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THE MARKETING OF LESSER-KNOWN TROPICAL

HARDWOODS IN THE U.K.

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ABSTRACT

The present study set out to identify and analyse the relative importance of the various factors which affect the acceptance of lesser-known Tropical Hardwood species. Two different groups of factors were analysed, physical/technical factors and marketing factors, emphasis was placed on the second group.

To achieve the above stated objective, it was regarded as essential to examine the two main market intermediaries, the merchants/importers and the end-users. Therefore, two main surveys were conducted:

(a) Merchants/importers. The effect of the various marketing efforts on the eventual outcome of lesser-known specie introductions were examined. A further, smaller, survey was found to be necessary on the perception and beliefs of the sales-staff of the importing firms. Their perception of well established and lesser-known species was examined.

(b) End-users. The perceptions of various end-users/end-use segments was examined. The underlying reasons which dictate the choice of different species and the influence of the various marketing activities on such decisions were established.

The research was based on postal questionnaires (different ones for each survey) which were designed following depth interviews and pilot studies.

Following a detailed analysis and interpretation of the replies to the surveys, an attempt has been made to apply these findings in order to design a meaningful marketing strategy. A total marketing plan is proposed and particular emphasis is placed on screening the potential of lesser-known species and the communication mix to be used during the stages of introduction.

One of the main findings was the degree of uniqueness of each particular introduction of a lesser-known specie. This finding, together with the structure of the customers of each merchant and the finding that what constitutes a lesser-known specie is a matter of perception, presented a very complex matrix of alternative marketing strategies. But one thing which has become clear is that a well designed framework is absolutely necessary if lesser-known specie(s) are to be marketed successfully.

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CHAPTER 1

INTRODUCTION

This chapter states the objectives, limitations and structure of this study. It also provides some useful definitions of the meaning of the term Lesser-known species.

1.1 INTRODUCTION

1.1.1. Objectives

This study attempts to analyse the behaviour of two of the channel intermediaries of the Timber Trade, merchants/importers and end-users, in relation to lesser-known tropical Hardwoods. An analysis of successful and unsuccessful introductions of such species has been investigated so that meaningful conclusions can be drawn about the contributing factors that lead to such outcomes.

Therefore the main objectives of this research are:

- (a) to identify the rationale and contributing elements behind the decisions by merchants/importers to introduce lesser-known tropical Hardwoods into the U.K. market and the special procedures that are undertaken in promoting such species.
- (b) to assess the influence that the various marketing tactics had on the eventual outcome.
- (c) to establish an order of potential effectiveness of the various marketing elements
- (d) to derive an overall analysis of market trends, beliefs and attitudes from both merchants/importers and end-users.
- (e) finally, to combine the findings in order to propose a meaningful and operational marketing plan which could be used as a framework for any future introductions of lesser-known species.

1.1.2. Reasons for undertaking such research

The Timber industry has been experiencing technological and economic changes together with strong competition from other materials. Therefore, the need to find new products and successfully introduce them into the market becomes obvious.

This need is more urgent for Hardwoods since such material experiences additional strong competition from materials within the Trade i.e. particleboards etc. The present study is a marketing rather than a technological look into the ways that lesser-known species can be successfully introduced into the U.K. market.

Looking into the future, we have to consider the importance of new products (in this instance lesser-known Tropical Hardwoods). One of the first studies (Booz, Allen & Hamilton, 1963) defined the need for such products, as a

- i) major contributor to company growth
- ii) primary influence on profit performance
- iii) key factors in business planning.

Such new products (in this case lesser-known Tropical species) will have to be related to the current product-mix that various companies offer and their past experiences. Perhaps the best place to begin improving one's product development efforts is to study one's past failures and analyse the reasons behind them (Cooper, 1975).

It is widely accepted that such lesser-known species present many problems and have not yet received the appropriate attention by any systematic study, especially by those concerned with the marketing aspect. In the words of Erfurth & Russche (1976), "... there is hardly any subject related to

tropical forestry which has found such widespread interest in recent years than lesser-used wood species. Yet very little information clarifying the magnitude of the problem has become available..." And even less information has been gathered about the role that marketing strategies played in relation to the eventual outcome.

Two factors stand out, i) the change in the domination of the supplying areas from West Africa to South-East Asia and South America, ii) the heterogeneity of the botanic composition (particularly valid for the South American tropic moist forests) and the multiplicity of species.

A number of studies have been conducted in order to present useful information about those lesser-known species, that inevitably will come into the market. Probably the most extensive one was conducted by Erfurth & Rusche (1976) where a vast number of potentially marketable lesser-known species were compared and evaluated against performances of well established species. Looking at the same problem Wassink (1979-a-) established choice patterns for tropical Hardwood imports into seven European countries (including the U.K.) in order to establish those attributes that any lesser-known specie should fulfill in order to have any chance to be introduced successfully.

All the above works (for a more extensive appraisal see section on literature) have established necessary physical

and technological criteria, but only touched the area of how a company should: a) determine those criteria, b) obtain the appropriate information and c) employ marketing techniques in promoting such species. Therefore, I believed that some examination of the behavioural side of the problem was necessary; and set out to find the contributing factors and their relative importance, to analyse the attitudes of the people involved in the Timber Trade, to examine their perception of lesser-known species and the effect (if any) that different promotional activities had on inducing trial and/or adoption of such species.

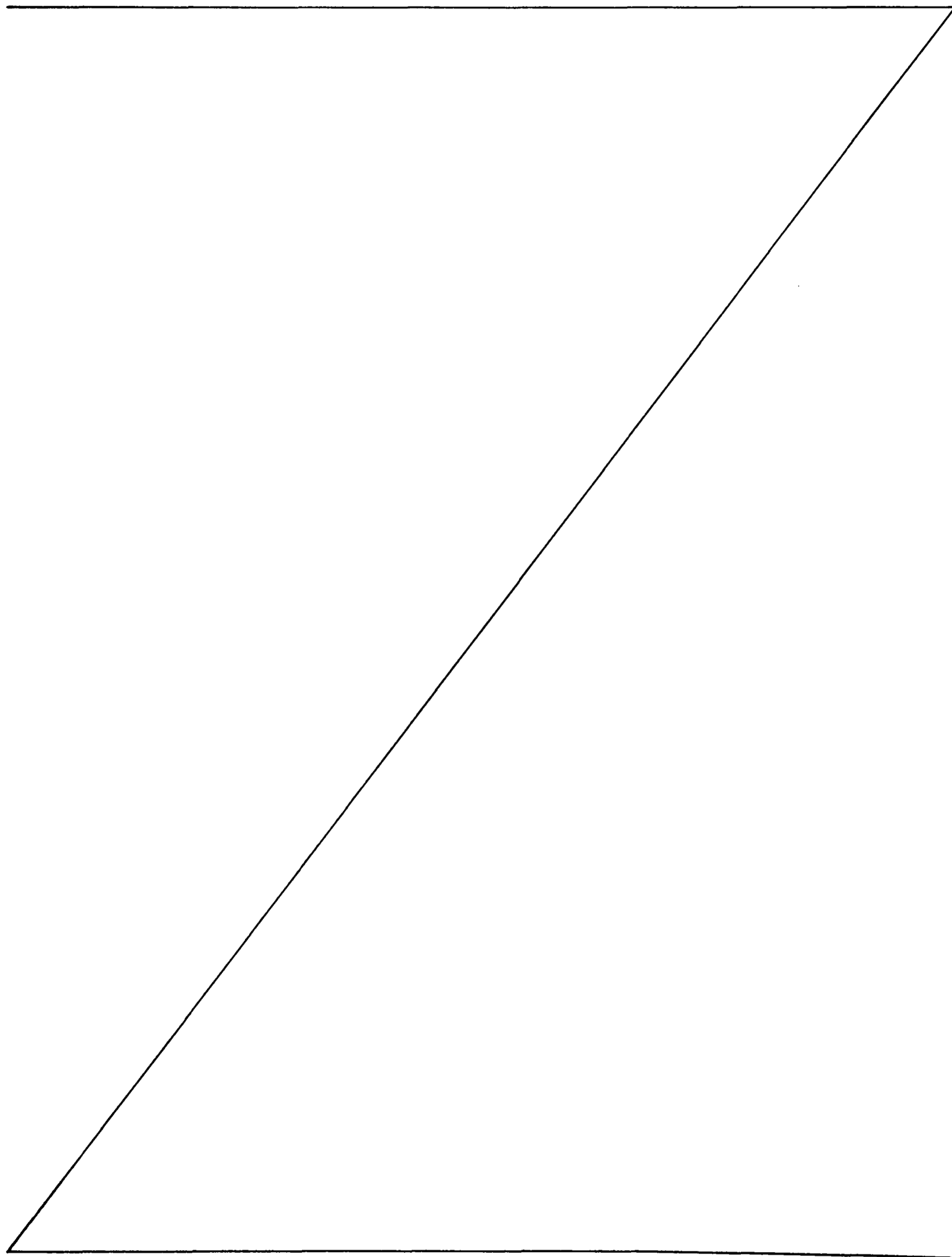
The Timber Trade is not an exception regarding the high rate of failure in new products. The root cause of many failures, as Robertson (1973) states, is "... the neglect of marketing research and preconceived ideas about marketing needs...". It is the ability of the management in general, to define or re-define new-product development strategies in an environment where cost of raw materials is likely to rise at the same time that supplies become scarce. Therefore analysis of the market that the firm operates in and the buying decision process of their customers will both be absolutely necessary in order to define a planning framework against which assessments and evaluations could be made.

1.1.3. Limitations

There are a number of limitations: i) the present research is restricted to the market of G.B., and deals only with imported tropical Hardwoods.*¹ That means that

*¹ For a complete list of countries see Appendix 1.1./1.

Hardwoods such as Beech, Oak, Ash etc. are not examined.
The reason is that any future lesser-known species will only
come from the tropics.



ii) the target market is those firms who use logs and/or lumber, although tropical Hardwoods are used in the production of paper pulp, plywood etc., such markets are not examined here,

iii) there were aspects of the trade that because of lack of any previous research had to be examined although they were not strictly within the scope of the present study (such areas are: general buying behaviour, existing interrelations of the various elements of the Trade etc.),

iv) there are various uses and references of literature without any empirical/survey results ^{to} support them. The topics covered in such a way were discussed with people actively involved in the trade and were not part of the questionnaires, this was inevitable because of lack of any previous qualitative research on similar problem areas, and also because of the obvious limitations of time and financial resources of the present research.

