available on a worldwide basis. No reliable and comparable international data set reflecting substitution exists today. Consequently, the trend factor also simulates effects of substitution.

A log-linear, time-series, cross-section model was applied:

$$\ln CONS_{it} = \alpha + \Sigma\alpha_i D_i + \beta_0 \ln GDP_{it} + \Sigma\beta_j D_j \ln GDP_{it} + \tau \ln P_{it} + \\ + \delta_0 D + \delta_1 t + \delta_2 Dt + u_{it} \qquad (1)$$

where:

$CONS_{it}$ = apparent consumption (= production + imports - exports) in country i at time period t;

GDP_{it} = real gross domestic product at 1980 dollar exchange rates;

D_i = country-specific dummy variables defined as one for country i and zero for the other countries(i=1,2,...,N-1);

P_{it} = real unit border values for the largest trade flow for country no i at 1980 dollar exchange rates;

t = time index (t=1 for 1961, t=2 for 1962, etc.);

D = a trend shift dummy variable defined as zero before 1973 and one after 1973; and

ln = natural logarithms.

The coefficient β_0 is an income elasticity and τ a price elasticity.

The dummies, denoted D_j (j=1,2,..5), are included to reflect the idea that countries with different per-capita income may have different income elasticities. USA and Japan have been taken separately because of their

Table 1. Income classes and elasticities used in the FAO demand projection system for forest products.

Income Class	Per-capita GDP in 1981	Income Elasticity
1	less than 2000 USD	β_0
2	2000 - 4000	$\beta_0 + \beta_1$
3	4000 - 9000	$\beta_0 + \beta_2$
4	more than 9000 USD	$\beta_0 + \beta_3$
5	USA	$\beta_0 + \beta_4$
6	Japan	$\beta_0 + \beta_5$

Table 2. Equations used to calculate consumption growth rates (indices i and t are omitted).

1981 GDP per capita in 1980 US$	NEWSPRINT	PRINTING and WRITING PAPER	OTHER PAPER
under 2000	RC = .82(RGDP)+.6	RC = .82(RGDP)+1.9	RC = 1.27(RGDP)-1.3
2000 - 4000	RC = .58(RGDP)+.6	RC = .74(RGDP)+1.9	RC = 1.27(RGDP)-1.3
4000 - 9000	RC = .59(RGDP)+.6	RC = .69(RGDP)+1.9	RC = 1.33(RGDP)-1.3
9000 & over	RC = .68(RGDP)+.6	RC = .91(RGDP)+1.9	RC = .75(RGDP)-1.3
USA	RC = .53(RGDP)+.6	RC = .40(RGDP)+1.9	RC - .71(RGDP)-1.3
Japan	RC = .73(RGDP)+.6	RC = .81(RGDP)+1.9	RC = .85(RGDP)-1.3

	WOODBASED PANELS	SAWNWOOD
under 2000	RC = 1.22(RGDP)+1.53	RC = .93(RGDP)-.8
2000 - 4000	RC = 1.15(RGDP)+1.53	RC = .56(RGDP)-.8
4000 - 9000	RC = .97(RGDP)+1.53	RC = .48(RGDP)-.8
9000 & over	RC = .67(RGDP)+1.53	RC = .75(RGDP)-.8
USA	RC = -.03(RGDP)+1.53	RC = .55(RGDP)-.8
Japan	RC = .72(RGDP)+1.53	RC = .31(RGDP)-.8

Note: RC and RGDP here denote the consumption and GDP growth rates, respectively, in per cent.

large contribution to world consumption of forest products. The income classes and income elasticities used in the models are defined in Table 1.

The trend factor includes effects that the other variables of the equation do not reflect, such as changing technology and product substitution. The time trend slope after 1973 is $\delta_1 + \delta_2$ [1]. Substitution is also covered by the trend factor, the reason for not analysing the effect of substitution being lack of reliable international data.

The models were estimated on annual data for forest-products consumption for all major consuming countries for the period 1961-1984. To reduce measurement errors, which may be expected to be proportionally larger for small figures, countries with consumption in 1982 less than 20 000 MT for newsprint, 50 000 MT for printing and writing papers, 100 000 MT for other paper and paperboard, 400 000 CUM for sawnwood and 100 000 CUM for wood-based panels were excluded from the analysis. The number of countries included in the sample varies between products: 51 for newsprint, 49 for printing and writing papers, 43 for other paper and paperboard, and 52 for sawnwood and for wood-based panels. Even if the model parameters were estimated on a sample of countries, all countries were included in the projections.

3. THE FORECASTING PROCEDURE

The process by which a projection is obtained follows a three-step procedure (Baudin, 1985):

1. Calculation of the growth rates of consumption according to the basic definition of elasticities:

$$RC_{it} = \beta_i \, RGDP_{it} + \delta_1 + \delta_2 \qquad (2)^2$$

where:

RC_{it} = growth rate of consumption from time period t-1 to t in country i; and

$RGDP_{it}$ = growth rate of real gross domestic product from time period t-1 to t in country i.

Here, β_i is the income elasticity associated with country i and $\delta_1 + \delta_2$ is the estimated trend growth after 1973.

All estimates are obtained from the pooled time-series cross-section model (Equation (1)). In Equation (2), the price effect is deleted for two reasons:

(i) the price elasticities are low; and

(ii) historically, the annual real price changes were very modest, the only main exception being the period of the first oil crisis (FAO, 1985).

The price effect could easily be included in the projection system again if the price effect were expected to be important (e.g., at times of fibre and wood raw material scarcity). This is also of interest if the demand and supply equations were estimated simultaneously. Price would

Table 3. Average annual growth rates (%) of total GDP at 1980 prices for the world and some important countries. From 1985 on, the FAO GDP projections are given.

REGION OR COUNTRY	PERIOD							
	1961-1964	1965-1969	1970-1974	1975-1979	1980-1984	1985-1989	1990-1994	1995-1999
WORLD	5.5	5.2	3.8	3.8	1.9	3.4	4.8	3.8
USA	5.2	2.9	2.4	3.3	2.6	2.9	2.7	2.7
Japan	8.8	11.2	4.6	5.0	4.1	4.8	4.8	4.8
Germany	4.9	4.4	2.2	3.4	1.1	2.1	2.9	3.0
France	5.8	5.8	3.9	3.0	1.4	2.5	3.8	3.8

Table 4. Average annual growth rate of real GDP in the USA.

5-Year Period	Average Annual GDP Growth Rate
1961-1964	5.2
1965-1969	2.9
1970-1974	2.4
1975-1979	3.3
1980-1984	2.6

then be considered as an endogenous variable which would be projected simultaneously with consumption and production. One first step in that direction has already been taken in updating of the wood-based panels' model of the FAO Outlook Studies (FAO, 1987a).

The growth-rate equations are presented in Table 2, where estimated income elasticities are the constants multiplied by the growth rate of GDP (RGDP) and the additional constant is the estimated trend factor[3].

2. Calculation of a base-year consumption as a five-term average of the last five years:

$$CONS_{i,BASE82} = (CONS_{i,80} + CONS_{i,81} + \ldots + CONS_{i,84})/5 \qquad (3)$$

The base-year consumption (at 1982) is the starting point of the projections upon which growth rates are applied. By taking the five-year average, the effect of business cycles on the long-term projection is reduced.

3. Calculation of the consumption projection in 1990:

$$CONS_{i,90} = CONS_{i,BASE82}(1 + 8*RC_{i,90}) \qquad (4)$$

where $RC_{i,90}$ = annual average growth rate of consumption from 1982 to 1990 for country i calculated in step 1.

For 1995, the consumption projection is:

$$CONS_{i,95} = CONS_{i,90}(1 + 5*RC_{i,95}) =$$

$$= CONS_{i,BASE82}(1 + 8*RC_{i,90})(1 + 5*RC_{i,95}) \qquad (5)$$

The projections for subsequent years are obtained similarly. Consumption figures for regions are obtained by adding country projections and from these sums the growth rates for regions are calculated.

4. GDP GROWTH-RATE SCENARIOS

The FAO Outlook Studies have been discussed in a series of meetings with industry representatives where criticism has focused on the GDP growth-rate scenarios. One reason for a disagreement with the FAO projections of GDP is that they project growth rates in the 1990s to return to rather high levels, which was considered unrealistic (FAO, 1987b).

To illustrate the situation, let us examine annual growth rates of real GDP given over five-year periods (Table 3) for the world and a sample of important countries (FAO, 1986). As a result of the objections to the FAO GDP scenarios, it was decided in the FAO studies to use an alternative GDP scenario: the Chase-Manhattan economic scenario. Although the Chase-Manhattan scenario generally gives lower growth-rate estimates than the FAO scenario, they have also been considered high.

For the FAO Outlook Studies, these two alternative economic scenarios have been used for projection of forest-product demand up to year 2000. For countries not included in the Chase-Manhattan scenario, the FAO GDP projections have been used. This does not lead to large inconsistencies in

the projections since the amount of forest products consumed in these countries is only marginal in comparison with, e.g., members of the Organization for Economic Cooperation and Development (OECD). The GDP growth-rate projections are given in Appendix 1.

To evaluate the realism of these projections it would be necessary to make a detailed study of the underlying models from which the GDP scenarios have been obtained. The input assumptions for the exogenous variables (time-series predictions and/or expert opinions) which are necessary for producing the economic scenarios would also have to be evaluated. These input assumptions can, of course, be modified to produce alternative scenarios. Such an exercise is time consuming, requiring access to the models on a computer, but has not been undertaken in this study.

As an alternative to the FAO and Chase-Manhattan GDP projections, a "statistical" scenario was constructed on the basis of time-series projections of GDP growth rates from 1960 on. This scenario should be regarded merely as one example of alternative economic scenarios. In this alternative, growth-rate projections have been obtained by a combination of statistical and subjective methods. The scenario is based on the observation that many countries currently have a decreasing rate of growth of GDP. For instance, in Europe, the annual average decline of the growth of rate of GDP is 0.4% in 1961-85, and the variation across countries around that number is modest. The procedure used here was the following:

1. The average growth-rate change over 5-year periods from 1961-65 to 1980-1985 was calculated for each country. The growth rate of the last period was used as a starting point for the projections of the growth rates. For an example of this procedure, let us examine calculations for the USA (Table 4). The average annual increase of GDP growth-rates from 1961 to 1980 is (2.6 - 5.2)/4 = -0.6. The projections are then 2.0% (= 2.6-0.6) for 1985 to 1990, 1.4% for 1990-95, and 0.8% for 1995-2000 [4].

2. The above procedure was occasionally supplemented by subjective adjustments. For example, for France the five-year average annual growth rate for 1980-85 is 1.4%. The average decrease over one five-year period is 1.1%. This would give a negative future GDP growth in France which is hard to justify. Instead, the average decline of West Europe was used, leading to future growth rates of 1.0%, 0.6% and 0.2% for the periods 1985-90, 1990-95 and 1995-2000, respectively .

   Two kinds of subjective adjustments have been used:

   (i) when the decline of GDP was extreme, the average decline (or growth) of the geographic region to which the country belongs was used (for France the average decline in West Europe); and

   (ii) when the average annual GDP growth rate of the last period (1980-85) was exceptionally low, a three-period average was used and the projection started from the middle period (1975-80).

   These adjustments were used only occasionally. For the OECD countries, the subjective adjustments were carried out for Japan, France, Germany, Greece, Netherlands, Spain and Switzerland (i.e., 7 countries out of 21).

The resulting projections do not always give lower future growth rates; for a number of developing countries the growth rates are increasing. The main difference from the FAO and Chase-Manhattan scenarios is the decreasing growth rates of the developed countries (Appendix 1).

Alternative time-series methods for generating additional economic-development scenarios can be suggested (e.g. Granger, 1980):

(i) an exponential curve for the growth rates that can be fitted to each country individually or as time series cross section models; and

(ii) ARIMA-models on original growth-rate numbers or log-transformed growth-rates, individually for each country.

5. PROJECTIONS OF FOREST-PRODUCTS CONSUMPTION

Projections from use of the FAO and Chase-Manhattan GDP scenarios are given in FAO (1986) up to year 2000. The subjective/ statistical GDP scenario was used as input to the model to generate an alternative set of consumption projections (Appendix 2). For comparison, world consumption figures are presented for all three scenarios in Table 5 and Figures 3-7.

The GDP-scenarios which are used as an input to the demand models represent a very wide range of possible future GDP growth rates. The FAO GDP projections represent an optimistic version while the subjective/ statistical GDP projections represent a pessimistic view. Any alternative falling outside this range may at this point in time be considered unlikely to occur. Consequently, the demand projections cover a very wide range of possible future outcomes. For year 2000 the subjective/ statistical approach gives 17-27% lower projections than the FAO alternative. This range can be compared to the stochastic error of the model. For the world the width of the 90% projection confidence limits range between 7.5% and 26.1% as fractions of the projection levels (FAO, 1986). The two sources of projection errors, taken separately, are large and if the two sources should be brought together the total error would increase even more. The user of the FAO projection system is thus facing a larger uncertainty than the two alternatives of the FAO Outlook Studies indicate.

To illustrate the situation, let us consider newsprint and let us further assume that a new large newsprint machine produces 200 000 metric tons annually. The size of the uncertainty of world demand projections is 4 million tons around 1995 and 8 million tons for year 2000 (Table 5). This means that the differences between the high and low alternatives represent the production of 20 and 40 large newsprint machines for year 1995 and 2000, respectively.

The emphasis of the FAO Outlook Studies was in building the model system. Some considerations have been devoted to the error of the model in terms of confidence limits of the projections and the effect of varying the input projections (sensitivity analysis). Still there is risk that the reader of the FAO Outlook Studies does not bear this in mind. The range of alternative projections up to year 2000 may give a false impression of little uncertainty, and does not reflect the size of the two main sources of errors of projections. The pessimistic subjective/statistical scenario is constructed to cast light on the inherent uncertainties of the model and input GDP projections and to encourage the use of other alternative economic scenarios as input to the model system.

Table 5. A comparison of world consumption projections based on FAO, Chase-Manhattan, and the subjective/statistical GDP scenarios.

PRODUCT GROUP	GDP SCENARIO	PROJECTED CONSUMPTION			AVERAGE ANNUAL GROWTH RATES		
		YEAR			PERIOD		
		1990	1995	2000	1982-1989	1990-1994	1995-1999
		1000 MT			PERCENTAGE		
NEWSPRINT	FAO	34,155	39,796	46,564	2.8	3.1	3.2
	CHASE-MANH	34,266	39,316	45,140	2.9	2.8	2.8
	SUBJ/STAT	32,415	35,626	38,686	2.2	1.9	1.7
PRINTING	FAO	60,165	75,581	95,446	4.2	4.7	4.8
AND	CHASE-MANH	59,955	73,652	90,639	4.2	4.2	4.2
WRITING	SUBJ/STAT	56,705	66,349	76,708	3.4	3.2	2.9
OTHER	FAO	121,630	139,424	161,887	2.1	2.8	3.0
PAPER AND	CHASE-MAN	119,783	132,984	148,820	1.9	2.1	2.3
PAPERBOARD	SUBJ/STAT	111,803	116,115	118,883	1.0	0.8	0.5
		1000 CUM					
SAWNWOOD	FAO	497,232	550,353	613,276	1.6	2.1	2.2
AND	CHASE-MAN	492,920	532,478	578,420	1.5	1.6	1.7
SLEEPERS	SUBJ/STAT	469,640	485,683	497,115	0.9	0.7	0.5
WOOD-	FAO	139,827	178,515	231,836	4.1	5.0	5.4
BASED	CHASE-MAN	133,984	163,670	202,282	3.6	4.1	4.3
PANELS	SUBJ/STAT	130,807	152,449	176,562	3.2	3.1	3.0

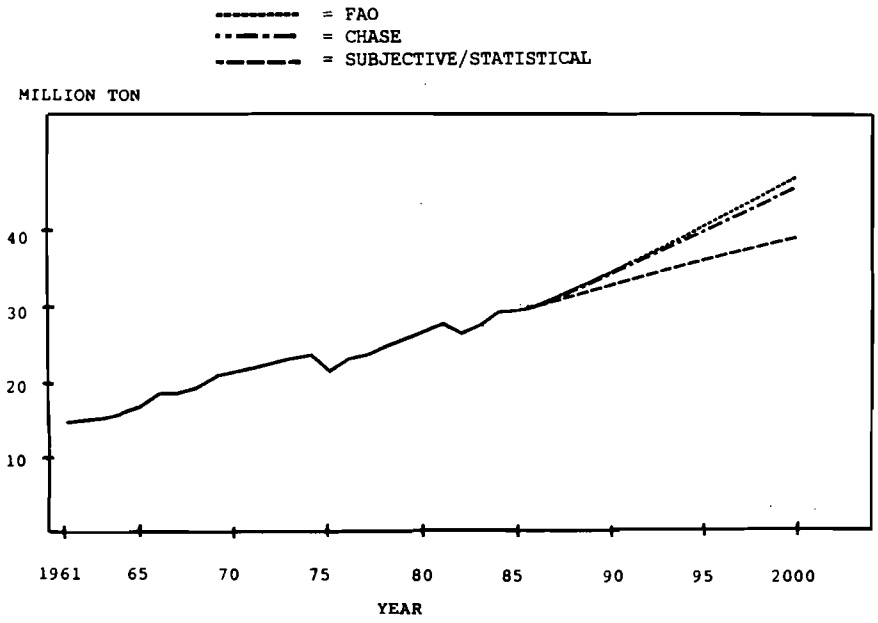


Figure 3. World consumption of newsprint from 1961 to 1984, with projections to 2000.

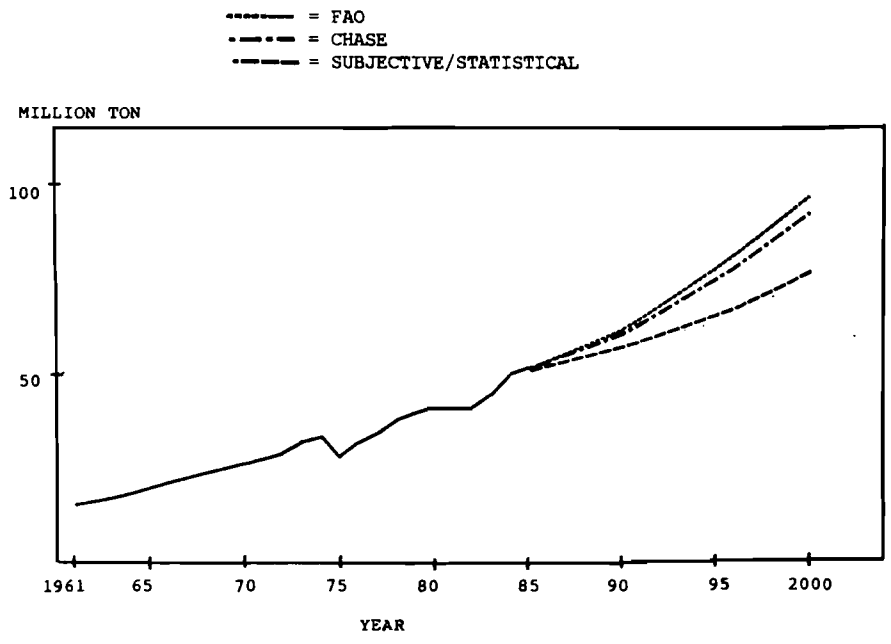


Figure 4. World consumption of printing and writing papers from 1961 to 1984, with projections to 2000.

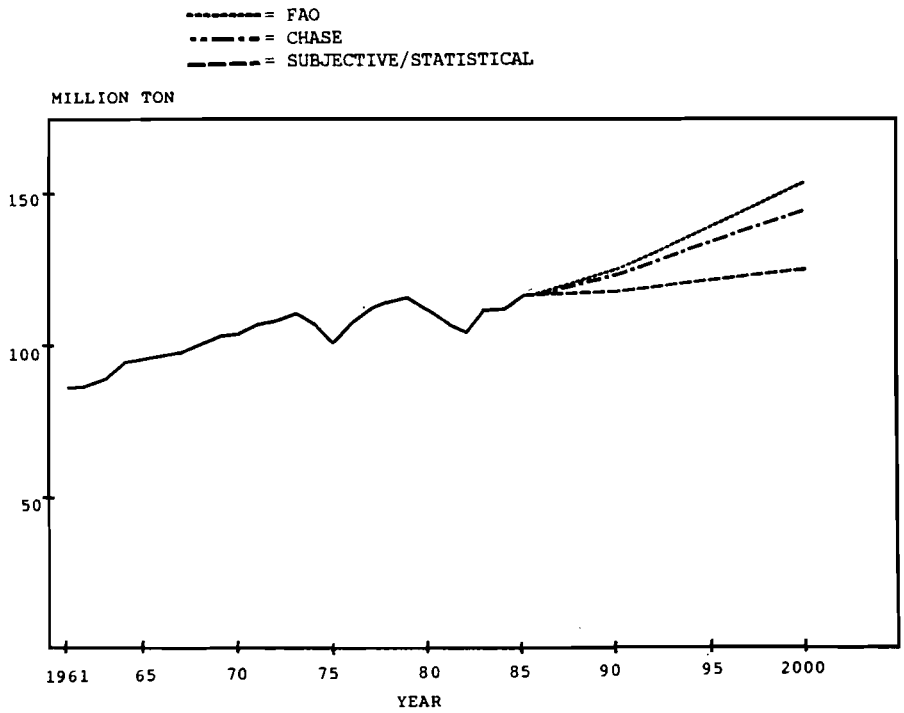


Figure 5. World consumption of other paper and paperboard from 1961 to 1984, with projections to 2000.

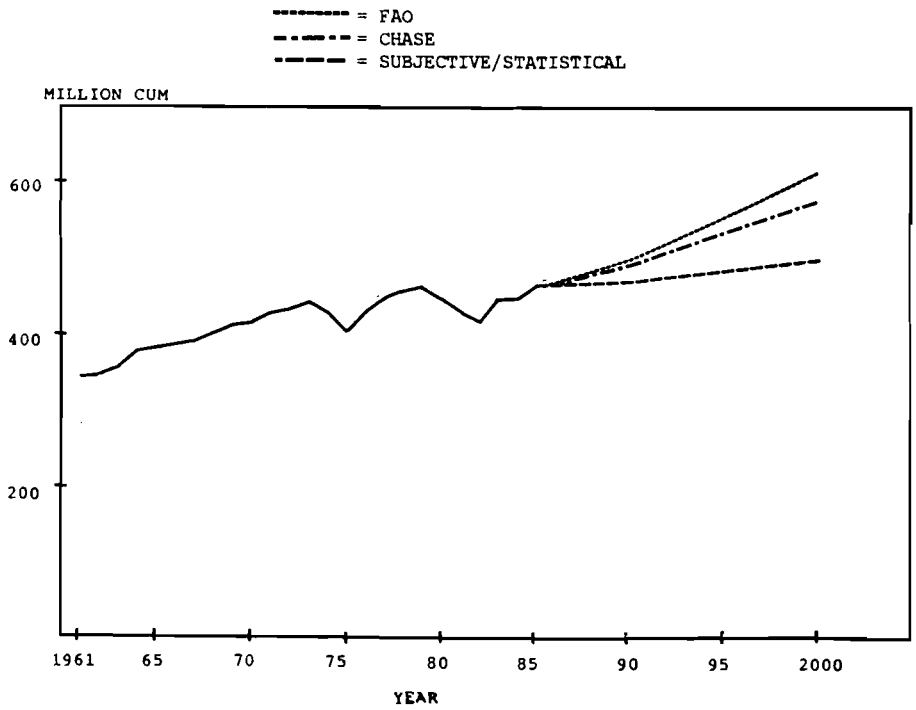


Figure 6. World consumption of sawnwood and sleepers from 1961 to 1984, with projections to 2000.

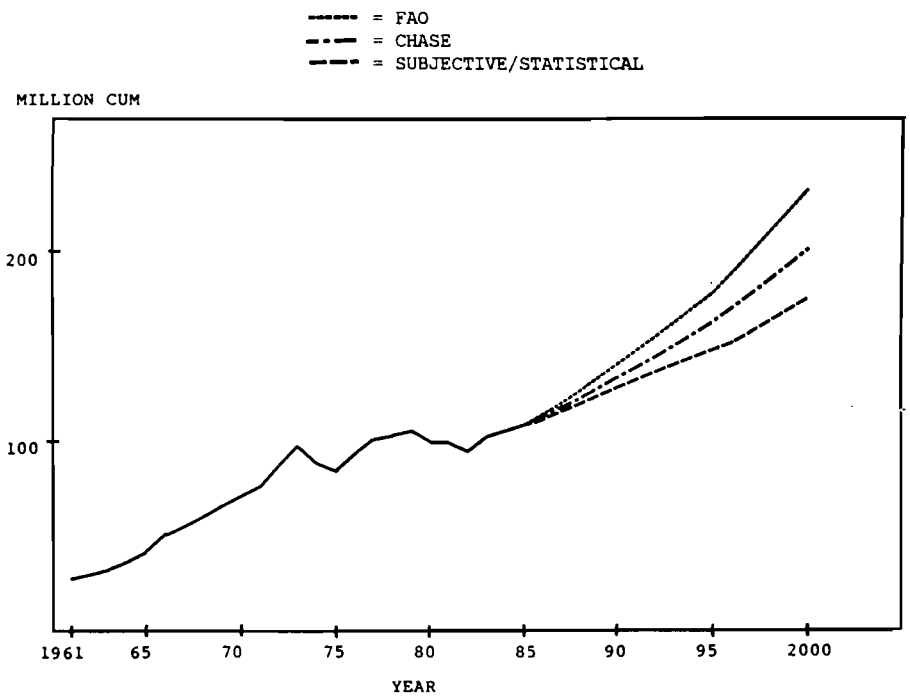


Figure 7. World consumption of wood-based panels from 1961 to 1984, with projections to 2000.

Comparing across product groups, the model's projections suggest that the most substantial growth of world demand in relative terms will occur in printing/writing papers and wood-based panels[5] while the growth rates of the demand of sawnwood are smaller than for the other products.

6. CONCLUSIONS

A projection is based on a model and input assumptions. In this paper the effect of varying the input to the FAO model system for demand of forest products is demonstrated. The other aspect of uncertainty is the stochastic error of the model, which can be examined in terms of standard error of the model, variance of parameter estimates, or confidence limits for the projections (Baudin, 1985). It is shown that the range of projections based on three alternative inputs is comparable in size to the stochastic prediction error of the model.