1.1.4. The structure of this report

For the purpose of this report, it was considered essential to examine the whole structure of the UK Hardwood Trade. This need became more apparent because of lack of data on certain aspects of the trade. Therefore a more general approach has been made followed than that suggested by the title of the paper.

The structure of the UK Hardwood Trade is discussed first. This was necessary in order to provide the background in which all Tropical Importers/Merchants operate.

Then the UK Imports of Tropical Hardwoods are examined. The results provide information about the needs, preferences, trends etc. of the end-users of Tropical Hardwoods. This section also provides some qualifications about the need of a study such as this one and the future importance of lesser-known species. Finally, in this general section, the up-to-date literature is critically examined. Three aspects become clear, firstly the increasing awareness about the problems posed by introductions of lesser-known species, secondly the lack of data on many marketing aspects of the Trade and thirdly the fact that behavioural elements of the Trade have been given very little attention up to now.

Following this overview of the Hardwood Trade, the three surveys^{*2} which were carried out during the present investigation are presented individually. For each survey the methodology of selecting the sample frame and designing the questionnaire are discussed first and some indication of the response rate is given. Then those of the findings which are directly related to lesser-known species are stated in a summarised form.

A more extensive analysis of the replies to all the questions of each individual questionnaire follows. The marketing implications of the findings are discussed in the

*2 i.e. -i- the sales staff survey: where all the people involved in the decision taking and promotion of lesser-known and well-established species of one company were surveyed

-ii- the merchants survey: where the major importing merchants were asked about their past attempts and the strategies which lead to the essential outcome of lesser-known specie introduction

-iii- the end-users survey: a selected sample of users of tropical Hardwoods was surveyed in order to establish their buying behaviour and marketing factors which influence their decision of trial of lesser-known species.

final section. It is appreciated that some parts of the questionnaires are not directly related to lesser-known species and therefore are not strictly within the limits of the study, but nevertheless they were regarded as essential in order to provide information on behavioural and marketing aspects of the Hardwood Trade. There is no doubt that there are many areas of dispute within the results of the surveys, unfortunately the data obtained could not be compared and therefore be validated against any other source(s) because there are no comparable studies. The findings are accepted on a face value basis and are presented under three main sections for each questionnaire/survey, one section about the nature of the respondents, one related to answers on questions about lesser-known species and one section about the respondent's opinions, beliefs and attitudes on general points of their Trade and Hardwoods in general.

Then the findings from each survey are compared and contrasted against each other and comparisons are made with the present schools of thought about the marketing of lesser-known Tropical Hardwood species. As far as it is possible comparable questions are examined in 'parallel' and the reasons behind the results of those comparisons are stated. Such comparisons provide useful information about the reasons behind past unsuccessful introductions and identify areas of conflict between the market sectors involved in the marketing of lesser-known species. The result is the formulation of a marketing strategy which is based on overcoming these conflicts and successfully promoting lesser-known species.

Finally, at the very end of the text, suggestions are put forwards for further research in the area of Marketing of Hardwoods and Timber in general.

1.2 LESSER-KNOWN SPECIES - DEFINITIONS

Various terms have been used to define insufficiently utilised wood species (FAO, 1974). Some of the terms are: "secondary species", "weed species", "non-commercial species", "little-used species", "lesser-known wood species", etc. But none of the above terms are associated with an exact description of the reasons which make it difficult for particular species to be accepted by the markets (U.K. or any other market for that matter) and therefore such species are labelled as lesser-known, secondary or little-used.

There are three major intermediaries involved in the production, marketing and use of such species, these are: a) the producers, b) the importers/merchants and c) the end-users. Each of the above groups have somewhat different definitions and perceptions of what a lesser-known specie represents, such differences are the results of particular interests, needs, objectives and attitudes of each group of intermediaries.

Therefore, it will be helpful to define separately what this study regards as a lesser-known specie for each of the above groups:

(a) suppliers/producers: The definition given by Erfurth & Rusche (1976) is thought as appropriate, all wood species produced in quantities below 1000m³ will be considered as lesser-used (known) species.

(b) merchants/importers: The past experience of each individual firm will be the deciding criterion here. If an importer/merchant decides to promote a species that has never in the past been introduced into the U.K. timber market then this would clearly be a case of a lesser-known species.

Also, any species that have not in the past been stocked by a particular firm, although it has been imported on a regular basis by another firm in the trade, will still be regarded as a lesser-known species (that is as far as this study is concerned); the criterion will be whether the firm regards itself as the first importer introducing the specie into the UK market and whether it undertakes all the necessary steps and procedures that are associated with the introduction of lesser-known Hardwood species. Species can be regarded as lesser-known even if they are re-introduced (following an unsuccessful past attempt by the same or another importer/merchant) into the UK market as the result of advances in certain areas like transportation, kilning, etc.

(c) end-users: The perception of what constitutes a lesser-known specie to an individual firm might be different to that prevailing in the end-use segment in which the firm belongs. Therefore, i) end-use segments: A species will be regarded as a lesser-known one as long as no firm in the particular segment has used it in the past. The species might be used for some time by some other segment(s) of the market but have never in the past been promoted to the firms of the segment in question. Also, a specie which was tried in the past and found to be unacceptable will still be regarded as a lesser-known if it is re-introduced under different conditions (i.e. better shipping conditions, more technological information about proper use of the species etc.),

ii) individual end-use firms: Any species of which an individual end-user had no past experience, even though other firms in the same end-use segment were familiar with them. The deciding factor will be the process of

adoption, if the firm has gone through all the various stages of such a process, then the species will be regarded as a lesser-known one.

This particular study deals only with importers/merchants and end-users and therefore their interests, attitudes, beliefs, etc. According to experience and knowledge about lesser-known species we can draw a diagram to show the various alternatives,

		End-users (on the whole)	
		Well-known species	Lesser-known species
Merchants/Importers	Well-known species	1	2
	Lesser-known species	3	4

(1) species which are well known to both importers/merchants and end-users: these are species that are well established, with known properties and uses. Such species have been imported into the UK market for some time and these are the ones which are becoming less available, like Utile, African Mahogany, etc.

(2) species which are well known to the importers/merchants but not to the end-users: there are three alternatives,

i) a specie which is sold to one segment of the end-users is now introduced to other segment(s); the merchant/importer has ample information about the species, he usually stocks a wide range of sizes, qualities, etc. and has solved all the problems associated with the supply and transportation of the species,

ii) a specie which is used exclusively by one customer of the importer and is now introduced to a wider variety of

customers in the same end-use segment: the suitability of the species is already established, problems of supply etc. are solved and the other end-users usually have heard about the species (although they have not used it yet),

iii) a specie which is sold in overseas markets (by a subsidiary of the UK importer/merchant) and is now introduced to the UK timber users (either to all segments or selective ones): there is no information about the reactions of the UK users, the machinery and working practices of the UK market will have to be taken into account and compared to those of the countries which use the species, there are no problems of supply etc.

(3) species which are little-known to the importers/merchants but well-known to the end-users: such cases are very rare since the traditional structure of the UK trade provides a flow of information from importers to end-users and not the other way round, the only possible case would be an individual end-user who decides to change the source of supply of a particular species which only this particular end-user is demanding; in such a case the importer/merchant will only have to solve the problem of shipping the species into the UK, there are no promotions that have to be undertaken (the demand is assured).

(4) species which are little-known to both importers and end-users: this is the question about which the present research is attempting to provide some answers. A specie which is introduced into the UK market for the very first time is little-known in terms of technical and natural properties. The supply side is not yet solved satisfactorily and end-users have no information about its processing problems and its possible applications.

CHAPTER 2

THE U.K. TROPICAL TIMBER TRADE

Here the traditional use of the marketing elements (product, promotion, distribution and price) is discussed and some trends in the imports of Tropical Hardwoods are presented.

2.1.1. THE PRODUCT

During the initial stages the product is in log form. The logs are either imported into the UK in their Round Solid form or they are first converted into lumber before they are shipped. Log imports are currently restricted to countries from W. Africa, while most of the lumber which is imported from the Pacific and S.E. Asia is imported as kiln dried. (For more information see section on UK timber imports- .)

It is true to say that the generic product is basically undifferentiated. Most of the UK importers of Tropical Hardwoods follow the same channels and procedures in order to obtain their supplies. This has become more apparent since most of the forest concessions which were granted by the producing countries were withdrawn; currently, there is little control over the actual production of the material by the UK importers.

Nevertheless, there are certain qualifications about the undifferentiated nature of Tropical Hardwoods:

- (a) the quality of the logs is not uniform, even for logs growing side by side in the same forest, log form can and usually does vary tremendously,
- (b) species of the same family growing in different areas and marketed under the same specie name can have significantly different physical and technological characteristics (e.g. Obeche from Nigeria and Samba from the Ivory Coast, Guarea from Liberia and Bosse from Zaire, etc.),
- (c) the quality of work done before shipment (this applies mainly to areas like conversion of logs into lumber, kilning etc., but it is also important

- when preservatives are used for low durability logs) can vary from one producer to another,
- (d) sizes, grades, availability etc. of stock at the yard of the UK merchant are all very important competitive factors, some end-use segments require very strict specifications or/and a wide variety of material.
 - (e) prompt collection of the parcels from the ports of origin, freshly cut logs and proper storage during the transportation will ensure the quality of the timber at arrival.

It is therefore obvious that, because of the almost non-existent control over the actual production, importers/merchants have to find other ways of differentiating themselves. Any competitive advantage will come through a careful examination of their supplying sources so as to improve the quality of their material. Such efforts frequently add to the costs.

Importers/merchants familiar with the problem of differentiating themselves from their competitors, have attempted to do so through better services to their customers (i.e. advice, fast account dealings etc.). In the near future, the rapid expansion of new markets like demand for semi-finished products, D.I.Y. market etc., will force executives to re-examine their image and structure to suit those market developments. Such developments will also provide the opportunity for aggressive marketing and product differentiation.