The variance of the parameter estimates can be regarded as due either to random effects or due to more systematic effects. If, for instance, there is a sytematic structural change during the historical period and the model is estimated without considering it, the parameters of the model have larger variances than if the structural change had not occurred. The present FAO model system is based on the assumption that the parameters are stable, i.e. structural change is assumed not to have occurred in the past nor is it expected to occur in the future. This restriction can of course be relaxed. One possible further development of the estimation procedure and the projection process is to include models for parameter changes. The drift, or sudden shifts, of parameter estimates over time could be projected as well as exogenous variables of the model. The model parameters are estimated under the assumption of a stable causal relationship between the variables of the system and in the projections this assumption also prevails.

The model system discussed here concentrates on the demand relationship of the system (Figure 1). The supply equation has been estimated independently of the demand equation. A joint estimation of the parameters of the demand and supply equations might give different parameter estimates[6]. One further advantage is that by doing a joint estimation, consumption, production and price can be projected simultaneously.

Furthermore, models for the demand of fibre requirement can be included. This approach would have the benefit of taking notice of the possibility of running into scarcity in the wood-supply side, which would give a more dramatic price development than in the historical period. This further development should be pursued. The present projection system does not consider any effects of wood scarcity (e.g. caused by forest decline) or effects on consumption due to increased prices.

Another limitation of the projection system is the aggregate nature of the products. A more detailed level of product definitions is necessary, especially for such a big bulk of products as "Other paper". Here, detailed studies such as Baudin and Lundberg (1986), where the OECD-countries are analysed for more detailed product definition, can be used to "distribute" the consumption of different products within a broad product category. It is possible to use this kind of study to obtain consumption projections with a finer product definition.

7. NOTES

1. Different functional forms of the trend factor as well as discontinuities have been tested. The (log) linear specification, however, seems to be adequate and a significant structural shift in 1973 was found only for 'Other Paper'.

2. For all products except other paper and paperboard, δ_2 is equal to zero.

3. A discussion of the stability of the elasticities is given by Buongiorno (1985) and the stochastic uncertainty of the projections by Baudin (1985). Compared to a similar study (Buongiorno, 1978) based on data from 1963 to 1973, the estimated elasticities of the FAO model are numerically slightly lower.

4. GDP growth rate projections based on a linear trend model are 1.8%, 1.4%, 0.9% respectively, and projections based on an exponential trend model are 2.2%, 1.9% and 1.7% respectively.

5. In a recent report (FAO, 1987a), however, the projected growth rates of the world demand for wood-based panels have been substantially revised (i.e., 3.0% annually between 1990 and 2000).

6. In a recent study (FAO, 1987a) a joint estimation of the demand and supply equation for wood-based panels demonstrated that the link between demand and supply is rather weak; the income elasticities change only marginally, while there is a (minor) difference in the price elasticity of the demand model when compared to the single equation estimates.

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APPENDIX I - THE SUBJECTIVE/STATISTICAL GDP-GROWTH-RATE SCENARIO

Table A1. The subjective/statistical GDP-growth-rate scenario. Figures are average annual percentages.

COUNTRY	1982 to 1989	1990 to 1994	1995 to 1999
AFGHANISTAN	2.0	2.0	2.0
ALBANIA	2.8	1.6	0.4
ALGERIA	3.1	3.4	3.7
ANGOLA	3.3	3.4	3.5
ARGENTINA	0.7	0.3	0.0
AUSTRALIA	1.8	1.0	0.2
AUSTRIA	1.7	1.3	0.9
BAHAMAS	3.4	2.8	2.2
BAHRAIN	3.4	2.9	2.4
BANGLADESH	3.0	3.0	3.0
BARBADOS	3.4	2.8	2.2
BELGIUM-LUX	0.9	0.5	0.1
BELIZE	3.4	2.8	2.2
BENIN	3.3	3.4	3.5
BHUTAN	3.5	3.0	2.5
BOLIVIA	0.0	0.0	0.0
BOTSWANA	9.1	10.2	11.3
BRAZIL	2.1	1.9	1.7
BRUNEI	4.5	4.0	3.5
BULGARIA	3.2	2.3	1.4
BURMA	2.5	2.0	1.5
BURUNDI	4.8	5.6	6.4
CAMEROON	4.5	4.7	4.9
CANADA	1.5	0.6	0.0
CAP VERDE	5.1	5.9	6.7
CENTRAL AF REP	2.0	2.5	3.0
CHAD	3.0	3.5	4.0
CHILE	1.0	0.5	0.0
CHINA TAIWAN	4.8	3.8	2.8
COLOMBIA	2.5	2.1	1.7
CONGO	3.7	2.8	1.9
COSTA RICA	4.4	3.8	3.2
CUBA	3.4	2.8	2.2
CYPRUS	3.3	2.7	2.1
CZECHOSLOVAKIA	1.1	1.2	1.3
DENMARK	0.8	0.4	0.0
DJIBOUTI	3.9	2.9	1.9
DOMINICA	1.4	0.8	0.2
DOMINICAN REP	3.4	2.8	2.2
ECUADOR	1.5	0.9	0.3
EGYPT	6.4	5.7	5.0
EL SALVADOR	0.7	0.3	0.0
EQUATORIAL GUINEA	2.3	2.3	2.3
ETHIOPIA	2.7	2.6	2.5
FIJI	3.0	3.0	3.0
FINLAND	2.2	1.8	1.4
FRANCE	1.0	0.6	0.2
FRENCH GUIANA	3.4	2.8	2.2
FRENCH POLYNESIA	4.2	4.5	4.5
GABON	3.4	2.9	2.4
GAMBIA	3.6	3.4	3.2

Table A1 (continued).

COUNTRY	1982 to 1989	1990 to 1994	1995 to 1999
GERMAN DR	4.5	4.6	4.7
GERMANY FR	1.4	1.0	0.6
GHANA	0.4	0.3	0.2
GREECE	2.4	2.0	1.6
GUADELOUPE	4.4	3.8	3.2
GUATEMALA	4.4	3.8	3.2
GUINEA	2.5	2.5	2.5
GUINEA BISSAU	1.8	1.6	1.4
GUYANA	2.4	2.3	2.2
HAITI	2.4	1.8	1.2
HONDURAS	2.9	2.3	1.7
HONG KONG	5.0	4.5	4.0
HUNGARY	1.4	0.9	0.4
ICELAND	0.7	0.4	0.0
INDIA	5.0	5.5	6.0
INDONESIA	5.3	6.2	7.1
IRAN	0.8	0.3	0.0
IRAQ	3.6	3.1	2.6
IRELAND	1.0	0.6	0.2
ISRAEL	2.5	2.0	1.5
ITALY	1.0	0.6	0.2
JAMAICA	1.4	0.8	0.2
JAPAN	3.1	2.7	2.3
JORDAN	6.1	5.6	5.1
KAMPUCHEA DEM	2.7	2.4	2.1
KENYA	3.2	2.8	2.4
KINGD OF SAUDI ARA	0.0	0.0	0.0
KOREA DPR	6.0	5.5	5.0
KUWAIT	0.0	0.0	0.0
LAOS	4.5	5.0	5.5
LEBANON	0.0	0.0	0.0
LIBERIA	2.3	2.1	1.9
LIBYA	1.6	1.4	1.2
MACAU	4.8	4.6	4.4
MADAGASCAR	3.4	4.3	5.2
MALAWI	7.0	7.0	7.0
MALAYSIA	4.4	3.9	3.4
MALI	3.4	3.4	3.4
MALTA	3.3	3.3	3.3
MARTINIQUE	2.9	2.3	1.7
MAURITANIA	3.5	2.9	2.3
MEXICO	2.0	1.4	0.8
MONGOLIA	2.5	2.5	2.5
MOROCCO	2.9	2.7	2.5
MOZAMBIQUE	2.5	2.2	1.9
NEPAL	2.7	2.9	3.1
NETHERLANDS	1.5	1.1	0.7
NETHERLANDS ANTILL	3.9	3.3	2.7
NEW CALEDONIA	1.3	1.3	1.3
NEW ZEALAND	1.3	0.9	0.5
NICARAGUA	1.4	0.8	0.2
NIGER	5.0	4.6	4.2

Table A1 (continued).

COUNTRY	1982 to 1989	1990 to 1994	1995 to 1999
NIGERIA	3.8	3.6	3.4
NORWAY	3.5	3.2	2.9
OMAN	0.0	0.0	0.0
PAKISTAN	3.8	2.3	0.8
PANAMA	3.4	2.8	2.2
PAPUA NEW GUINEA	3.0	3.0	3.0
PARAGUAY	2.4	1.9	1.4
PERU	2.3	1.5	0.7
PHILIPPINES	2.1	1.6	1.1
POLAND	0.0	0.0	0.0
PORTUGAL	3.3	2.7	2.1
QATAR	0.0	0.0	0.0
REP OF KOREA	6.2	6.1	6.0
REUNION	4.8	4.6	4.4
ROMANIA	3.0	1.8	0.6
RWANDA	4.6	4.4	4.2
SAMOA	2.0	2.0	2.0
SAO TOME & PRINCIP	2.9	2.8	2.7
SENEGAL	1.9	1.7	1.5
SIERRA LEONE	1.1	0.9	0.7
SINGAPORE	7.7	8.2	8.7
SOLOMON ISLAND	2.0	2.0	2.0
SOMALIA	3.2	4.2	5.2
SOUTH AFRICA	1.9	1.1	0.3
SPAIN	1.6	1.2	0.8
SRI LANKA	4.0	3.7	3.4
SUDAN	6.3	7.4	8.5
SURINAME	4.0	3.5	3.0
SWAZILAND	6.8	6.6	6.4
SWEDEN	1.5	0.8	0.0
SWITZERLAND	1.0	0.6	0.2
SYRIA	4.2	3.2	2.2
TANZANIA	1.9	1.7	1.5
THAILAND	5.7	5.3	4.7
TOGO	1.3	1.1	0.9
TRINIDAD & TOBAGO	4.8	4.2	3.6
TUNISIA	3.5	3.1	2.7
TURKEY	3.9	3.6	3.3
UGANDA	2.3	2.1	1.9
UNITED KINGDOM	2.5	2.4	2.3
UPPER VOLTA	2.2	2.4	2.6
URUGUAY	0.8	0.4	0.0
USA	2.0	1.4	0.8
USSR	2.3	1.5	0.7
VENEZUELA	0.7	0.3	0.0
VIET NAM	1.8	0.9	0.0
YEMEN DR	4.3	4.6	4.9
YUGOSLAVIA	3.1	2.7	2.3
ZAIRE	1.5	1.3	1.1
ZAMBIA	1.7	1.5	1.3
ZIMBABWE	1.7	1.5	1.3

APPENDIX II - PROJECTIONS BASED ON THE SUBJECTIVE/STATISTICAL SCENARIO

Table A2. Projections of newsprint consumption based on the subjective/ statistical scenario.

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CANADA	961.76	1093.71	1149.95	1184.87	1.62	1.01	0.60
UNITED STATES	10867.62	12397.53	13252.04	13944.58	1.66	1.34	1.02
N AMERICA	11829.38	13491.24	14401.99	15129.45	1.66	1.32	0.99
AUSTRIA	159.82	183.70	197.74	210.02	1.76	1.48	1.21
BELGIUM-LUX	197.88	217.90	228.34	236.07	1.21	0.94	0.67
DENMARK	161.28	176.65	184.48	190.08	1.14	0.87	0.60
FINLAND	161.82	191.03	209.10	225.84	2.10	1.82	1.55
FRANCE	586.58	649.41	682.80	708.30	1.28	1.01	0.74
GERMANY FR	1350.68	1527.78	1628.09	1711.82	1.55	1.28	1.01
GREECE	61.00	71.43	77.94	84.08	1.99	1.76	1.53
ICELAND	4.32	4.71	4.91	5.06	1.08	0.87	0.60
IRELAND	55.98	61.54	64.53	66.88	1.19	0.95	0.72
ITALY	338.00	371.55	389.61	403.80	1.19	0.95	0.72
MALTA	0.70	0.85	0.97	1.09	2.51	2.51	2.51
NETHERLANDS	419.14	476.64	509.65	537.66	1.62	1.35	1.08
NORWAY	115.78	146.44	167.92	190.66	2.98	2.78	2.57
PORTUGAL	38.36	46.79	52.08	56.99	2.51	2.17	1.82
SPAIN	218.34	246.81	263.38	277.81	1.54	1.31	1.07
SWEDEN	289.82	329.58	348.87	359.46	1.62	1.14	0.60
SWITZERLAND	215.60	238.69	250.97	260.34	1.28	1.01	0.74
UNITED KINGDOM	1391.90	1640.45	1812.61	1997.05	2.07	2.02	1.96
YUGOSLAVIA	25.28	30.56	34.01	37.43	2.40	2.17	1.93
W EUROPE	5792.28	6612.50	7108.01	7560.45	1.67	1.46	1.24
AUSTRALIA	541.14	625.33	666.39	691.28	1.82	1.28	0.74
NEW ZEALAND	124.14	138.38	146.39	153.06	1.37	1.13	0.89
OCEANIA	665.28	763.72	812.78	844.34	1.74	1.25	0.76
ISRAEL	46.70	55.04	60.12	64.71	2.07	1.78	1.49
JAPAN	2706.00	3391.57	3850.56	4309.79	2.86	2.57	2.28
SOUTH AFRICA	283.60	324.60	345.19	358.76	1.70	1.24	0.77
OTH DEV.PED ME	3036.30	3771.21	4255.87	4733.27	2.75	2.45	2.15
ALGERIA	13.36	17.11	20.21	24.16	3.14	3.39	3.63
ANGOLA	1.00	1.30	1.53	1.82	3.31	3.39	3.47
BENIN	0.10	0.13	0.15	0.18	3.31	3.39	3.47
CAMEROON	0.90	1.26	1.57	1.96	4.29	4.45	4.62
ETHIOPIA	1.52	1.90	2.17	2.48	2.81	2.73	2.65

Table A2 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
GHANA	1.20	1.29	1.35	1.40	0.93	0.85	0.76
GUINEA BISSAU	0.10	0.12	0.13	0.14	2.08	1.91	1.75
IVORY COAST	1.32	1.78	2.06	2.29	3.80	2.98	2.16
KENYA	8.66	11.16	12.88	14.62	3.22	2.90	2.57
LIBERIA	0.08	0.10	0.11	0.12	2.49	2.32	2.16
MADAGASCAR	2.50	3.26	3.99	5.07	3.39	4.13	4.86
MALAWI	0.66	1.08	1.47	2.00	6.34	6.34	6.34
MOROCCO	4.08	5.16	5.93	6.76	2.98	2.81	2.65
MOZAMBIQUE	1.58	1.95	2.19	2.44	2.65	2.40	2.16
NIGER	0.10	0.14	0.18	0.22	4.70	4.37	4.04
NIGERIA	24.40	32.67	38.90	45.95	3.72	3.55	3.39
REUNION	1.40	1.83	2.16	2.53	3.43	3.31	3.20
SENEGAL	1.00	1.19	1.31	1.43	2.16	1.99	1.83
SIERRA LEONE	0.20	0.23	0.24	0.26	1.50	1.34	1.17
SOMALIA	0.20	0.26	0.31	0.40	3.22	4.04	4.86
TANZANIA	3.50	4.15	4.58	5.02	2.16	1.99	1.83
TUNISIA	7.14	9.38	10.95	12.58	3.47	3.14	2.81
UGANDA	0.20	0.24	0.27	0.30	2.49	2.32	2.16
ZAIRE	1.00	1.16	1.26	1.35	1.83	1.67	1.50
ZAMBIA	3.00	3.51	3.85	4.18	1.99	1.83	1.67
ZIMBABWE	18.10	21.20	23.21	25.21	1.99	1.83	1.67
AFRICA	97.30	123.55	142.96	164.85	3.03	2.96	2.89
ARGENTINA	213.84	231.80	240.94	248.26	1.01	0.78	0.60
BAHAMAS	2.66	3.27	3.65	4.01	2.61	2.25	1.90
BARBADOS	1.72	2.11	2.35	2.58	2.57	2.22	1.88
BELIZE	0.16	0.21	0.24	0.27	3.39	2.90	2.40
BOLIVIA	6.50	6.82	7.03	7.24	0.60	0.60	0.60
BRAZIL	269.30	323.59	360.04	397.40	2.32	2.16	1.99
CHILE	69.56	76.40	79.87	82.29	1.18	0.89	0.60
COLOMBIA	83.34	102.74	115.23	127.19	2.65	2.32	1.99
COSTA RICA	9.68	12.41	14.25	16.09	3.15	2.80	2.46
CUBA	34.70	45.30	52.25	58.84	3.39	2.90	2.40
DOMINICAN REP	13.92	18.17	20.96	23.60	3.39	2.90	2.40
ECUADOR	32.40	37.46	40.03	41.75	1.83	1.34	0.85
EL SALVADOR	13.52	14.84	15.48	15.95	1.17	0.85	0.60
GUATEMALA	12.48	17.35	20.83	24.41	4.21	3.72	3.22
GUYANA	1.10	1.35	1.52	1.72	2.57	2.49	2.40
HAITI	0.58	0.71	0.79	0.85	2.57	2.08	1.58
HONDURAS	5.08	6.42	7.26	8.02	2.98	2.49	1.99
JAMAICA	4.64	5.33	5.67	5.89	1.75	1.26	0.76
MARTINIQUE	0.96	1.15	1.27	1.37	2.31	1.96	1.60
MEXICO	269.68	310.07	332.59	350.67	1.76	1.41	1.06

Table A2 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
NETH ANTILLE	1.20	1.51	1.71	1.91	2.90	2.55	2.19
NICARAGUA	3.82	4.39	4.67	4.85	1.75	1.26	0.76
PANAMA	4.38	5.72	6.60	7.43	3.39	2.90	2.40
PARAGUAY	6.38	7.81	8.70	9.48	2.57	2.16	1.75
PERU	52.48	63.87	69.93	74.14	2.49	1.83	1.17
SURINAME	0.84	1.06	1.20	1.35	2.92	2.63	2.34
TRINIDAD ETC	8.96	11.74	13.66	15.62	3.43	3.08	2.72
URUGUAY	13.46	14.65	15.27	15.73	1.06	0.83	0.60
VENEZUELA	156.38	169.42	176.08	181.42	1.01	0.77	0.60
LATIN AMERICA	1293.72	1497.66	1620.07	1730.33	1.85	1.58	1.33
EGYPT	89.38	140.83	182.10	229.11	5.85	5.27	4.70
LIBYA	5.84	6.68	7.21	7.74	1.69	1.55	1.42
SUDAN	2.06	3.23	4.45	6.42	5.77	6.67	7.57
AFR. NEAR EAS	97.28	150.73	193.76	243.26	5.63	5.15	4.65
AFGHANISTAN	0.10	0.12	0.13	0.15	2.24	2.24	2.24
CYPRUS	2.78	3.39	3.77	4.13	2.51	2.17	1.82
IRAN	19.20	20.90	21.72	22.38	1.06	0.77	0.60
IRAQ	13.40	16.57	18.65	20.70	2.69	2.40	2.11
JORDAN	6.62	10.24	13.19	16.66	5.60	5.19	4.78
KUWAIT	15.00	15.74	16.21	16.71	0.60	0.60	0.60
LEBANON	6.20	6.50	6.70	6.90	0.60	0.60	0.60
SAUDI ARABIA	7.18	7.53	7.76	8.00	0.60	0.60	0.60
SYRIA	5.30	7.28	8.53	9.61	4.04	3.22	2.40
TURKEY	163.92	220.87	262.99	309.43	3.80	3.55	3.31
YEMEN DR	0.66	0.91	1.13	1.42	4.13	4.37	4.62
ASIA NEAR EAST	240.36	310.05	360.79	416.07	3.23	3.08	2.89
NEAR EAST	337.64	460.78	554.55	659.33	3.96	3.77	3.52
BANGLADESH	33.80	43.02	50.01	58.15	3.06	3.06	3.06
BRUNEI	0.28	0.37	0.44	0.51	3.66	3.32	2.98
BURMA	7.20	8.88	9.92	10.86	2.65	2.24	1.83
HONG KONG	87.94	116.25	136.44	157.86	3.55	3.25	2.96
INDIA	491.98	710.43	911.47	1192.38	4.70	5.11	5.52
INDONESIA	90.56	133.25	175.67	239.81	4.95	5.68	6.42
LAOS	0.04	0.06	0.07	0.09	4.29	4.70	5.11
MACAU	6.20	8.09	9.50	11.10	3.38	3.27	3.15
MALAYSIA	93.52	130.05	156.70	185.10	4.21	3.80	3.39
OMAN	0.20	0.21	0.22	0.22	0.60	0.60	0.60

Table A2 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
PAKISTAN	32.50	43.52	49.20	52.37	3.72	2.49	1.26
PHILIPPINES	81.24	97.62	107.31	115.62	2.32	1.91	1.50
REP OF KOREA	230.42	358.59	470.93	616.07	5.68	5.60	5.52
SINGAPORE	67.80	101.27	131.96	174.39	5.14	5.44	5.73
SRI LANKA	13.70	18.58	22.21	26.23	3.88	3.63	3.39
THAILAND	107.84	162.69	207.10	257.52	5.27	4.95	4.45
FAR EAST	1345.22	1932.85	2439.15	3098.27	4.63	4.76	4.90
FIJI	1.96	2.49	2.90	3.37	3.06	3.06	3.06
FR POLYNESIA	0.64	0.82	0.96	1.12	3.08	3.25	3.25
NEW CALEDONIA	1.30	1.45	1.55	1.66	1.37	1.37	1.37
OTH DVPING ME	3.90	4.76	5.41	6.16	2.52	2.59	2.62
CHINA TAIW	1292.18	1842.68	2211.46	2550.77	4.54	3.72	2.90
KOREA DPR	1.30	2.00	2.56	3.23	5.52	5.11	4.70
MONGOLIA	3.20	3.94	4.50	5.12	2.65	2.65	2.65
VIET NAM	2.50	2.95	3.15	3.24	2.08	1.34	0.60
ASIA CPE	1299.18	1851.57	2221.67	2562.36	4.53	3.71	2.89
BULGARIA	42.82	51.99	57.22	61.37	2.46	1.93	1.41
CZECHOSLOVAKIA	72.58	80.16	85.54	91.55	1.25	1.31	1.37
GERMAN DR	140.46	181.49	213.62	252.16	3.25	3.31	3.37
HUNGARY	65.50	73.28	77.48	80.76	1.41	1.12	0.83
POLAND	126.90	133.12	137.16	141.33	0.60	0.60	0.60
ROMANIA	60.00	76.36	84.62	89.35	3.06	2.08	1.09
USSR	1122.08	1307.91	1406.90	1479.11	1.93	1.47	1.01
E EUROPE USSR	1630.34	1904.30	2062.54	2195.62	1.96	1.61	1.26
CENTR PLANNED	2929.52	3755.87	4284.21	4757.98	3.15	2.67	2.12
WORLD	27330.54	32414.14	35625.00	38684.41	2.16	1.91	1.66

Table A3. Projections of consumption of printing and writing papers based on the subjective/ statistical scenario.

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CANADA	1120.38	1448.74	1634.80	1796.12	3.27	2.45	1.90
UNITED STATES	15437.92	19105.23	21573.67	24077.06	2.70	2.46	2.22
N AMERICA	16558.30	20553.97	23208.48	25873.19	2.74	2.46	2.20
AUSTRIA	111.84	146.67	170.72	195.22	3.45	3.08	2.72
BELGIUM-LUX	514.12	637.19	715.84	790.00	2.72	2.36	1.99
DENMARK	202.98	249.79	279.38	306.95	2.63	2.26	1.90
FINLAND	342.06	464.62	552.83	646.31	3.90	3.54	3.17
FRANCE	2187.10	2729.93	3080.54	3414.86	2.81	2.45	2.08
GERMANY FR	3463.30	4446.85	5107.74	5763.74	3.17	2.81	2.45
GREECE	94.32	125.90	148.67	173.05	3.68	3.38	3.08
ICELAND	2.84	3.47	3.88	4.26	2.54	2.26	1.90
IRELAND	35.60	43.68	48.97	54.17	2.59	2.31	2.04
ITALY	1612.16	1978.10	2217.81	2453.20	2.59	2.31	2.04
MALTA	2.30	3.23	4.00	4.94	4.34	4.34	4.34
NETHERLANDS	651.04	841.85	971.25	1100.86	3.27	2.90	2.54
NORWAY	152.88	227.34	287.56	359.02	5.09	4.81	4.54
PORTUGAL	91.82	129.01	156.19	185.09	4.34	3.90	3.45
SPAIN	720.62	913.14	1044.68	1179.19	3.00	2.73	2.45
SWEDEN	557.18	720.48	820.26	901.20	3.27	2.63	1.90
SWITZERLAND	359.72	449.00	506.67	561.65	2.81	2.45	2.08
UNITED KINGDOM	1853.50	2464.39	2934.85	3483.49	3.62	3.56	3.49
YUGOSLAVIA	279.24	387.90	469.63	560.53	4.19	3.90	3.60
W EUROPE	13234.62	16962.54	19521.45	22137.74	3.15	2.85	2.55
AUSTRALIA	411.40	543.33	624.08	691.81	3.54	2.81	2.08
NEW ZEALAND	56.38	70.30	79.62	88.97	2.80	2.52	2.24
OCEANIA	467.78	613.63	703.70	780.78	3.45	2.78	2.10
ISRAEL	70.72	94.03	110.49	127.69	3.62	3.28	2.93
JAPAN	3932.68	5554.68	6786.43	8163.07	4.41	4.09	3.76
SOUTH AFRICA	292.46	379.38	433.73	481.74	3.31	2.71	2.12
OTH DEV.PED ME	4295.86	6028.08	7330.65	8772.51	4.33	3.99	3.66
ALGERIA	32.28	45.70	57.47	73.11	4.44	4.69	4.93
ANGOLA	1.20	1.72	2.16	2.73	4.61	4.69	4.77
BENIN	0.50	0.72	0.90	1.14	4.61	4.69	4.77
CAMEROON	3.32	5.13	6.79	9.05	5.59	5.75	5.92
CHAD	0.20	0.28	0.36	0.46	4.36	4.77	5.18