But any such effort should always consider that timber is a natural resource, not a man-made product, therefore it lacks absolute uniformity in physical properties. It is believed that this lack of uniformity is the main advantage (attraction) of timber over many competitive materials.

2.1.2. PROMOTION

I would like to make clear that in this section I will only outline the current methods employed by the U.K. trade in promoting tropical timber; no reference to the international practices will be made.

Promotion of tropical timber is an area which, as Carr (1979) said, the merchants are still reluctant to admit that is essential. In any case, promotional activities in the U.K. are mainly carried out by the Trade Associations reflecting the interests of the agents, importers and merchants (TTF) on the one hand and those representing the major end-users (FIRA etc.) on the other. Research and development centres like TRADA and BRE also play an active part.

The benefits of a dynamic approach to promotion are emphasised by Yavorsky (1973), who recognises the need for product differentiation, specially with the increasing emphasis towards the marketing of semi-finished products (i.e. dimension material, pre-finished products, components, parts etc.). Even before such market trends became evident, Becker (1971) pointed out the need for timber merchants to remain competitive and satisfy the demand of an ever changing market, he stated that there should be "... vigorous promotion and constant analysis of the trends/changes of the trade...". In a research he (Becker, 1971) found that timber consumers at any level (i.e. architects, builders, the public, etc.) are always particularly interested in products (timber) and services which permit them to reduce or limit their costs. His recommendations were: (i) advertising which emphasises product identity through the use of brand names, (ii) quality labels so as to achieve a shift from an anonymous commodity to identifiable products.

Now lets examine closer the promotional techniques employed by the Timber Trade:

2.1.2.1. Advertising: two alternatives (not mutually exclusive) can be identified here,

- i) small advertisements in periodicals for distinct target groups, e.g. small merchants, builders, etc.; such advertisements form a two-step communication, usually are composed of only little text and have no illustrations
- ii) large-size publications in media with a wide circulation; such forms of advertising have been very limited (only one firm I have seen advertising in the Sunday Press, there was no mention of any specific products, it was more of an image building effort). On a more general way, some years ago TRADA attempted to promote the image of "wood" and the promotion was judged to be successful. But the aim was not to promote a specific specie; therefore we cannot say how effective a similar attempt will be for individual wood-based products.

Some large end-users, mainly furniture manufacturers, have been using the national press for their campaigns but again the aim is to promote the end-product, no reference or particular emphasis is placed upon the fact that the product is made out of Hardwood or Softwood etc. The only evidence about the effectiveness of advertising comes again from Becker (1973), he mentions the results of an image-building advertising campaign in the German and Swiss T.V. which proved to be discouraging because of problems in measuring feedback.

2.1.2.2. Sales Promotions: This area covers a number of promotional techniques, the following are just a few of those which the U.K. Timber Trade uses more often,

(i) Printed material, i.e. booklets, leaflets, etc. on properties and technological information. Such material has been extensively used by individual firms during the introductory stages of lesser-known species. There are also examples of individual firms publishing their own periodical with general information and technical data. For some time now, research establishments have been producing a large volume of printed information, but I have found (through my visits to various end-users) that such data does not always have the desired effect because it does not reach the target audience.

(ii) Exhibitions, shows, etc., during which a direct contact with prospective customers is possible, and technical data, samples, advice etc. can be exchanged; but my personal experience during the last two Interbuild exhibitions has been that such activities make very little impact, there were only some encouraging contacts in the overseas markets.

(iii) There are certain sections of the target groups which experience has showed that cannot be reached to any significant degree by either printed material or advertisements; such people like interior decorators, architects, building engineers and other similar groups of professionals are very important to the application of timber, therefore establishments like TRADA, BRE and IWSc organise seminars and meetings specifically designed to promote uses of timber to such people.

2.1.2.3. Personal Selling: This has traditionally been the main form of timber promotion; the nature and importance of such activity varies with the product line(s) offered and the buying characteristics of the customers. As Rich (1980-a) stated, the changing orientation of many forest-product companies from being customer orientated to placing greater emphasis on resources, makes the picture even more complex.

The role of personal selling, under different product-customer circumstances can be illustrated by Fig. 2.1./1. (p.18).

Rich (1970) says that there is an "increasing degree of creative selling" along the two dimensions of customer buying characteristics and product characteristics. Although it is not in the original text, I believe that the implied assumption is that the position of the various products is not a rigid one, but it moves on a vertical, "creative selling", axis according to the particular characteristics of the customer-product combination. That is, a routine call by an existing customer requiring various standard sizes of a well stocked and/or known specie will create few problems and therefore is represented at point (1), while the same product when it is promoted to a new customer will be represented by the position (2) on the table and so on. On the other extreme, trying to persuade an end-user, who had no previous dealings with a supplier, either to switch his source of supply or purchase an alternative specie to the one he has been used to, will require much persuasion and a high degree of "creative selling". When it comes to entirely

Fig. 2.1./1. Selling Grid

Customer buying characteristics (range from one statement to a combination of statements) ^{a/}	Commodity	Upgraded Commodity	Standard product	Custom Product	System
Contact initiated by the customer; repeat business; bought on price to fulfill an evident need; no technical or managerial form of service needed; single buying influence at low management level	→ <u>Position(1)</u> Standard lumber and plywood items	Packaged pan panelling	Pre-finished panelling	Cut stock; prefabricated components	Roof trusses; wall panels
Contact initiated by the salesman; new business; service required before, during and after the sale; high degree of managerial and technical skill required to identify and solve customer problems; multiple buying influence including top-level executives	→ <u>Position(2)</u> Unusual sizes or species of lumber for special uses		Ceiling tile	Glulam beams	
	→ <u>Position(3)</u> Lesser-known species			Double ^{a/} Glazing	
	→ <u>Position(4)</u>				

a/ Additions to the original table.

Source: Rich 1970(p.278)

new species (lesser-known), then the problems are even greater because the product is new to both the supplier and to the end-user, therefore the starting point will be somewhere around the position (3) on the table for those customers with whom there are some transactions at the present and as the supplier moves to entirely new markets and customers the problems will become more difficult to overcome and there will be a movement to a position like (4) etc.

Therefore we see that there is a degree of relativity in the positioning of a specific product on the Fig.2.1/1. the position on the horizontal (product) axis will depend on the complexity of the product and the position on the vertical (customer) axis will depend on the particular characteristics of the customer. As the two variables (product and customer) will change with time, that is the product will become more acceptable by the customer and there will be less of a need for technical service, so will their position on the table. A new customer requiring standard lumber will start at position (2) and after a certain number of orders will move to position (1) etc. As for lesser-known species, let us assume that a new customer is approached by a supplier, starting at position (4), as the two firms become more familiar with each other the position becomes (3) and as the end-user becomes more familiar with the properties of the lesser-known specie there is a further movement to position (2) and finally if all of the end-users adopt the lesser-known specie then it becomes an established one and moves to position (1).

Personal selling has to consider the above factors so as to adjust its approach to suit the particular circumstances.

2.1.3. DISTRIBUTION

The traditional Agent-Merchant-End user structure of the timber trade has resulted in certain changes in the distribution pattern of Tropical Hardwoods into the U.K.

This section presents the traditional structure of the distribution channels and the recent developments which have taken place in the trade.

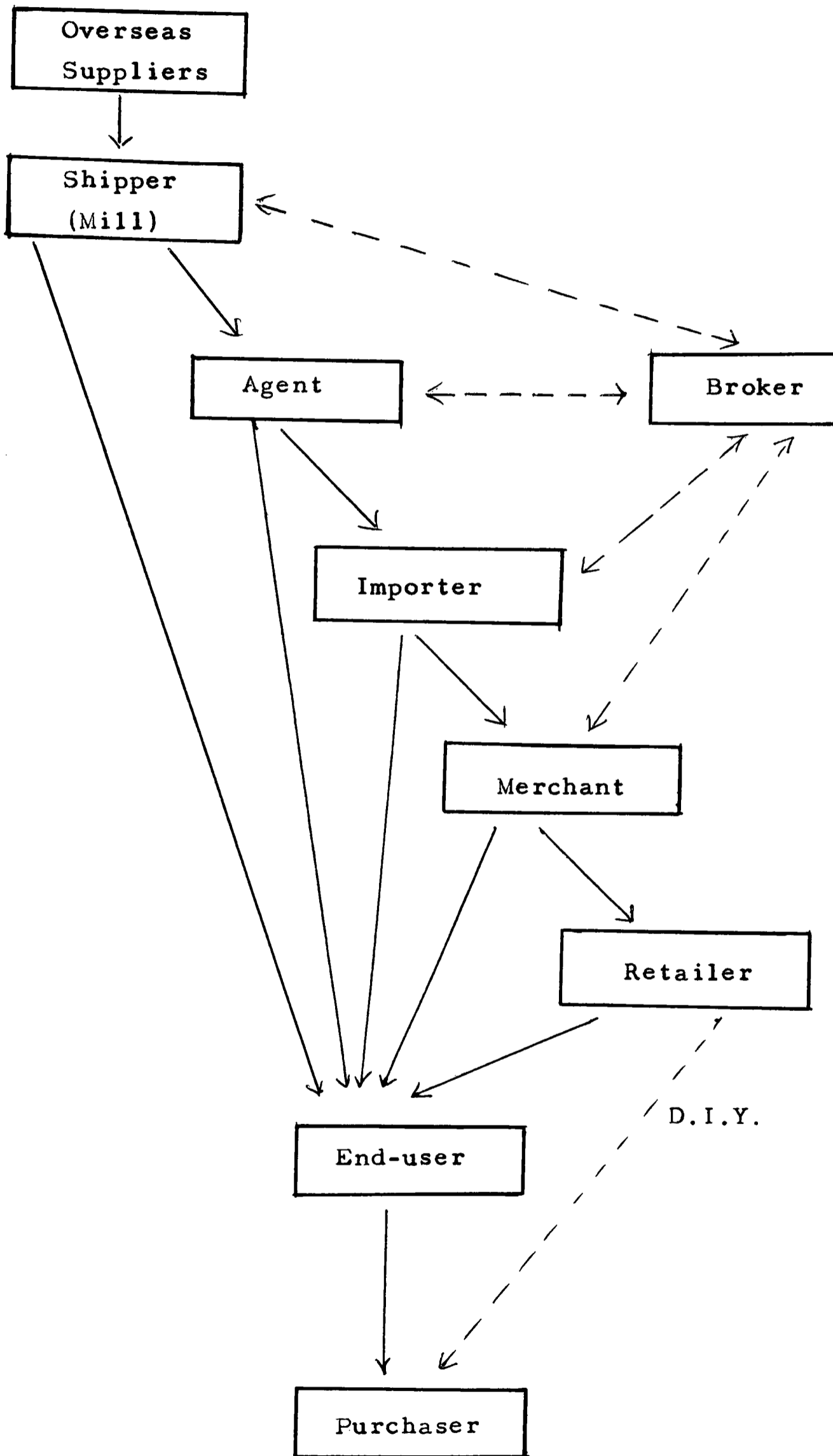
2.1.3.1. Channels of distribution

The traditional distribution channels of the U.K. market are those illustrated in Fig.2.1/2 (Mallinson & Leigh, 1965). The distribution has been viewed as a step-by-step physical movement of materials with ownership or risk or sales effort transferred successively through the structure mentioned. At the same time a certain transformation of material takes place (Peck, 1973) as the timber moves through the various stages of the channel, Fig.2.1/3.