Table A3 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CONGO	0.10	0.15	0.18	0.21	4.93	4.20	3.46
ETHIOPIA	4.22	5.83	7.10	8.62	4.11	4.03	3.95
GABON	1.30	1.81	2.20	2.61	4.25	3.90	3.56
GHANA	3.30	3.94	4.38	4.85	2.23	2.15	2.06
IVORY COAST	4.04	6.01	7.41	8.79	5.10	4.28	3.46
KENYA	16.36	23.31	28.63	34.61	4.52	4.20	3.87
LIBERIA	0.30	0.40	0.48	0.57	3.79	3.62	3.46
MADAGASCAR	3.72	5.37	6.99	9.43	4.69	5.43	6.16
MALAWI	2.58	4.65	6.72	9.71	7.64	7.64	7.64
MALI	0.20	0.29	0.36	0.46	4.69	4.69	4.69
MOROCCO	22.40	31.32	38.31	46.50	4.28	4.11	3.95
MOZAMBIQUE	3.28	4.47	5.36	6.36	3.95	3.70	3.46
NIGER	0.10	0.16	0.21	0.27	6.00	5.67	5.34
NIGERIA	45.10	66.71	84.55	106.31	5.02	4.85	4.69
REUNION	1.12	1.68	2.15	2.74	5.21	5.07	4.94
RWANDA	0.40	0.62	0.81	1.05	5.67	5.51	5.34
SENEGAL	10.88	14.28	16.79	19.59	3.46	3.29	3.13
SOMALIA	0.58	0.83	1.07	1.45	4.52	5.34	6.16
TANZANIA	7.00	9.19	10.80	12.60	3.46	3.29	3.13
TUNISIA	25.98	37.72	46.87	57.34	4.77	4.44	4.11
UGANDA	0.50	0.67	0.80	0.95	3.79	3.62	3.46
ZAIRE	2.70	3.45	4.00	4.59	3.13	2.97	2.80
ZAMBIA	6.30	8.16	9.53	11.02	3.29	3.13	2.97
ZIMBABWE	8.12	10.52	12.28	14.21	3.29	3.13	2.97
AFRICA	208.08	295.10	365.67	451.33	4.46	4.38	4.30
ARGENTINA	185.10	223.48	248.03	272.51	2.38	2.11	1.90
BAHAMAS	0.06	0.08	0.10	0.12	4.25	3.83	3.42
BARBADOS	1.86	2.63	3.19	3.80	4.42	3.97	3.53
BELIZE	0.28	0.40	0.50	0.60	4.69	4.20	3.70
BOLIVIA	6.00	6.98	7.66	8.42	1.90	1.90	1.90
BRAZIL	770.02	1023.57	1213.22	1426.64	3.62	3.46	3.29
CHILE	59.80	73.66	82.41	90.54	2.64	2.27	1.90
COLOMBIA	83.96	114.46	136.75	160.81	3.95	3.62	3.29
COSTA RICA	6.46	9.66	12.16	14.98	5.16	4.71	4.27
CUBA	48.40	69.83	85.76	102.86	4.69	4.20	3.70
DOMINICAN REP	27.90	40.25	49.44	59.29	4.69	4.20	3.70
ECUADOR	26.78	34.27	39.03	43.40	3.13	2.64	2.15
EL SALVADOR	1.28	1.56	1.73	1.90	2.47	2.15	1.90
GUATEMALA	19.28	29.61	37.82	47.18	5.51	5.02	4.52
GUYANA	0.80	1.08	1.31	1.57	3.87	3.79	3.70
HAITI	0.60	0.81	0.96	1.11	3.87	3.38	2.88
HONDURAS	3.12	4.36	5.25	6.18	4.28	3.79	3.29

Table A3 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
JAMAICA	6.72	8.54	9.69	10.74	3.05	2.56	2.06
MEXICO	522.78	682.04	788.22	891.45	3.38	2.94	2.49
NETH ANTILLE	1.10	1.58	1.93	2.32	4.59	4.18	3.76
NICARAGUA	3.22	4.09	4.64	5.14	3.05	2.56	2.06
PANAMA	10.06	14.51	17.82	21.38	4.69	4.20	3.70
PARAGUAY	5.62	7.61	9.02	10.49	3.87	3.46	3.05
PERU	54.04	72.75	84.87	95.90	3.79	3.13	2.47
SURINAME	2.06	3.01	3.75	4.59	4.86	4.49	4.12
TRINIDAD ETC	4.38	6.58	8.31	10.30	5.21	4.80	4.38
URUGUAY	15.80	19.24	21.45	23.56	2.49	2.20	1.90
VENEZUELA	97.14	117.60	130.62	143.51	2.42	2.12	1.90
LATIN AMERICA	1964.62	2574.25	3005.65	3461.28	3.44	3.15	2.86
EGYPT	113.18	196.63	270.33	361.77	7.15	6.57	6.00
LIBYA	4.62	6.02	7.03	8.15	3.36	3.17	2.99
SUDAN	6.64	11.47	16.82	25.73	7.07	7.97	8.87
AFR. NEAR EAS	124.44	214.11	294.19	395.64	7.02	6.56	6.11
AFGHANISTAN	0.50	0.66	0.79	0.94	3.54	3.54	3.54
BAHRAIN	2.14	3.16	3.95	4.82	4.99	4.54	4.08
CYPRUS	4.08	5.73	6.94	8.22	4.34	3.90	3.45
IRAN	72.40	88.16	97.92	107.58	2.49	2.12	1.90
IRAQ	10.50	15.01	18.43	22.23	4.56	4.19	3.82
JORDAN	5.04	8.60	11.77	15.82	6.90	6.49	6.08
KUWAIT	22.70	26.39	28.99	31.85	1.90	1.90	1.90
LEBANON	33.86	39.36	43.25	47.51	1.90	1.90	1.90
QATAR	3.40	3.95	4.34	4.77	1.90	1.90	1.90
SAUDI ARABIA	58.70	68.24	74.97	82.37	1.90	1.90	1.90
SYRIA	15.28	23.17	28.91	34.68	5.34	4.52	3.70
TURKEY	88.76	132.12	167.44	209.72	5.10	4.85	4.61
YEMEN DR	0.92	1.40	1.85	2.47	5.43	5.67	5.92
ASIA NEAR EAST	318.28	415.95	489.54	572.98	3.40	3.31	3.20
NEAR EAST	442.72	630.06	783.73	968.63	4.51	4.46	4.33
BANGLADESH	45.04	63.37	78.44	97.10	4.36	4.36	4.36
BRUNEI	1.04	1.66	2.17	2.78	6.00	5.54	5.09
BURMA	15.00	20.45	24.33	28.39	3.95	3.54	3.13
HONG KONG	108.06	163.96	209.31	262.84	5.35	5.00	4.66
INDIA	730.12	1163.70	1587.64	2208.09	6.00	6.41	6.82
INDONESIA	179.28	291.09	407.97	591.76	6.25	6.98	7.72

Table A3 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
LAOS	0.10	0.15	0.21	0.28	5.59	6.00	6.41
MALAYSIA	70.52	108.29	138.86	174.60	5.51	5.10	4.69
OMAN	2.36	2.74	3.01	3.31	1.90	1.90	1.90
PAKISTAN	60.68	89.76	108.09	122.63	5.02	3.79	2.56
PHILIPPINES	53.36	70.93	83.08	95.39	3.62	3.21	2.80
REP OF KOREA	320.20	549.51	767.19	1067.00	6.98	6.90	6.82
SINGAPORE	83.94	146.54	210.94	308.55	7.21	7.56	7.90
SRI LANKA	28.40	42.54	54.12	68.05	5.18	4.93	4.69
THAILAND	59.58	99.15	134.24	177.57	6.57	6.25	5.75
FAR EAST	1757.68	2813.85	3809.60	5208.34	6.06	6.25	6.45
FIJI	2.26	3.18	3.94	4.87	4.36	4.36	4.36
SAMOA	0.46	0.61	0.72	0.86	3.54	3.54	3.54
OTH DVPING ME	2.72	3.79	4.66	5.73	4.22	4.23	4.23
CHINA TAIW	1983.60	3122.64	3988.40	4898.40	5.84	5.02	4.20
KOREA DPR	2.10	3.56	4.86	6.50	6.82	6.41	6.00
MONGOLIA	2.62	3.57	4.34	5.26	3.95	3.95	3.95
VIET NAM	17.00	22.17	25.26	27.75	3.38	2.64	1.90
ASIA CPE	2005.32	3151.94	4022.85	4937.91	5.82	5.00	4.18
BULGARIA	66.50	92.90	110.88	128.15	4.27	3.60	2.94
CZECHOSLOVAKIA	156.76	193.38	221.24	253.96	2.66	2.73	2.80
GERMAN DR	217.00	320.73	410.79	527.86	5.00	5.07	5.14
HUNGARY	140.72	177.38	201.33	224.43	2.94	2.57	2.20
POLAND	213.96	248.73	273.27	300.24	1.90	1.90	1.90
ROMANIA	91.60	128.87	152.15	171.24	4.36	3.38	2.39
USSR	1440.48	1911.84	2217.43	2498.80	3.60	3.01	2.42
E EUROPE USSR	2327.02	3073.84	3587.09	4104.66	3.54	3.14	2.73
CENTR PLANNED	4332.34	6225.78	7609.93	9042.57	4.64	4.10	3.51
WORLD	43264.72	56701.04	66343.51	76702.10	3.44	3.19	2.94

Table A4. Projections of consumption of other paper and paperboard based on the subjective/ statistical scenario.

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CANADA	2309.10	2276.97	2181.83	2043.65	-0.17	-0.85	-1.30
UNITED STATES	36152.52	36501.05	35945.99	34649.49	0.12	-0.31	-0.73
N AMERICA	38461.62	38778.02	38127.82	36693.14	0.10	-0.34	-0.76
AUSTRIA	703.28	701.87	690.54	669.23	-0.02	-0.32	-0.62
BELGIUM-LUX	713.02	678.14	647.35	608.66	-0.62	-0.92	-1.23
DENMARK	430.64	407.11	387.15	362.64	-0.70	-1.00	-1.30
FINLAND	672.20	691.25	692.98	684.36	0.35	0.05	-0.25
FRANCE	3571.52	3417.37	3274.58	3090.57	-0.55	-0.85	-1.15
GERMANY FR	5031.78	4932.02	4797.87	4597.40	-0.25	-0.55	-0.85
GREECE	288.62	331.54	352.61	365.71	1.75	1.24	0.73
ICELAND	11.96	11.24	10.69	10.01	-0.77	-1.00	-1.30
IRELAND	158.02	158.40	154.46	146.64	0.03	-0.50	-1.03
ITALY	3145.68	3153.24	3074.88	2919.16	0.03	-0.50	-1.03
MALTA	18.50	23.24	26.80	30.90	2.89	2.89	2.89
NETHERLANDS	1139.70	1123.84	1097.40	1055.53	-0.17	-0.47	-0.77
NORWAY	254.34	282.58	298.47	311.76	1.33	1.10	0.88
PORTUGAL	300.94	378.01	420.00	449.50	2.89	2.13	1.37
SPAIN	1855.48	1982.01	2011.52	1987.89	0.83	0.30	-0.24
SWEDEN	886.68	874.34	844.17	790.70	-0.17	-0.70	-1.30
SWITZERLAND	456.26	436.57	418.33	394.82	-0.55	-0.85	-1.15
UNITED KINGDOM	3826.02	4491.59	4932.88	5382.26	2.03	1.89	1.76
YUGOSLAVIA	796.34	980.69	1089.62	1180.84	2.64	2.13	1.62
W EUROPE	24260.98	25055.04	25222.30	25038.59	0.40	0.13	-0.15
AUSTRALIA	1078.40	1082.72	1053.27	994.09	0.05	-0.55	-1.15
NEW ZEALAND	264.64	273.86	272.45	263.91	0.43	-0.10	-0.63
OCEANIA	1343.04	1356.58	1325.72	1258.00	0.13	-0.46	-1.04
ISRAEL	157.80	185.25	198.20	205.18	2.03	1.36	0.70
JAPAN	11347.32	12617.38	13257.71	13697.62	1.34	1.00	0.66
SOUTH AFRICA	911.48	995.87	1000.71	955.57	1.11	0.10	-0.92
OTH DEV.PED ME	12416.60	13798.50	14456.61	14858.37	1.33	0.94	0.55
ALGERIA	114.06	140.46	162.98	192.62	2.64	3.02	3.40
ANGOLA	4.00	5.02	5.83	6.81	2.89	3.02	3.14
BENIN	2.40	3.01	3.50	4.08	2.89	3.02	3.14
BOTSWANA	0.50	1.09	1.89	3.50	10.26	11.65	13.05
CAMEROON	10.60	14.98	18.81	23.93	4.41	4.67	4.92

Table A4 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CAPE VERDE	0.14	0.21	0.28	0.40	5.18	6.19	7.21
CENTRAL AF REP	0.56	0.62	0.68	0.77	1.24	1.88	2.51
CHAD	0.10	0.12	0.14	0.17	2.51	3.14	3.78
CONGO	0.90	1.18	1.31	1.39	3.40	2.26	1.11
ETHIOPIA	7.60	9.00	9.93	10.90	2.13	2.00	1.88
GABON	0.70	0.90	1.02	1.12	3.22	2.56	1.89
GHANA	1.90	1.78	1.70	1.62	-0.79	-0.92	-1.05
GUINEA BISSAU	0.20	0.22	0.22	0.23	0.99	0.73	0.48
IVORY COAST	18.90	25.18	28.33	29.94	3.65	2.38	1.11
KENYA	50.96	63.38	70.86	77.27	2.76	2.26	1.75
LIBERIA	0.52	0.59	0.63	0.67	1.62	1.37	1.11
MADAGASCAR	2.70	3.43	4.20	5.44	3.02	4.16	5.30
MALAWI	10.44	18.74	27.02	38.96	7.59	7.59	7.59
MALI	0.10	0.13	0.15	0.17	3.02	3.02	3.02
MAURITIUS	3.22	2.90	2.72	2.54	-1.30	-1.30	-1.30
MOROCCO	131.72	159.03	176.69	193.89	2.38	2.13	1.88
MOZAMBIQUE	11.18	12.97	13.97	14.76	1.88	1.49	1.11
NIGER	0.10	0.15	0.19	0.23	5.05	4.54	4.03
NIGERIA	66.00	87.08	102.29	118.69	3.53	3.27	3.02
REUNION	1.70	2.53	3.20	4.00	5.08	4.82	4.55
RWANDA	0.40	0.57	0.70	0.86	4.54	4.29	4.03
SENEGAL	10.72	11.71	12.22	12.60	1.11	0.86	0.61
SOMALIA	0.18	0.22	0.27	0.35	2.76	4.03	5.30
TANZANIA	13.00	14.20	14.82	15.28	1.11	0.86	0.61
TOGO	0.30	0.31	0.31	0.31	0.35	0.10	-0.16
TUNISIA	25.90	33.18	37.79	41.99	3.14	2.64	2.13
UGANDA	2.32	2.64	2.82	2.98	1.62	1.37	1.11
UPPER VOLTA	1.52	1.71	1.87	2.06	1.49	1.75	2.00
ZAIRE	3.70	3.88	3.95	3.97	0.61	0.35	0.10
ZAMBIA	14.00	14.99	15.45	15.72	0.86	0.61	0.35
ZIMBABWE	52.20	55.90	57.61	58.63	0.86	0.61	0.35
AFRICA	565.44	694.03	786.40	888.85	2.59	2.53	2.48
ARGENTINA	530.08	514.63	491.86	460.71	-0.37	-0.90	-1.30
BAHAMAS	0.38	0.49	0.55	0.60	3.22	2.42	1.63
BARBADOS	3.64	4.62	5.16	5.56	3.02	2.26	1.49
BELIZE	1.20	1.52	1.70	1.83	3.02	2.26	1.49
BOLIVIA	5.50	4.95	4.64	4.35	-1.30	-1.30	-1.30
BRAZIL	2205.16	2458.18	2598.05	2711.57	1.37	1.11	0.86
CHILE	162.54	162.15	156.83	146.90	-0.03	-0.66	-1.30
COLOMBIA	308.56	358.00	383.15	399.89	1.88	1.37	0.86
COSTA RICA	107.38	150.24	178.67	204.76	4.29	3.53	2.76
CUBA	173.96	220.68	246.72	265.71	3.02	2.26	1.49

Table A4 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
DOMINICAN REP	36.62	46.45	51.94	55.93	3.02	2.26	1.49
ECUADOR	108.18	113.53	112.64	107.56	0.61	-0.16	-0.92
EL SALVADOR	43.44	42.03	40.14	37.59	-0.41	-0.92	-1.30
FRENCH GUIANA	0.20	0.25	0.28	0.31	3.02	2.26	1.49
GUADELOUPE	7.52	10.74	12.91	14.93	4.55	3.75	2.96
GUATEMALA	54.16	75.78	90.12	103.28	4.29	3.53	2.76
GUYANA	4.40	5.05	5.48	5.90	1.75	1.62	1.49
HAITI	4.60	5.28	5.55	5.61	1.75	0.99	0.22
HONDURAS	40.78	49.23	53.36	55.69	2.38	1.62	0.86
JAMAICA	41.12	42.72	42.12	39.96	0.48	-0.28	-1.05
MARTINIQUE	14.22	17.40	18.99	19.92	2.56	1.76	0.96
MEXICO	1610.46	1777.33	1820.21	1794.51	1.24	0.48	-0.28
NETH ANTILLE	2.00	2.71	3.16	3.54	3.89	3.09	2.29
NICARAGUA	6.58	6.84	6.74	6.39	0.48	-0.28	-1.05
PANAMA	86.78	110.08	123.07	132.55	3.02	2.26	1.49
PARAGUAY	14.88	17.09	18.07	18.50	1.75	1.11	0.48
PERU	142.20	161.72	166.67	163.28	1.62	0.61	-0.41
SURINAME	10.88	14.64	17.09	19.35	3.78	3.14	2.51
TRINIDAD ETC	29.12	43.30	53.41	63.40	5.08	4.29	3.49
URUGUAY	26.20	25.61	24.61	23.05	-0.28	-0.79	-1.30
VENEZUELA	468.58	453.39	432.94	405.52	-0.41	-0.92	-1.30
LATIN AMERICA	6251.32	6896.65	7166.81	7278.63	1.24	0.77	0.31
EGYPT	196.32	333.00	444.35	568.47	6.83	5.94	5.05
LIBYA	8.16	8.09	7.99	7.84	-0.10	-0.25	-0.40
SUDAN	18.72	31.45	46.42	73.07	6.70	8.10	9.49
AFR. NEAR EAS	223.20	372.55	498.77	649.37	6.61	6.01	5.42
AFGHANISTAN	0.70	0.77	0.82	0.87	1.24	1.24	1.24
BAHRAIN	1.44	1.59	1.66	1.70	1.25	0.88	0.50
CYPRUS	42.08	52.86	58.73	62.85	2.89	2.13	1.37
IRAN	181.92	177.83	169.81	159.05	-0.28	-0.92	-1.30
IRAQ	46.50	60.16	68.52	75.66	3.27	2.64	2.00
JORDAN	22.60	37.25	49.41	63.60	6.45	5.81	5.18
KUWAIT	13.50	12.16	11.39	10.67	-1.30	-1.30	-1.30
LEBANON	69.78	62.84	58.86	55.14	-1.30	-1.30	-1.30
QATAR	2.80	2.52	2.36	2.21	-1.30	-1.30	-1.30
SAUDI ARABIA	47.64	42.91	40.19	37.64	-1.30	-1.30	-1.30
SYRIA	41.84	57.41	65.80	70.86	4.03	2.76	1.49
TURKEY	280.26	373.44	438.66	505.84	3.65	3.27	2.89
YEMEN DR	0.10	0.14	0.17	0.22	4.16	4.54	4.92

Table A4 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
ASIA NEAR EAST	751.16	881.88	966.38	1046.32	2.03	1.85	1.60
NEAR EAST	974.36	1254.43	1465.15	1695.69	3.21	3.15	2.97
BANGLADESH	13.60	16.58	18.77	21.25	2.51	2.51	2.51
BRUNEI	0.30	0.35	0.38	0.41	2.08	1.70	1.33
BURMA	13.30	15.43	16.41	16.91	1.88	1.24	0.61
HONG KONG	423.20	642.13	807.32	983.17	5.35	4.69	4.02
INDIA	782.28	1160.19	1529.67	2078.13	5.05	5.68	6.32
INDONESIA	284.96	435.04	598.12	867.38	5.43	6.57	7.72
LAOS	0.06	0.08	0.11	0.14	4.41	5.05	5.68
MACAU	5.10	7.42	9.26	11.43	4.80	4.54	4.29
MALAYSIA	165.52	231.59	277.10	321.51	4.29	3.65	3.02
NEPAL	1.70	2.01	2.26	2.58	2.13	2.38	2.64
OMAN	0.98	0.88	0.83	0.77	-1.30	-1.30	-1.30
PAKISTAN	76.50	100.94	109.39	107.84	3.53	1.62	-0.28
PHILIPPINES	236.72	263.88	273.68	275.01	1.37	0.73	0.10
REP OF KOREA	1244.24	2070.69	2829.97	3844.65	6.57	6.45	6.32
SINGAPORE	110.30	218.83	346.16	564.40	8.94	9.61	10.27
SRI LANKA	21.32	28.69	33.91	39.34	3.78	3.40	3.02
THAILAND	299.90	475.80	619.82	778.67	5.94	5.43	4.67
FAR EAST	3679.98	5670.54	7473.16	9913.60	5.55	5.68	5.81
FIJI	3.88	4.73	5.36	6.06	2.51	2.51	2.51
FR POLYNESIA	1.44	2.01	2.53	3.18	4.29	4.69	4.69
PAPUA N GUINEA	10.40	12.68	14.35	16.25	2.51	2.51	2.51
SAMOA	0.06	0.07	0.07	0.07	1.24	1.24	1.24
OTH DVPING ME	15.78	19.49	22.31	25.57	2.68	2.74	2.76
CHINA TAIW	3922.96	5706.52	6786.08	7586.87	4.80	3.53	2.26
KOREA DPR	84.70	138.29	182.33	233.27	6.32	5.68	5.05
KAMPUCHEA DEM	5.60	6.63	7.23	7.74	2.13	1.75	1.37
MONGOLIA	6.94	8.05	8.84	9.70	1.88	1.88	1.88
VIET NAM	32.30	34.94	34.66	32.47	0.99	-0.16	-1.30
ASIA CPE	4052.50	5894.43	7019.14	7870.04	4.79	3.55	2.31
ALBANIA	12.90	15.42	15.99	15.37	2.26	0.73	-0.79
BULGARIA	424.96	528.54	572.79	586.61	2.76	1.62	0.48
CZECHOSLOVAKIA	840.90	851.93	864.61	883.32	0.16	0.30	0.43
GERMAN DR	1056.00	1523.14	1927.17	2453.87	4.69	4.82	4.95
HUNGARY	475.34	493.82	489.96	470.86	0.48	-0.16	-0.79

Table A4 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
POLAND	965.14	869.22	814.17	762.60	-1.30	-1.30	-1.30
ROMANIA	545.80	665.52	698.99	680.39	2.51	0.99	-0.54
USSR	6542.92	7441.14	7668.97	7512.67	1.62	0.61	-0.41
E EUROPE USSR	10863.96	12388.73	13052.64	13365.68	1.66	1.05	0.48
CENTR PLANNED	14916.46	18283.16	20071.78	21235.72	2.58	1.88	1.13
WORLD	102885.58	111806.44	116118.07	118886.17	1.04	0.76	0.47

Table A5. Projections of consumption of sawnwood and sleepers based on the subjective/ statistical scenario.

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 CUM)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CANADA	14136.29	14508.04	14255.92	13694.74	0.32	-0.35	-0.80
UNITED STATES	101013.07	103462.99	103307.89	101461.69	0.30	-0.03	-0.36
N AMERICA	115149.36	117971.03	117563.81	115156.42	0.30	-0.07	-0.41
AUSTRIA	3044.08	3161.70	3189.46	3169.57	0.48	0.17	-0.13
BELGIUM-LUX	1794.06	1776.20	1738.77	1676.65	-0.13	-0.43	-0.73
DENMARK	1829.00	1799.94	1755.39	1686.29	-0.20	-0.50	-0.80
FINLAND	3115.18	3333.42	3426.11	3469.15	0.85	0.55	0.25
FRANCE	11031.88	10987.83	10796.88	10450.52	-0.05	-0.35	-0.65
GERMANY FR	13456.50	13728.00	13693.71	13455.74	0.25	-0.05	-0.35
GREECE	746.28	779.38	791.93	795.74	0.54	0.32	0.10
ICELAND	68.68	67.18	65.52	62.94	-0.28	-0.50	-0.80
IRELAND	568.34	553.95	539.92	521.18	-0.32	-0.51	-0.70
ITALY	7411.78	7224.15	7041.10	6796.71	-0.32	-0.51	-0.70
MALTA	26.90	29.24	30.80	32.45	1.05	1.05	1.05
NETHERLANDS	2859.10	2934.29	2937.96	2897.78	0.32	0.03	-0.28
NORWAY	2471.24	2855.95	3091.85	3310.34	1.82	1.60	1.38
PORTUGAL	1359.88	1478.16	1531.54	1560.55	1.05	0.71	0.38
SPAIN	3097.00	3089.08	3054.64	2991.63	-0.03	-0.22	-0.42
SWEDEN	4430.44	4546.95	4501.66	4324.45	0.32	-0.20	-0.80
SWITZERLAND	2186.04	2177.31	2139.47	2070.84	-0.05	-0.35	-0.65
UNITED KINGDOM	8611.76	8891.23	9048.82	9187.20	0.40	0.35	0.30
YUGOSLAVIA	3705.60	3992.34	4136.50	4238.42	0.94	0.71	0.49
W EUROPE	71813.73	73406.30	73512.02	72698.16	0.27	0.03	-0.22
AUSTRALIA	4265.90	4457.25	4446.12	4303.49	0.55	-0.05	-0.65
NEW ZEALAND	1691.82	1668.15	1637.68	1592.33	-0.18	-0.37	-0.56
OCEANIA	5957.72	6125.40	6083.80	5895.82	0.35	-0.14	-0.63
ISRAEL	273.70	282.58	284.85	283.71	0.40	0.16	-0.08
JAPAN	36793.60	37270.18	37339.18	37177.04	0.16	0.04	-0.09
SOUTH AFRICA	1893.34	1933.70	1915.97	1856.19	0.26	-0.18	-0.63
OTH DEV.PED ME	38960.64	39486.46	39540.01	39316.94	0.17	0.03	-0.11
ALGERIA	924.56	1090.34	1225.34	1395.92	2.08	2.36	2.64
ANGOLA	10.00	11.97	13.45	15.18	2.27	2.36	2.45
BENIN	12.00	14.36	16.14	18.22	2.27	2.36	2.45
BOTSWANA	6.00	10.83	16.43	26.11	7.66	8.69	9.71
BURUNDI	1.00	1.33	1.65	2.13	3.66	4.41	5.15