For the U.K. market, the shipper obtains the material in the tropical producing country and offers it for sale overseas. He may own forests or he may just convert logs into lumber in his saw-mill. In West Africa shippers of sawnwood are generally also the sawmillers while in the Far East these two functions are more often separate. Because of the great distances involved and because the U.K. market is very fragmented, the shipper employs an agent to sell his product for him. He pays the agent a commission^{*1} of a percentage of the f.o.b. or c.i.f. price of the sale. GATT (1967) stressed the importance of mutual confidence in such transactions, and

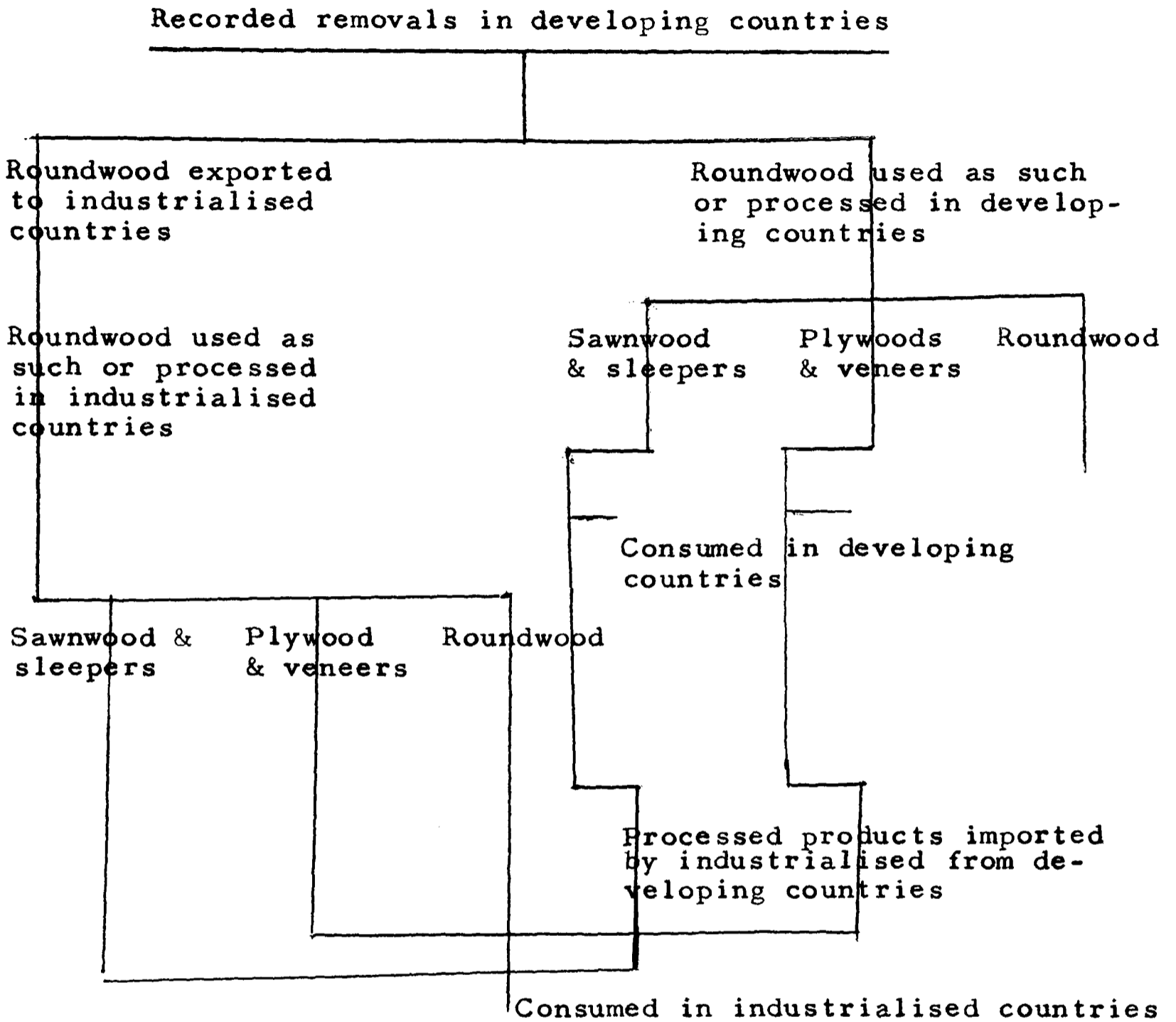
*1 This commission is usually 4%.

Fig. 2.1/2



General Public

Fig. 2.1/3



(Peck 1973)

UCNW (1969) stated that it would probably be impossible to sell without the intermediary role of the timber agent. Traditionally the agent never owns the timber, the shipper makes his contracts with the importers and is generally paid at the time of export by a letter of credit from the agent. The importer is then usually financed by the agent for a period of approximately three months, at an interest rate of 1% above the base lending rate. The importer now buys from the shipper through the agent, he purchases on a general specification covering a number of the sizes and qualities that the shipper offers. He stocks timber for sale through the merchant to the end-users. Usually he places a contract without even having seen the timber, many months in advance and the price depends on market conditions, exchange rates and specifications. The merchant buys from the importer, although the importer is often a merchant himself. It is important therefore to distinguish between timber merchants who stock, re-sort and sell in small quantities specific sizes and qualities and builder's merchants who sell all building materials including small quantities of timber. Then come the end-users, the consumers (i.e. joiners, cabinet makers, builders etc.); they have specific requirements for size and quality and in some cases will only accept such specifications. The end-product is then sold to the general public. Finally, regarding the role of the timber broker, he is usually employed by an importer to find buyers for unwanted stocks, but the importance of such intermediaries is very small regarding tropical Hardwoods.

In real life the trade structure is not a clear-cut case of activities. Merchants often sell to each-other, importers

sell to big end-users directly etc. It is becoming a frequent event that traditional intermediaries are by-passed and a more direct link with exporters is gradually emerging. Therefore, it might be more realistic to view distribution as a series of flows (Rich, 1970) and analyse the transactions on the basis of:

- a) flow of materials
- b) flow of ownership
- c) flow of payment
- d) flow of capital
- e) flow of information.

Such an approach will be more useful to the individual members of each stage of the channel, in order to provide a guide to his own position against the other members of the chain.

2.1.3.2. New institutions and functions

A number of factors have been causing changes in the traditional structure described above. Developments like the increasing importance of the repair and remodelling market (DIY), the introduction of a large number of new products, greater pressure to boost sales volume of established products and commodities, the trend towards larger production units, advancing technology in transportation and communications and finally the gradual effort towards a better utilisation of timber as a raw material. Such developments have produced a certain degree of intermediary stage bypassing. For example, some large end-users buy directly from agents or even have their own buying department that deals with the shippers. Also increasing horizontal and vertical integration

has been taking place.

The above developments are the result of a conscious effort by the firms in the trade to exercise a larger degree of control over their distribution network and to utilise their resources in a more efficient way. To put all the above together, the major timber market developments in the last 15 years have been (Mallinson, 1979) -

(a) the formation of major groups (horizontal integration) which reduce the number of companies trading independently; such integration has been viewed by True (1980) as resulting in a more professional approach, although he also adds "... only a few companies have been fully aware of the true meaning of marketing..."

(b) some of the major enterprises have absorbed or developed production facilities for joinery to be supplied to the small builder down to the DIY purchaser; Carr (1979) pays greater emphasis on a vertical integration between merchants and builders than any other combination

(c) other firms have developed their own outlets to incorporate builders merchanting and have set out to take a substantial stand in the DIY retail trade

(d) some have concentrated on wholesaling and supply through their own facilities down to the discriminating smaller timber user but do not go into the DIY market. Some of these tend to increase their overseas interests.

We see that there is a trend towards prepared material. This will be speeded up by the increasing number of producing countries which are turning to local processing (Moore & Cheslyn, 1975). But for such a venture by the exporting countries to be successful it will have to be followed by

an increased level of collaboration and flow of information between the producing countries and the U.K. importers/merchants who will be prepared to promote such commodities. This highlights the question of how close the traditional supply side of the trade structure is to the end-users, so as to know their particular requirements. On the opposite side of the trade, there is an increasing number of merchants who prefer to deal on a forward basis. That is, the material is sold directly to the customer without actually being stocked in the merchants yard.

Finally, inflation, high interest rates and a general shortage of credit facilities have caused stock levels to be reduced (see table 22/11). And as Rich (1980) states, the inventory-carrying function has been pushed back to the wholesale level of the trade. Retailers prefer to buy in small quantities closer to the time of sale, but the specifications of the end-users remain the same. Therefore the merchants will still have to stock a wide range of sizes, grades, etc.

He concludes, therefore, that the larger firms which are moving more aggressively into wholesale distribution are also the ones which are strongly timber orientated rather than end-market orientated. Such firms set up a system of distribution centres so as to get the maximum return from their timber assets.