Table A5 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 CUM)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CAMEROON	321.60	419.74	500.23	601.53	3.38	3.57	3.76
CAPE VERDE	6.36	8.67	10.90	14.19	3.94	4.69	5.43
CENTRAL AF REP	30.82	33.53	36.17	39.91	1.06	1.52	1.99
CHAD	7.20	8.43	9.52	10.99	1.99	2.45	2.92
CONGO	45.10	55.56	60.75	63.75	2.64	1.80	0.97
EQ GUINEA	14.88	16.55	17.69	18.91	1.34	1.34	1.34
ETHIOPIA	53.00	60.70	65.78	70.95	1.71	1.62	1.52
GABON	98.08	104.80	107.94	109.85	0.83	0.59	0.35
GAMBIA	1.14	1.39	1.57	1.74	2.55	2.36	2.18
GHANA	187.46	181.14	176.47	171.12	-0.43	-0.52	-0.61
GUINEA BISSAU	9.50	10.18	10.54	10.81	0.87	0.69	0.50
GUINEA	90.00	101.58	109.57	118.18	1.52	1.52	1.52
IVORY COAST	360.32	450.35	494.71	519.10	2.83	1.90	0.97
KENYA	176.34	209.48	229.07	245.95	2.18	1.80	1.43
LIBERIA	170.04	189.13	200.29	210.16	1.34	1.15	0.97
MADAGASCAR	234.00	282.05	330.14	402.37	2.36	3.20	4.04
MALAWI	45.68	71.23	94.02	124.11	5.71	5.71	5.71
MALI	8.90	10.73	12.06	13.55	2.36	2.36	2.36
MAURITIUS	10.94	10.26	9.86	9.47	-0.80	-0.80	-0.80
MOROCCO	512.52	595.66	648.40	699.37	1.90	1.71	1.52
MOZAMBIQUE	41.72	47.09	50.10	52.57	1.52	1.25	0.97
NIGER	1.50	2.03	2.41	2.81	3.85	3.48	3.11
NIGERIA	3788.90	4701.39	5331.66	5991.79	2.73	2.55	2.36
REUNION	59.02	66.51	71.32	76.13	1.50	1.41	1.31
RWANDA	2.30	3.02	3.56	4.14	3.48	3.29	3.11
SAO TOME ETC	2.80	3.25	3.56	3.87	1.90	1.80	1.71
SENEGAL	19.80	21.38	22.23	22.90	0.97	0.78	0.60
SIERRA LEONE	22.30	22.70	22.74	22.57	0.22	0.04	-0.15
SOMALIA	15.28	18.15	21.15	25.78	2.18	3.11	4.04
SWAZILAND	51.92	79.83	103.53	133.09	5.52	5.34	5.15
TANZANIA	37.82	40.85	42.47	43.75	0.97	0.78	0.60
TOGO	5.10	5.27	5.33	5.34	0.41	0.22	0.04
TUNISIA	264.74	321.43	356.33	387.87	2.45	2.08	1.71
UGANDA	23.18	25.78	27.30	28.65	1.34	1.15	0.97
UPPER VOLTA	22.24	24.56	26.37	28.57	1.25	1.43	1.62
ZAIRE	86.26	90.45	92.32	93.35	0.60	0.41	0.22
ZAMBIA	52.90	56.30	57.99	59.19	0.78	0.60	0.41
ZIMBABWE	164.86	175.45	180.73	184.45	0.78	0.60	0.41
AFRICA	8000.08	9655.44	10819.76	12080.38	2.38	2.30	2.23
ARGENTINA	1500.62	1445.81	1399.01	1343.94	-0.46	-0.66	-0.80
BAHAMAS	34.92	37.31	38.34	38.83	0.83	0.54	0.26
BARBADOS	47.82	52.21	54.25	55.43	1.10	0.77	0.43

Table A5 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 CUM)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
BELIZE	35.02	42.21	46.16	49.11	2.36	1.80	1.25
BOLIVIA	93.82	87.98	84.52	81.19	-0.80	-0.80	-0.80
BRAZIL	15371.94	16848.41	17678.94	18380.17	1.15	0.97	0.78
CHILE	856.56	840.25	818.63	786.41	-0.24	-0.52	-0.80
COLOMBIA	825.20	931.41	986.36	1025.49	1.52	1.15	0.78
COSTA RICA	428.14	488.57	521.88	548.28	1.66	1.33	0.99
CUBA	590.72	712.02	778.60	828.33	2.36	1.80	1.25
DOMINICA	1.80	1.87	1.87	1.81	0.50	-0.06	-0.61
DOMINICAN REP	88.52	106.70	116.67	124.13	2.36	1.80	1.25
ECUADOR	1027.58	1077.52	1079.52	1051.69	0.60	0.04	-0.52
EL SALVADOR	48.66	48.08	46.84	45.00	-0.15	-0.52	-0.80
FRENCH GUIANA	11.84	12.93	13.43	13.72	1.10	0.77	0.43
GUADELOUPE	36.86	40.91	43.05	44.66	1.31	1.02	0.74
GUATEMALA	96.32	124.81	142.83	159.06	3.29	2.73	2.18
GUYANA	55.60	62.30	66.58	70.83	1.43	1.34	1.25
HAITI	24.40	27.34	28.56	29.01	1.43	0.87	0.32
HONDURAS	206.30	239.77	256.26	266.42	1.90	1.34	0.78
JAMAICA	92.54	96.32	96.05	93.14	0.50	-0.06	-0.61
MARTINIQUE	29.07	30.48	30.94	30.97	0.59	0.30	0.02
MEXICO	2170.22	2226.40	2224.62	2185.74	0.32	-0.02	-0.35
NETH ANTILLE	25.62	27.90	29.01	29.74	1.07	0.78	0.50
NICARAGUA	322.18	335.35	334.41	324.27	0.50	-0.06	-0.61
PANAMA	59.66	71.91	78.64	83.66	2.36	1.80	1.25
PARAGUAY	354.54	397.25	416.83	427.40	1.43	0.97	0.50
PERU	610.42	678.96	699.40	694.20	1.34	0.60	-0.15
SURINAME	50.34	56.44	59.79	62.47	1.44	1.16	0.88
TRINIDAD ETC	220.92	248.94	264.45	276.95	1.50	1.22	0.93
URUGUAY	90.20	87.69	85.19	81.84	-0.35	-0.58	-0.80
VENEZUELA	475.36	460.06	445.71	428.16	-0.41	-0.63	-0.80
LATIN AMERICA	25883.71	27946.13	28967.34	29662.05	0.96	0.72	0.48
EGYPT	1467.60	2193.55	2733.70	3302.04	5.15	4.50	3.85
LIBYA	245.02	252.97	256.15	257.43	0.40	0.25	0.10
SUDAN	73.66	109.32	146.86	206.99	5.06	6.08	7.11
AFR. NEAR EAS	1786.28	2555.84	3136.71	3766.47	4.58	4.18	3.73
AFGHANISTAN	400.00	435.21	458.77	483.60	1.06	1.06	1.06
BAHRAIN	41.60	47.79	51.17	53.78	1.75	1.38	1.00
CYPRUS	122.00	132.61	137.40	140.00	1.05	0.71	0.38
IRAN	462.24	449.38	435.36	418.22	-0.35	-0.63	-0.80
IRAQ	362.34	399.13	418.16	432.05	1.22	0.94	0.66
JORDAN	84.78	124.05	153.91	186.74	4.87	4.41	3.94

Table A5 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 CUM)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
KUWAIT	90.54	84.91	81.56	78.35	-0.80	-0.80	-0.80
LEBANON	95.40	89.46	85.94	82.56	-0.80	-0.80	-0.80
SAUDI ARABIA	1222.48	1146.40	1101.27	1057.92	-0.80	-0.80	-0.80
SYRIA	179.22	228.91	254.92	271.20	3.11	2.18	1.25
TURKEY	3957.80	4946.65	5609.80	6275.77	2.83	2.55	2.27
YEMEN DR	40.44	52.03	61.72	74.22	3.20	3.48	3.76
ASIA NEAR EAST	7058.84	8136.52	8849.98	9554.43	1.79	1.70	1.54
NEAR EAST	8845.12	10692.36	11986.69	13320.90	2.40	2.31	2.13
BANGLADESH	179.08	209.66	231.36	255.32	1.99	1.99	1.99
BRUNEI	86.98	106.60	118.85	130.10	2.58	2.20	1.82
BURMA	306.20	345.61	364.32	375.29	1.52	1.06	0.60
HONG KONG	383.90	435.88	466.34	493.04	1.60	1.36	1.12
INDIA	10991.74	14870.26	18367.59	23197.66	3.85	4.32	4.78
INDONESIA	4379.68	6053.63	7713.64	10227.02	4.13	4.97	5.80
LAOS	18.76	24.48	29.58	36.53	3.38	3.85	4.32
MACAU	3.20	3.72	4.06	4.41	1.89	1.78	1.66
MALAYSIA	3561.48	4614.92	5305.18	5962.02	3.29	2.83	2.36
NEPAL	220.00	251.98	276.80	306.86	1.71	1.90	2.08
OMAN	127.68	119.73	115.02	110.49	-0.80	-0.80	-0.80
PAKISTAN	175.02	217.17	232.10	231.46	2.73	1.34	-0.06
PHILIPPINES	620.82	680.45	704.18	712.07	1.15	0.69	0.22
REP OF KOREA	3006.80	4430.92	5620.98	7099.11	4.97	4.87	4.78
SINGAPORE	545.74	685.76	800.25	944.76	2.90	3.14	3.38
SRI LANKA	33.90	42.68	48.62	54.64	2.92	2.64	2.36
THAILAND	1449.18	2061.04	2523.16	3007.01	4.50	4.13	3.57
FAR EAST	26090.16	35154.48	42922.03	53147.80	3.80	4.07	4.37
FIJI	78.92	92.39	101.96	112.52	1.99	1.99	1.99
FR POLYNESIA	29.84	32.87	35.17	37.62	1.22	1.36	1.36
NEW CALEDONIA	14.30	14.10	13.98	13.85	-0.18	-0.18	-0.18
PAPUA N GUINEA	110.16	128.97	142.32	157.06	1.99	1.99	1.99
SAMOA	31.58	34.36	36.22	38.18	1.06	1.06	1.06
SOLOMON ISLAND	9.80	10.66	11.24	11.85	1.06	1.06	1.06
VANUATU	2.76	2.59	2.49	2.39	-0.80	-0.80	-0.80
OTH DVPING ME	277.36	315.94	343.37	373.47	1.64	1.68	1.69
CHINA TAIW	23356.64	31148.28	35645.52	38978.86	3.66	2.73	1.80
KOREA DPR	280.20	407.09	502.84	607.38	4.78	4.32	3.85
KAMPUCHEA DEM	43.00	49.25	52.88	56.00	1.71	1.43	1.15

Table A5 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 CUM)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
MONGOLIA	387.40	437.26	471.64	508.71	1.52	1.52	1.52
VIET NAM	430.40	461.43	462.28	444.09	0.87	0.04	-0.80
ASIA CPE	24497.64	32503.31	37135.16	40595.05	3.60	2.70	1.80
ALBANIA	200.00	230.75	238.80	233.73	1.80	0.69	-0.43
BULGARIA	1589.58	1720.20	1762.58	1761.17	0.99	0.49	-0.02
CZECHOSLOVAKIA	4053.36	3965.99	3921.77	3887.38	-0.27	-0.22	-0.18
GERMAN DR	3815.20	4250.60	4558.39	4900.04	1.36	1.41	1.46
HUNGARY	1928.50	1926.03	1897.70	1843.67	-0.02	-0.30	-0.58
POLAND	6398.32	6000.11	5763.92	5537.02	-0.80	-0.80	-0.80
ROMANIA	3618.36	4236.16	4424.55	4371.27	1.99	0.87	-0.24
USSR	90460.33	94052.81	94241.06	92334.17	0.49	0.04	-0.41
E EUROPE USSR	112063.65	116382.66	116808.77	114868.46	0.47	0.07	-0.33
CENTR PLANNED	136561.28	148885.97	153943.94	155463.50	1.09	0.67	0.20
WORLD	437539.19	469639.53	485682.75	497115.47	0.89	0.67	0.47

Table A6. Projections of consumption of wood-based panels based on the subjective/ statistical scenario.