2.1.3.3. Transportation of Tropical Hardwoods

It must be recognised that timber is a product with a very high volume/value ratio, which means that shipping companies would prefer to handle a more valuable, less bulky product on which a higher rate of freight could be charged

without resistance. Ideally timber should be shipped regularly, collected promptly and delivered to the U.K. ports in good condition.

-I- Shipping services from West Africa

A group of seven shipping companies^{*2} organised into a conference by the name of U.K. West Africa Lines (UKWAL) have a virtual monopoly of the ocean transportation of Hardwoods from West Africa to the U.K. ports and therefore operate a cartel. The services that they provide are basically on an outward cargo (from the U.K. to W. Africa) and the vessels used are not specifically designed to carry timber. The freight is calculated on the basis of various set rules, according to the volume involved, the bundling etc. A minimum Bill of Lading, acceptable without penalty, of 20M3 is imposed; there is obvious preference to as large a Bill size as possible.

Looking at their schedule for the period between the 1st January and 30th June 1981, two facts become apparent,

- (a) the only ports in the U.K. with a regular service are those of London and Liverpool, with only very limited services to Hull and Dublin
- (b) there is a great discrepancy between "north and "south" range African port services,^{*3} with the "northern" range having both better service and disproportionately lower freight charges

According to Roberts (1971) the average round trip sailing time by UKWAL vessels is 85 days. Finally, the conference operates a system of rebates to protect its monopoly status,

*2 These shipping companies are: Elder Dempster Ltd., Palm Line, Nigerian National Line, Heogh Line, Black Star Line, Guinea Gulf Line, Zaire National Maritime Line.

*3 Mouadhibou/Eq. Guinea range

the "payer of freight" is granted an immediate rebate of 10%, this is paid after three months and provided that the shipper has not shipped outside the conference during that period. During my discussions it was repeatedly indicated that all these tactics have been proved to be detrimental to the expansion of the tropical timber trade from W. Africa to the U.K.

-II- Shipping services from the Malayan Peninsular and Papua New Guinea.

Until the beginning of the 70's the Far East Freight Conference (FEFC) had almost a monopoly over those routes. But when timber firms from the U.S. became involved in that market, a dramatic decline in freights appeared. There are no loyalty agreements and freights have become a matter of competition. If there is enough timber to be collected the shipping company is prepared to collect from any port. The vessels used are charter type, with a more recent development in the use of containers for the transportation of Hardwoods. A much wider range of U.K. ports is serviced, but a drawback is the fact that payments are made in U.S. dollars which sometimes causes serious fluctuations in the c.i.f. price (according to the prevailing exchange rates). Finally, for Papua New Guinea there is only one line servicing the U.K.*4

-III- Shipping services from South America

The service is run by the Brazilian Government, and it is allocated to two conferences, the Brazil-Europe Conference and the Amazone Conference. These two exclusively service the U.K. ports. No outsiders are allowed to operate, but the overall standards are not satisfactory and frequently the material has to be re-shipped.

*4 The shipping firm is Ben Bulk Line.

2.1.3.4. Location of the U.K. Tropical Hardwood Importing Trade.

Timber importers are usually sited at the major ports. In 1980/81, of the total number of 286 importer members of the National Hardwood Importers Section of the TTF, 103 were found to be based in London (35%), 79 were based in Liverpool and Manchester areas (28%) and 37 were from the Scottish section (12%). By looking at Table 2.1/1. we realise that six ports, i.e. Hull, London, Newham, Shoreham and Liverpool account for 74% of the total U.K. Hardwood imports.*5

According to a BTDB (1972) study, by far the most important factor influencing the choice of port of entry is the proximity to the stock yard. Other factors were, (i) lower level of port charges, (ii) frequency of sailing, (iii) shorter through transport times, and (iv) the overall facilities available at the port.

*5 There is the problem that the statistics do not discriminate between tropical and non-tropical importers of Hardwoods.

Table 2.1/1 U.K. Imports of Tropical Hardwood by Port of Entry

Area/Port		1975		1976		1977		1978		1979	
		M3	%	M3	%	M3	%	M3	%	M3	%
Scotland:	Total	49,128	6.6	27,564	3.3	15,873	1.9	12,728	1.5	9,226	0.9 *
North-East: Middlesbrough		2,239	0.3	704	0.1	930	0.1	1,468	0.2	33,809	3.4 *
	Total	13,854	1.8	23,521	2.8	12,522	1.5	13,780	1.7	50,480	5.1 *
Humber: Hull		46,855	6.3	46,527	5.5	44,184	5.5	31,740	3.8	16,516	1.7 *
	Total	49,828	6.7	46,872	5.6	46,391	5.7	32,466	3.9	20,046	2.0 *
East Anglia: Felixstowe		17,365	2.3	22,320	2.6	22,287	2.7	15,784	1.9	12,953	1.3 *
	Harwich	11,214	1.5	6,729	0.8	11,162	1.4	7,776	0.9	17,129	1.7 *
	Ipswich	7,171	0.9	10,455	1.2	13,282	1.6	18,939	2.3	18,371	1.8 *
	Total	49,866	6.7	43,686	5.2	51,642	6.4	49,559	5.9	57,609	5.8 *
London:	Total	261,483	35.0	278,873	33.2	220,179	27.2	211,309	25.5	269,329	27.1 *
Kent: Dover		11,040	1.5	8,049	0.9	12,962	1.6	14,908	1.8	11,763	1.2 *
	Total	15,328	2.0	13,688	1.6	23,012	2.8	27,046	3.2	18,380	1.8 *
South Coast: Newhaven		25,022	3.3	20,087	2.4	25,608	3.2	22,797	2.7	20,674	2.1 *
	Shoreham	18,524	2.5	43,587	5.2	50,539	6.2	56,253	6.8	51,641	5.2 *
	Total	43,546	5.8	63,674	7.6	76,253	9.4	79,050	9.5	72,681	7.3 *
Hants & Dorset: Southampton		12,854	1.7	12,702	1.5	21,893	2.7	13,396	1.6	20,981	2.1 *
	Total	16,468	2.2	13,522	1.6	22,199	2.7	14,731	1.8	23,812	2.4 *
Western Counties:	Total	1,908	0.2	1,364	0.2	1,143	0.1	--	-	216	- *
Bristol Channel: Bristol		32,579	4.3	21,228	2.5	9,488	1.2	10,245	1.2	42,223	4.2 *
	Cardiff	72,103	9.6	65,248	7.7	19,901	2.5	12,649	1.5	62,813	6.3 *
	Newport	31,110	4.2	57,508	6.8	109,420	13.5	87,874	10.6	67,634	6.8 *
	Total	139,003	18.6	145,265	17.3	143,302	17.7	110,768	13.3	172,854	17.4 *
Liverpool:	Total	69,495	9.3	126,970	15.1	148,476	18.4	240,519	28.9	254,599	25.6 *
Manchester:	Total	13,027	1.7	19,874	2.4	12,210	1.5	8,544	1.0	17,328	1.7 *
N. Ireland:	Total	16,227	2.2	26,339	3.1	26,597	3.3	22,432	2.7	24,140	2.4 *
U.K. Total:		747,387	100.0	840,676	100.0	808,351	100.0	829,943	100.0	994,241	100.0 *

* Includes hewn, sawn, planed or dressed Hardwood

Source: U.K. Year book of Timber Statistics - various.

2.1.4. PRICE

The underlying factors which determine prices and pricing policies are examined separately in this section. The value and implications of the findings will be used in the formulation of a pricing policy for lesser-known species.

2.1.4.1. Customer demand.

The demand for Tropical Hardwoods is a derived one. The buying behaviour is dominated equally by economic factors, tradition, habits and familiarity with certain species by individual end-users (Rich, 1970). On the area of aggregate and derived demand, Gregory (1972) has produced a useful application of theory to the question of forest resources.

But the present study follows the more general approach suggested by Hill et al. (1975). The characteristics of the demand are grouped under general headings and examined separately:

-I- Demand and product characteristics: Work by Towler (1974) provided a useful list of consumption coefficients. Table 2.1/2 shows the various end-use segments and their respective consumption coefficients. About endogenous competition,^{*1} the CAS report (1980) stated that in respect to income elasticity, wood based panels^{are} greater than paper-and-board which in turn are greater than sawnwood, which means that Tropical Hardwoods are more income inelastic compared to other wood products. This seems to be true, since for the last 8 to 12 months sawnwood has been holding its demand compared to a sharp fall in the demand for panels.

*1 Competition between wood products is defined as endogenous, compared to that from other materials (e.g. plastics, metal etc.) which is defined as exogenous competition.

Table 2.1/2. Tropical Hardwood Consumption Coefficients.

	Input Coefficient	Confidence Limits at 95% level
	(M3 WRME ^{a/} / £1000)	(+ - M/ WRME/£1000)
1. <u>Joinery</u>		
Window frames	5.57	+ - 6.30
Doors & door	8.73	+ - 0.30
Other	1.11	+ - 0.07
2. <u>Flooring</u>		
Strips & blocks	N.A ^{b/}	N.A
Mosaics	N.A	N.A
3. <u>Building</u>		
Housing	0.013	+ - 0.004
Private Commercial & other buildings	0.016	+ - 0.004
Private industrial	0.014	+ - 0.009
Repair & maintenance	0.012	+ - 0.028
4. <u>Shopfitting</u>		
Shop fronts	0.64	+ - 0.12
Other fittings	0.35	+ - 0.16
5. <u>Marine & freshwater</u>	N.A	N.A
6. <u>Furniture</u>		
Upholstery	0.39	+ - 0.13
Bedroom/Kitchen	0.58	+ - 0.20
Dining/Office	1.37	+ - 0.55
Seating	0.92	+ - 0.12
7. <u>Transport</u>	(M3 WRME/1000 units)	(+ - M3 WRME/100 units)
Passenger - Car	0.21	+ - 0.08
- Buses	144.50	+ - 27.10
Commercial - Rigid	173.92	+ - 20.18
- Trailer	180.52	+ - 138.6
8. <u>Containers</u>	35.94	+ - 197.28
9. <u>Rail</u>	N.A	N.A

a/ WRME = Wood Raw Material Equivalent

b/ N.A = Not Available

Regarding exogenous competition, it is true that a substitution of traditional timber uses by other materials does take place in the long-term, but not so much in the short-term. What happens in the short-term is what Gregory (1972) calls "constant total" effect. That is the mix of the various wood based products used can change, but the total amount of timber used remains constant for the short-term at least.

-II- The customer(s): Two important dimensions need to be considered, the proximity and the concentration of the end-use segments (Fisher, 1976). The degree of importance of those two dimensions is very much a matter of the end-use segment under consideration, but on an overall basis importers/merchants are close enough to the ultimate consumer to "feel" any short-term changes (proximity), while the concentration of the various segments can be seen in Tables 2.1/3 and 2.1/4. It is obvious that there is a close interdependence between suppliers and buyers.^{*2} Economic and non-economic factors motivating the buying decisions are well documented in most of the general textbooks of industrial marketing; but only a few papers exist regarding the Timber Trade (UCNW, 1977). In this area, there is currently some emphasis on non-economic aspects (Wassink, 1979-b-).

-III- Purchasing system: It is broadly agreed throughout the Trade that mutual trust between the parties involved is of great importance, and could prove vital in the introduction of lesser-known species because it can reduce the perceived risk and the uncertainty involved.

The only available information about purchasing systems employed by timber firms is provided by Cooper (1979), who

*2 At this point, I must mention once again the vast amount of information (both for the overall U.K. market and for the individual segments) which can be found in Towler (1974).

Table 2.1/3. Major U.K. Tropical sawnwood end-using sectors - 1971.

<u>End-use Sector</u>	<u>Estimated no. of Enterprises</u>
Construction	> 45,000
Joinery ^{1/}	± 500
Shopfitting	± 1,000
Flooring	< 20
Aquatic construction	± 300
D.I.Y. and repair/maintenance	
Furniture	± 2,000
Transport	± 1,000
Shipbuilding	< 40
Boatbuilding	< 1,000
Piano manufacturers	± 10
Coffin manufacturers ^{2/}	± 25

^{1/}Including built-in units manufacturers.

^{2/}Excluding undertakers/joiners.

Source: R.W. Towler (1974)

Table 2.1/4. Sawn Tropical Hardwood End-use Breakdown analysed by form of material sold.

<u>End-use</u>	<u>Form of Material</u>						<u>Total</u>			
	<u>Sawn logs</u>		<u>Boule</u>		<u>S.E. lumber</u>		<u>Planned lumber</u>			
	<u>M3</u>	<u>%</u>	<u>M3</u>	<u>%</u>	<u>M3</u>	<u>%</u>	<u>M3</u>	<u>%</u>		
Construction	58	-	55,604	38	335,455	51	22,984	33	414,101	46
Furniture	27,499	99	73,544	50	247,643	37	9,271	13	357,957	40
Transport	0	-	3,184	2	42,020	6	19,427	28	64,631	7
Ships/Boats	0	-	5,826	4	11,091	2	394	1	17,311	2
Caravans	0	-	64	-	2,566	-	589	1	3,217	0
Coffins	0	-	7,342	5	2,124	-	427	1	9,893	1
Education	0	-	308	-	2,367	-	1,538	2	4,213	-
D.I.Y.	0	-	25	-	1,057	-	13,504	20	14,586	2
Packaging	0	-	177	-	3,842	1	0	-	4,019	-
Patterns	0	-	350	-	5,994	1	0	-	6,344	1
Musical instruments	0	-	272	-	3,731	1	0	-	4,003	-
Sports/Games	0	-	205	-	217	-	681	1	1,103	-
Panels	0	-	0	-	216	-	51	-	267	-
Others	107	-	488	-	2,945	-	0	-	3,540	-
Total	27,664	100	147,389	100	661,268	100	68,865	100	905,187	100
Via Suppliers	664	2	14,222	9	64,624	9	3,231	4	82,741	8

Source: R.W. Towler (1974)

states that all such systems have the following common elements; (i) order replacement, (ii) follow ups, (iii) invoice handling, and (iv) receipt and inspection.

2.1.4.2. Competition

Most of the Timber importers/merchants/agents are members of the Timber Trade Federation (T.T.F.). The list of TTF membership^{*3} for the year 1980/81 was complemented by the Intercompany Comparison survey (ICC, 1980)^{*4} and some broad conclusions were drawn. By breaking down the TTF membership, it was possible to determine the nature of each firm and draw up an overall table (Table 2.1/5). This table was then compared to the one drawn from the ICC survey, Table 2.1/6. Each of the firms in the TTF list was checked whether it was included in the ICC survey and it was found that 39 agents, 247 Hardwood importers and 32 merchants were included in both lists. The total number of the above firms (318) comprises those firms of the ICC survey with turnover over £1M (64% of the total number of firms and 99% of the turnover).

This is not an absolute rate for the whole of the Trade, but by all estimates it is a reliable one. The problem which nevertheless remains is that, even from those of the above firms which can be said to stock Hardwoods we cannot determine the relative importance of Hardwood sales to the overall turnover. Therefore, it becomes even more difficult to derive a

*3 The list of members is broken down into: (i) the nature of the firms activities, (ii) the firms product mix and (iii) the location (see Appendix 2.1/1).

*4 The firms were selected on a turnover basis, groups of companies were identified and this fact was taken into account. But there was no indication whether the firm was an agent or a merchant or an importer and furthermore it was not possible to establish whether the firm stocked any Tropical Hardwoods.

Table 2.1/5. Membership in the U.K. Hardwood Trade

<u>Trade</u>	<u>T.T.F. Section</u>	<u>No. of TTF members</u>
Timber Agents	Hardwood agents and Brokers Association	47
Hardwood importers	National Hardwood Importers Section	286
Merchants	Merchants section	<u>34</u>
	Total	367
		===

Source: Timber Trade Federation (T.T.F.) Annual Handbook
1980/81

Table 2.1/6.

TIMBER MERCHANTS

£ (turnover)	No. of Companies	% of the total	Cumulative %	£'000 total turnover	% of the total	Cumulative %
up to 500,000	110	21.3		28,822	0.3	
500,00-1 mill.	93	18.1	39.4	70,482	0.6	0.9
1-2 mill.	125	24.3	63.7	161,815	1.5	2.4
2-3 mill.	46	8.9	72.6	132,322	1.2	3.6
3-4 mill.	26	5.0	77.6	73,029	0.7	4.3
4-5 mill.	16	3.1	80.7	67,791	0.6	4.9
5-6 mill.	15	2.9	83.6	76,225	0.7	5.6
6-7 mill.	7	1.4	85.0	52,022	0.5	6.1
7-8 mill.	4	0.8	85.8	37,211	0.3	6.4
8-9 mill.	5	1.0	86.8	43,220	0.4	6.8
9-10 mill.	7	1.4	88.2	56,469	0.5	7.3
10-20 mill.	23	4.5	92.7	313,690	2.9	10.2
20-30 mill.	9	1.7	94.4	375,626	3.4	13.6
30-40 mill.	9	1.7	96.1	245,703	2.2	15.8
40-50 mill.	6	1.2	97.3	180,502	1.6	17.4
50-100 mill.	5	1.0	98.3	417,070	3.8	21.2
100-200 mill.	5	1.0	99.3	7,520,135	69.1	90.3
200-300 mill.	4	0.8	100.0	1,022,170	9.7	100.0
	515	100.0		10,874,304	100.0	

Source: Financial Survey ICC 1980

total turnover figure for Tropical Hardwood importers (the above include all Hardwoods) but the findings appear to be consistent to those in Fowlers (1974) research, Table 2.1/7.

Unfortunately, there is no information about the nature of competition, but it is reasonable to say that, because the products on offer are not differentiated in any great degree and because the costs are very similar for all merchants, competition does not take aggressive forms.

It is not known what effect non-price competition has, but what is apparent is the result that price-cuts have. Through the various interviews and discussions, it became clear that such price cuts were the result of either economic conditions (cash flow, interest rates etc.) or because of a long accumulation of stocks. Such tactics take the form of short-term special prices. The price cuts are usually not made known to the competitors until a customer makes a comment or a travelling salesman reports it. As we have seen such price cuts are short-term events and therefore by the time that the information of such price cuts has reached the competitors, the initial impact has been phased out. Therefore, always assuming the short-term nature of the price cut, by following the price cut the competitors do not achieve any positive results. The price cut initiator (unless there are vast stock levels) will most probably have achieved his objectives before the competitors can follow the price cut.

2.1.4.3. Costs.

The purchase prices which importers have to pay are almost identical for all of them, assuming similar quantities and qualities. But there are other factors which could

Table 2.1/7. Importers' Shares of total Tropical Hardwood Imports.

<u>Company Number</u>	<u>% of total import</u>	<u>Cumulative %</u>	<u>% sold</u>	
			<u>1) Forward</u>	<u>2) From Stock</u>
A. Separately trading Companies				
1	4.8		25	75
2	3.3	8.1	79	21
3	3.3	11.4	18	82
4	3.0	14.4	50	50
5	2.8	17.2	29	71
6	2.7	19.9	21	79
7	2.7	22.6	46	54
8	2.7	25.3	79	21
9	2.3	27.6	7	93
10	2.0	29.6	28	72
B. Separately owned Companies				
1	7.5		27	73
2	5.5	13.0	32	68
3	4.0	17.0	12	88
4	3.3	20.3	79	21
5	3.3	23.6	18	82
6	3.0	26.6	50	50
7	2.8	29.4	29	71
8	2.7	32.1	21	79
9	2.7	34.8	46	54
10	2.7	37.5	79	21

Source: R.W. Towler (1974)

affect the total cost, such as demurrages,^{*5} material arriving which are not properly kilned or sawn and therefore having to be processed again etc. Such additional costs could be considerable. But overall, costs cannot be used as the sole determinant of the pricing policy of a Timber firm.