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CANADA	3609.16	4409.44	4852.17	5234.89	2.54	1.93	1.53
UNITED STATES	28426.74	31946.87	34395.51	37064.68	1.47	1.49	1.51
N AMERICA	32035.90	36356.31	39247.68	42299.57	1.59	1.54	1.51
AUSTRIA	717.40	885.68	997.23	1108.22	2.67	2.40	2.13
BELGIUM-LUX	920.70	1090.05	1195.56	1294.13	2.13	1.86	1.60
DENMARK	607.08	714.98	781.61	843.26	2.07	1.80	1.53
FINLAND	665.72	843.58	965.47	1090.63	3.00	2.74	2.47
FRANCE	3081.94	3668.02	4036.31	4383.49	2.20	1.93	1.66
GERMANY FR	7629.16	9272.20	10338.02	11376.01	2.47	2.20	1.93
GREECE	373.14	522.17	630.13	743.70	4.29	3.83	3.37
ICELAND	27.60	32.34	35.35	38.14	2.00	1.80	1.53
IRELAND	155.16	189.05	209.87	228.60	2.50	2.11	1.72
ITALY	2862.88	3488.14	3872.38	4217.89	2.50	2.11	1.72
MALTA	6.70	10.15	13.15	17.05	5.32	5.32	5.32
NETHERLANDS	1105.44	1350.56	1510.74	1667.90	2.54	2.27	2.00
NORWAY	634.76	860.39	1030.50	1222.31	3.87	3.67	3.47
PORTUGAL	277.05	419.57	526.25	638.57	5.32	4.63	3.94
SPAIN	1483.14	1890.80	2159.58	2420.34	3.08	2.69	2.31
SWEDEN	1232.22	1505.45	1667.52	1799.05	2.54	2.07	1.53
SWITZERLAND	648.86	772.25	849.79	922.88	2.20	1.93	1.66
UNITED KINGDOM	3351.04	4570.28	5522.59	6642.22	3.95	3.86	3.76
YUGOSLAVIA	1177.40	1752.19	2197.68	2696.39	5.09	4.63	4.17
W EUROPE	26957.38	33837.83	38539.72	43350.78	2.88	2.64	2.38
AUSTRALIA	909.60	1128.84	1258.60	1366.85	2.74	2.20	1.66
NEW ZEALAND	239.58	298.60	336.24	371.51	2.79	2.40	2.02
OCEANIA	1149.18	1427.44	1594.84	1738.37	2.75	2.24	1.74
ISRAEL	159.10	216.99	257.34	298.11	3.95	3.47	2.99
JAPAN	9511.86	12781.21	15161.02	17735.04	3.76	3.47	3.19
SOUTH AFRICA	375.92	503.30	577.68	633.91	3.71	2.80	1.87
OTH DEV.PED ME	10046.88	13501.50	15996.04	18667.06	3.76	3.45	3.14
ALGERIA	130.14	196.89	259.51	348.01	5.31	5.68	6.04
ANGOLA	29.90	46.08	60.74	80.52	5.56	5.68	5.80
BENIN	1.50	2.31	3.05	4.04	5.56	5.68	5.80
BURUNDI	0.62	1.10	1.64	2.56	7.39	8.36	9.34
CAMEROON	43.82	75.40	107.07	153.77	7.02	7.26	7.51

Table A6 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CAPE VERDE	0.86	1.56	2.37	3.77	7.75	8.73	9.70
CENTRAL AF REP	3.72	5.08	6.35	8.18	3.97	4.58	5.19
CHAD	0.90	1.35	1.79	2.44	5.19	5.80	6.41
CONGO	11.22	17.94	22.84	27.59	6.04	4.95	3.85
EQ GUINEA	1.25	1.76	2.17	2.68	4.34	4.34	4.34
ETHIOPIA	14.72	21.46	27.00	33.78	4.82	4.70	4.58
GABON	130.66	190.53	235.66	284.76	4.83	4.34	3.86
GAMBIA	0.40	0.63	0.84	1.09	5.92	5.68	5.43
GHANA	65.56	76.92	84.50	92.26	2.02	1.90	1.77
GUINEA	2.00	2.86	3.58	4.48	4.58	4.58	4.58
IVORY COAST	76.08	123.92	158.67	191.64	6.29	5.07	3.85
KENYA	92.30	140.94	179.42	223.14	5.43	4.95	4.46
LIBERIA	2.82	3.96	4.84	5.85	4.34	4.09	3.85
MADAGASCAR	1.79	2.79	3.87	5.66	5.68	6.78	7.87
MALAWI	11.58	24.95	40.31	65.13	10.07	10.07	10.07
MALI	0.90	1.40	1.85	2.43	5.68	5.68	5.68
MOROCCO	111.82	166.07	210.18	262.92	5.07	4.82	4.58
MOZAMBIQUE	4.86	6.95	8.55	10.32	4.58	4.21	3.85
NIGER	0.40	0.72	1.02	1.40	7.63	7.14	6.65
NIGERIA	250.90	404.93	539.90	711.60	6.17	5.92	5.68
REUNION	2.62	4.23	5.67	7.51	6.19	5.99	5.80
RWANDA	2.03	3.53	4.92	6.80	7.14	6.90	6.65
SENEGAL	5.18	7.01	8.36	9.87	3.85	3.60	3.36
SIERRA LEONE	1.40	1.76	2.00	2.25	2.87	2.63	2.38
SOMALIA	2.50	3.82	5.27	7.70	5.43	6.65	7.87
SWAZILAND	0.36	0.76	1.20	1.88	9.83	9.58	9.34
TANZANIA	7.03	9.51	11.35	13.39	3.85	3.60	3.36
TUNISIA	86.88	136.40	176.68	223.61	5.80	5.31	4.82
UGANDA	3.77	5.29	6.46	7.80	4.34	4.09	3.85
UPPER VOLTA	1.72	2.39	2.98	3.74	4.21	4.46	4.70
ZAIRE	13.06	17.01	19.83	22.85	3.36	3.12	2.87
ZAMBIA	17.68	23.47	27.69	32.28	3.60	3.36	3.12
ZIMBABWE	38.66	51.32	60.54	70.58	3.60	3.36	3.12
AFRICA	1173.61	1785.01	2300.65	2940.27	5.38	5.21	5.03
ARGENTINA	374.74	446.32	488.46	526.99	2.21	1.82	1.53
BAHAMAS	4.84	7.06	8.69	10.40	4.83	4.25	3.66
BARBADOS	22.14	33.82	42.66	52.05	5.44	4.75	4.06
BELIZE	1.74	2.71	3.45	4.24	5.68	4.95	4.21
BOLIVIA	22.36	25.25	27.24	29.39	1.53	1.53	1.53
BRAZIL	2200.02	3032.25	3662.32	4371.58	4.09	3.85	3.60
CHILE	98.82	122.10	135.51	146.20	2.68	2.10	1.53
COLOMBIA	136.12	194.77	238.01	284.11	4.58	4.09	3.60

Table A6 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
COSTA RICA	30.92	51.52	68.62	88.46	6.59	5.90	5.21
CUBA	92.34	143.64	182.85	224.76	5.68	4.95	4.21
DOMINICA	0.42	0.54	0.61	0.67	3.24	2.51	1.77
DOMINICAN REP	6.20	9.64	12.28	15.09	5.68	4.95	4.21
ECUADOR	54.32	70.76	80.56	88.49	3.36	2.63	1.90
EL SALVADOR	5.37	6.48	7.12	7.68	2.38	1.90	1.53
FRENCH GUIANA	1.58	2.41	3.04	3.71	5.44	4.75	4.06
GUADELOUPE	4.04	6.34	8.18	10.26	5.80	5.22	4.63
GUATEMALA	9.84	16.78	22.63	29.48	6.90	6.17	5.43
GUYANA	0.90	1.28	1.58	1.94	4.46	4.34	4.21
HONDURAS	6.64	9.86	12.19	14.55	5.07	4.34	3.60
JAMAICA	18.12	23.38	26.46	28.89	3.24	2.51	1.77
MARTINIQUE	2.96	4.16	5.00	5.85	4.34	3.76	3.18
MEXICO	732.86	989.93	1155.42	1304.07	3.83	3.14	2.45
NETH ANTILLE	8.94	13.53	17.04	20.89	5.31	4.73	4.15
NICARAGUA	12.40	16.00	18.11	19.77	3.24	2.51	1.77
PANAMA	15.44	24.02	30.57	37.58	5.68	4.95	4.21
PARAGUAY	8.92	12.64	15.27	17.91	4.46	3.85	3.24
PERU	58.84	82.63	97.48	109.67	4.34	3.36	2.38
SURINAME	8.52	13.71	17.97	22.91	6.13	5.55	4.98
TRINIDAD ETC	62.66	101.28	133.02	169.95	6.19	5.60	5.02
URUGUAY	14.60	17.72	19.55	21.10	2.45	1.99	1.53
VENEZUELA	206.80	248.74	272.95	294.48	2.33	1.87	1.53
LATIN AMERICA	4224.41	5731.27	6814.85	7963.12	3.89	3.52	3.16
EGYPT	190.76	389.63	585.44	845.57	9.34	8.48	7.63
LIBYA	85.36	104.83	118.42	132.91	2.60	2.47	2.33
SUDAN	11.96	24.21	39.99	70.17	9.22	10.56	11.90
AFR. NEAR EAS	288.08	518.68	743.86	1048.64	7.63	7.48	7.11
AFGHANISTAN	86.40	117.97	143.32	174.12	3.97	3.97	3.97
BAHRAIN	35.66	48.09	57.04	66.57	3.81	3.47	3.14
CYPRUS	26.70	40.44	50.72	61.54	5.32	4.63	3.94
IRAN	258.40	313.61	344.13	371.28	2.45	1.87	1.53
IRAQ	47.70	74.15	95.07	118.59	5.67	5.09	4.52
JORDAN	43.12	85.74	128.11	186.08	8.97	8.36	7.75
KUWAIT	112.90	127.48	137.54	148.39	1.53	1.53	1.53
LEBANON	52.76	59.57	64.27	69.34	1.53	1.53	1.53
QATAR	18.30	20.66	22.29	24.05	1.53	1.53	1.53
SAUDI ARABIA	617.48	697.23	752.23	811.56	1.53	1.53	1.53
SYRIA	58.38	97.74	127.35	156.54	6.65	5.43	4.21
TURKEY	499.96	814.35	1085.78	1422.84	6.29	5.92	5.56

Table A6 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
YEMEN DR	2.42	4.09	5.77	8.29	6.78	7.14	7.51
ASIA NEAR EAST	1860.18	2501.13	3013.62	3619.19	3.77	3.80	3.73
NEAR EAST	2148.26	3019.81	3757.48	4667.83	4.35	4.47	4.43
BANGLADESH	12.46	18.68	24.05	30.98	5.19	5.19	5.19
BHUTAN	0.12	0.19	0.24	0.30	5.80	5.19	4.58
BRUNEI	13.68	19.52	23.99	29.01	4.55	4.21	3.87
BURMA	14.60	20.89	25.38	29.94	4.58	3.97	3.36
HONG KONG	236.88	388.52	517.35	673.28	6.38	5.89	5.41
INDIA	219.80	395.82	588.08	898.62	7.63	8.24	8.85
INDONESIA	926.39	1714.17	2648.85	4303.37	8.00	9.09	10.19
LAOS	3.98	6.85	9.89	14.70	7.02	7.63	8.24
MACAU	6.30	10.87	15.11	20.79	7.05	6.82	6.59
MALAYSIA	544.58	928.58	1259.62	1660.21	6.90	6.29	5.68
OMAN	72.90	82.32	88.81	95.81	1.53	1.53	1.53
PAKISTAN	118.14	190.67	235.75	266.81	6.17	4.34	2.51
PHILIPPINES	258.86	356.78	423.38	487.77	4.09	3.48	2.87
REP OF KOREA	852.66	1710.74	2628.80	4016.98	9.09	8.97	8.85
SINGAPORE	339.00	675.43	1062.51	1708.77	9.00	9.48	9.97
SRI LANKA	23.86	39.23	52.61	69.34	6.41	6.04	5.68
THAILAND	207.64	398.32	585.16	830.89	8.48	8.00	7.26
FAR EAST	3851.85	6957.56	10189.58	15137.57	7.67	7.93	8.24
FIJI	1.26	1.89	2.43	3.13	5.19	5.19	5.19
FR POLYNESIA	7.90	12.22	16.27	21.67	5.60	5.89	5.89
NEW CALEDONIA	3.60	4.49	5.15	5.91	2.79	2.79	2.79
PAPUA N GUINEA	12.04	18.05	23.24	29.93	5.19	5.19	5.19
SAMOA	0.88	1.20	1.46	1.77	3.97	3.97	3.97
SOLOMON ISLAND	3.00	4.10	4.98	6.05	3.97	3.97	3.97
OTH DVPING ME	28.68	41.94	53.53	68.46	4.87	5.00	5.04
CHINA TAIW	1635.16	2891.62	3900.04	4964.76	7.39	6.17	4.95
KAMPUCHEA DEM	1.80	2.62	3.26	3.99	4.82	4.46	4.09
MONGOLIA	4.50	6.44	8.05	10.08	4.58	4.58	4.58
VIET NAM	30.60	41.00	46.68	50.36	3.73	2.63	1.53
ASIA CPE	1672.06	2941.69	3958.04	5029.19	7.32	6.11	4.91
ALBANIA	9.60	14.13	16.76	18.52	4.95	3.48	2.02
BULGARIA	522.28	784.08	962.00	1122.83	5.21	4.17	3.14

Table A6 (continued).

COUNTRY/ REGION	PROJECTED CONSUMPTION (1000 MT)				AVERAGE ANNUAL GROWTH RATE (%)		
	PERIOD OR YEAR				PERIOD		
	1980-1984	1990	1995	2000	1980-1989	1990-1994	1995-2000
CZECHOSLOVAKIA	1313.90	1613.02	1842.32	2114.17	2.60	2.69	2.79
GERMAN DR	1521.02	2405.13	3217.39	4323.70	5.89	5.99	6.09
HUNGARY	466.52	597.43	678.08	748.29	3.14	2.56	1.99
POLAND	2056.62	2322.25	2505.42	2703.04	1.53	1.53	1.53
ROMANIA	1260.08	1888.83	2267.94	2536.32	5.19	3.73	2.26
USSR	10589.68	14688.96	17240.36	19349.39	4.17	3.25	2.33
E EUROPE USSR	17739.70	24313.82	28730.29	32916.27	4.02	3.39	2.76
CENTR PLANNED	19411.76	27255.51	32688.33	37945.45	4.33	3.70	3.03
WORLD	101027.91	129914.19	151182.70	174778.48	3.19	3.08	2.94