2.1.4.4. Competitive prices

The analysis of the competitive prices was based on the published prices of 10 firms, these price lists were obtained through various end-users. The prices were arranged in cubic foot form and did not take into account any small order or selection surcharges etc. Two different points in time were examined, October 1980 and March 1981, the reasons for comparing two different points in time were:

(i) comparable data was possible to be collected only for those two periods, and

(ii) in order to eliminate any possible seasonal fluctuations.

A final point which is worth mentioning was that many of the major Tropical importers did not provide a full price list, just a list of the species which they stock and a rough estimate of the quantities at stock.

-I- Price comparisons: The price lists were arranged in a similar order according to a pre-set species list, then each comparable pair of the same specie, grade etc. was compared and a percent difference (of the smaller of the two quoted prices) was recorded. The total number of comparisons was 352, Table 2.1/8, and the results of the analysis were:

^{*5} Definition by Mallinson & Leigh (1965) "Demurrage is the sum paid or agreed to be paid to the shipowners as liquidated damage for delay in loading or discharging beyond certain stipulated times".

Table 2.1/8. Price Comparisons

Price differences in % terms	Form	No. of cases	% of the total
0%	A/D	31	9.9
	K/D	4(35)	
0.1 - 5.0%	A/D	66	39.5
	K/D	73(139)	
5.1 - 10.0%	A/D	36	25.7
	K/D	54(90)	
10.1 - 20.0%	A/D	36	18.2
	K/D	28(64)	
20.1 - 30.0%	A/D	4	3.4
	K/D	8(12)	
30.1 - 40.0%	A/D	-	1.1
	K/D	4(4)	
50.1 - 60.0%	A/D	-	1.1
	K/D	4(4)	
60.1 - 70.0%	A/D	-	1.1
	K/D	4(4)	
		352	100.0

- (i) of the total 352 comparisons, there were 35 (9.9% of the total) prices which were identical and of the remaining 317 (90.1%) prices were different. Of those 317, 175 were differences between Kiln Dried material and 142 between Air Dried material;
- (ii) of the 35 comparisons which did not show any price differences, 31 were of Air Dried material and only 4 of Kiln Dried material;
- (iii) there were 139 (39.5%) prices with a difference of less than 5%, a brief analysis of those differences proved that all of these species were amongst the most popular ones;

(iv) of the remaining 178 (50.6%) comparisons, most of the differences were in the range of 5.1-20.0% but it is interesting to note that of the differences over 20.1% the majority were of Kiln Dried material (20 out of 24). Even more, of the differences over 30.1% all were of Kiln Dried material and most of those species were found to be highly specialised in their uses and at above average prices.

-II- Paired Comparisons: A further analysis was then performed, of the species which were stocked by a firm both in Air Dried form and Kiln Dried form. The same price lists as above were used and this time only the prices of the species which were stocked both in Air Dried and Kiln Dried forms were analysed. There were 91 possible such comparisons, Table 2.1/9, and the results of the analysis were:

Table 2.1/9.

Paired comparisons of price differences

The % differences	Total cases	% of the total
$\Delta AD=0, \Delta KD=0$	0	0
$\Delta AD=0, \Delta KD \neq 0$	7	7.7
$\Delta AD \neq 0, \Delta KD=0$	1	1.1
Same direction:		
$ \Delta AD > \Delta KD $	35	38.5
$ \Delta AD < \Delta KD $	32	35.2
Opposite direction:		
$ \Delta AD > \Delta KD $	12	13.2
$ \Delta AD < \Delta KD $	4	4.3
	91	100.0

(i) there was no case where both Air Dried and Kiln Dried prices were identical;

- (ii) there was only one case where there was no difference between the two prices of a specie in Kiln Dried form, while the corresponding prices of the same specie in Air Dried form were different; it was found that the Air Dried price difference was below 5%;
- (iii) there were 7 cases where there was no price difference for the Air Dried material but the corresponding Kiln Dried prices differed; further, analysis did not provide any explanations for such differences;
- (iv) there were 84 (91.2%) cases where the differences in the Air Dried and Kiln Dried prices were of the same direction, of those:

- a- 35 paired comparisons showed that in absolute terms the differences between the Air Dried prices were greater than the corresponding absolute differences of the Kiln Dried material, it ^{was} also found that the price differences for both forms of material were in the range of 0.3-to-6.6%,

- b- 32 of the comparisons showed that in absolute terms, the price differences between Air Dried material were smaller than the corresponding differences between the Kiln Dried material, the differences were found to be in the range of 5.4-to-18.9% of the quoted prices;

- (v) there were finally 16 cases where the differences in the Air Dried and Kiln Dried prices were in opposite directions, of those:

- a- 12 cases showed that in absolute terms the Air Dried price differences were greater than the corresponding Kiln Dried differences, by analysing those pairs, it was found that both the differences were very small (in % terms) and almost equal to zero,

-b- in the last 4 cases, the reverse of the above was true, these cases were found to be special offers.

A brief cross-examination of the price differences and the nature of the stock holdings of the firms proved that such factors have no significant influence.

-III- Overall price list differences: Finally, an overall price list comparison was performed. The price list of each firm was compared to the price list of each of the other 9 firms, this process was performed for the two time periods and produced 90 comparisons. The two time periods were examined independently, that is the lists were not mixed for the different time periods. The comparable species were again arranged in a pre-set way and the differences were assigned (+) or (-) or (0) signs. It was found that 57 (63%) of the total number of comparisons showed an overall price difference.*6

The limitations of the above analysis are obvious. Qualitatively the analysis does not take into consideration the "real" quality of the stocks held by the different suppliers. Quantitatively it is also inadequate because only a small fraction of the merchants was analysed and finally because other competitive activities like services, credit facilities, promotion, etc. are not considered.

The conclusions of the above analysis are:

(i) if the Air Dried price of a merchant on a particular specie is higher than the corresponding price of another merchant, then the Kiln Dried prices of the same specie will also be different in the same direction as the Air Dried difference is,

*6 The test applied was a Wilcoxon matched-pairs signed-ranks test, at a level of significance $\alpha=0.01$ (Siegel, 1956).

(ii) the more popular the specie is, the smaller the price differences between the various merchants were found to be,

(iii) the Air Dried prices showed smaller % differences than the corresponding Kiln Dried prices of the same specie, these differences tend to be greater the more expensive the specie was,

(iv) there is an overall difference between merchants prices, when a wide range of species is purchased from one merchant (supplier).

2.2.1. TIMBER DEMAND

The U.K. Timber Trade represents only a small part of the international trade and therefore it will be reasonable to assume that supplies of Tropical Hardwoods to the U.K. will be greatly influenced by the movements in the international market(s).

Firstly, we should establish some basic economic facts about the demand and supply of timber. A study by ITC/GATT (1967) defined the determining factors as being:

- a) for Demand
 - the output levels of end-use segments
 - the income (GDP) of the importing countries
 - the selling prices of timber products
 - the degree of substitution of timber by competitive materials (metal etc.)
 - the trade duties or other trade restrictions (tariffs etc.)
- b) for Supply
 - the available capacity of exporting countries
 - the buying prices (the prices that exporters charge to the UK importers)
 - the substitution among wood species
 - the processing of logs into wood products
 - the policies of exporting countries
 - the institutional aspects of trading sectors.

The world trade equilibrium will obviously be the point of intersection of all the above factors.

It has been established by Buongiorno & Grosenick (1977)

that the consumption functions of low-income countries are significantly different from those of high-income countries. This means that the GDP (I believe that the term Disposable Income is a more appropriate one) is definitely influencing consumption of timber. The same people derived a model, based on economic and demographic elements, which was designed to forecast forest product consumption from 1970 to 2010 (their model had the basic limitation that it used projections of GDP and population to forecast consumption levels).

Nevertheless, the conclusions drawn from the forecasts were:

(a) For structural wood (the sum of sawn timber plus wood based panels) world consumption will grow at a slower rate than the total GDP. The growth of consumption per capita will proceed at about half the rate of growth of GDP per capita in developed countries while it will be slightly above the rate of growth of GDP per capita in the developing countries.

(b) For roundwood (the sum of raw logs and veneer logs plus pulpwood and particles), the growth rate will be slightly below the growth rate of world GDP, the growth in developing countries will be almost 6 times that of the developed countries.

These findings were very similar to the projections by Takeuchi (1972), who drew up forecasts (Table 2.2/1 which highlighted the future dominance of the producing countries and Japan.

Table 2.2/1. Takeuchi's Roundwood Consumption Projection

<u>Market</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>
		(mill m3 r)	
Producing Areas	46.3	53.2(+14.9)	61.0(+14.7)
Europe	12.0	13.0(+ 8.3)	14.0(+ 7.7)
U.S.A.	10.9	14.3(+31.2)	16.0(+11.9)
Japan	28.0	37.5(+33.9)	47.0(+25.3)
Others	<u>3.6</u>	<u>4.7(+30.5)</u>	<u>6.0(+27.6)</u>
Totals	100.8	122.7(+21.7)	144.0(+17.4)
	=====	=====	=====

Source: Takeuchi (1972)

The above forecasts support the findings of Buongiorno & Grosenick on the faster growth of developing countries.

Increasingly more and more research is directed towards non-price influence on the consumption of timber and the degree of substitution that takes place. In particular, Wassink (1979-b-) expressed strong views about the importance of non-price factors like social influences, cultural beliefs, technological advances, psychological elements, etc. What is more interesting is the area of substitution and competition between materials, where there is an inter-wood competition and a competition from other materials (Fig. 2.2/1 shows some of the more obvious materials which are used instead of timber (Enabor, 1972). There are serious doubts about the short-term effects of competition both from other wood-based products and non-wood based materials. The main argument is whether such material can be produced at lower prices and be readily available in the short-term (although such material as plywood, particleboards on the one hand and plastics, metals on the other can achieve economies of scale in their production). Finally, the demand elasticity of the timber has been linked

Fig. 2.2/1. Some Wood Products and their Substitutes

Commodity		Competing Material		Markets	
Primary	Secondary	Wood based	Non-wood	Use classification	Type of use
Logs	Sawnwood	Poles	Steel, brick, concrete, aluminium	Building	Rafters
		Split and round poles	Concrete, brick	Building	Foundations
		Plywood	Concrete, plastic tiles	Building	Flooring
		Plywood, fibre-board	Steel, brick, plaster, concrete, aluminium	Building	Walls (exterior and interior)
		Plywood, particle-board, fibreboard	Steel, fibreglass, aluminium	Construction	Boat building
		Veneer, plywood, fibreboard, particle board	Steel, aluminium plaster, plastic composites	Manufacturing	Joinery Furniture
		Plywood, veneer, paperboard, box-board, wrap.paper	Steel, foil, aluminium, plastics	Packaging	Boxes, crates bags, sacks
		Fibreboard, as boxing for concrete	Steel, concrete, aluminium, plastic	Engineering & heavy construction	Bridges, wharfs, decking, industrial

to the final product which is produced (the larger the proportion of the final product consisting of timber, the closer the demand curves of the product and timber will be), and if we accept that in the short-run the substitution effect is minimum then we can say that the demand for timber is inelastic for the very short term.

Now let us examine closely the forecasts for Europe as a whole. An extensive study by the FAO (1976) (Tables 2.2/3, 2.2/4) presented some projected levels of consumption, the percent changes, and the areas of imports (Figure 2.2/1). Since the U.K. timber trade is part of the European trade these projections should be used as guidelines. Furthermore if we analyse these we see they follow closely the percentage changes of the U.K. timber trade. What is very important to recognise is the stagnant state of the sawn wood trade and the expected importance of South America as the major supplier of Tropical Hardwoods.

Turning to the U.K. timber trade we must make clear that there are no demand figures, imports are usually taken to represent demand and consumption levels are calculated as $\text{Opening stock} + \text{Imports} - \text{Closing stock}$. There are many drawbacks to such an approach with the two most important ones being, a) the closing stock figures are very inaccurate because firms do not have the same dates of producing their accounts and some of the firms manipulate the figures for taxation purposes,

b) the mere fact that a certain volume of a species has been imported during a given year does not mean that it was the result of some definite demand by the end-users. There are many species which have a very high demand

Table 2.2/3. European trends 1949-51 to 1969-71 and Projection to 1980-2000 of apparent consumption

	Sawnwood		Wood-based Panels		Paper & Paper-board		Other industrial Wood ^{a/}
	(mill. m ³)		(mill. m ³)		(mill. m ⁺)		(mill. m ³)
<u>Actual consumption</u>							
1949-51 (average)	62		3		10		160
1959-61 "	76		9		21		129
1969-71	93		23		38		99
<u>Growth assumption^{b/}</u>							
	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>	<u>Low</u>	<u>High</u>	
<u>Projection</u>							
1980	99	105	46	47	56	63	75-85
1990	103	119	79	84	80	102	60-70
2000	110	144	130	143	114	162	50-60

^{a/} Used in the round

^{b/} Population and GDP growth assumption.

Source: European Timber Trends and Prospects 1950-2000, FAO, 1976.

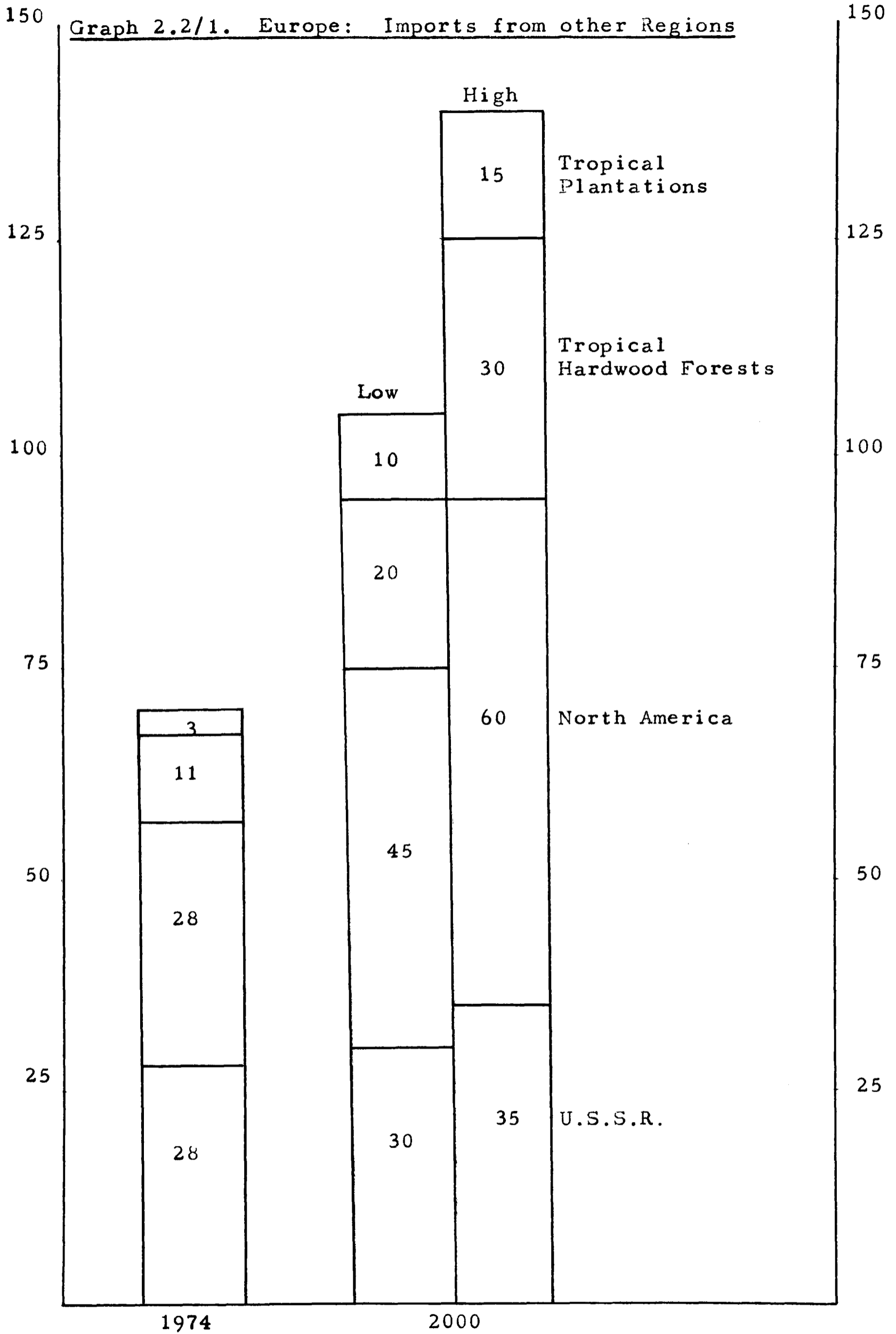
Table 2.2/4. European average annual changes in apparent consumption 1949-51 to 1969-71 and Projection to 1980-2000

	Sawnwood	Wood-based Panels	Paper & Paper-board	Other industrial wood ^{a/}
	(mill. m3)	(mill. m3)	(mill. m ⁺)	(mill. m3)
<u>Volume change</u>				
<u>Actual</u>				
1949-51 to 1969-71	+1.6	+1.0	+1.4	-3.1
<u>Projected</u>				
	<u>Low High</u>	<u>Low High</u>	<u>Low High</u>	
1969-71 to 2000	+0.6 +1.7	+3.6 +4.0	+2.5 +4.1	-1.5 ^{c/}
<u>% change</u>				
<u>Actual</u>				
1949-51 to 1969-71	+2.0	+10.7	+6.7	-2.4
<u>Projected</u>				
	<u>Low High</u>	<u>Low High</u>	<u>Low High</u>	
1969-71 to 2000	+0.5 +1.5	+5.9 +6.3	+3.7 +4.9	-1.9 ^{c/}

^{a/} used in the round

^{c/} middle of forecast range

Source: European Timber Trends and Prospects 1950-2000, FAO 1976.



Source: European Timber Trends and Prospects 1950-2000, FAO 1976.

but are not imported because of supply shortages. The opposite is true for many other species. Furthermore, even the import figures are not reliable. Details are not given about all the species imported (a large number of species are totalled under one name). If we look at past imports (Table 2.2/2) it is difficult to establish a trend (unless stagnation is a trend, if the exceptional year of 1973 is disregarded). A study by Towler (1974) derived a model for U.K. imports.

$$Y_{TH} = -387.4 + 25.92x_3 + 0.2517x_{12} - 615.1x_{20} \quad \text{where}$$

Y_{TH} = tropical hardwood imports

x_3 = industrial production index

x_{12} = apparent consumption of softwoods

x_{20} = log transformation of apparent consumption
of particleboards.

Although population growth and GDP do not appear in the formula as contributing coefficients, it is obvious that they are closely related to x_3 ; the projections of the above formula for 1980 were, pessimistic 695m³, probable 1479m³ and optimistic 2410m³. If we compare these figures with the 1979 actual imports of 756m³ and at the same time take into consideration the apparent decline during 1980 then the pessimistic figures appear to be closer to the actual imports.

We have noted the decline of imports of species like Afrormosia, Utile, Obeche, Sapele, etc. (See Section 2.2.3) and the increase in imports of species like Lauan, Ramin and Brazilian Mahogany. This concentration of imports on a smaller number of species will result in overtaxing the resources of certain species. At the same time three very important developments are taking place:

Table 2.2/2. Total U.K. Consumption of Imported Tropical
Hardwood

<u>Year</u>	<u>Consumption</u> ^{a/} ('000 m3)	<u>% change</u> %
1959	1246	
1960	1348	+ 8-
1	1277	- 4.5
2	1155	- 9.5
3	1169	+ 1-
4	1332	+14-
5	1298	- 2.5
6	1188	- 8.5
7	1146	- 3.5
8	1201	+ 5-
9	1042	-13-
1970	1045	- 1-
1	1032	- 1.5
2	1086	+ 5-
3	1294	+19-
4	843	-35-
5	815	- 3.5
6	839	+ 3-
7	813	- 3-
8	842	+ 3.5
9	964	+13-

^{a/}Consumption = opening stocks + imports - closing stocks.

Source: Yearbook of Timber Statistics (various years) T.T.F.

- a) price and/or supply will limit availability,
- b) some countries are restricting exports of unprocessed timber,
- c) more efficient harvesting is taking place instead of selective cutting.

All these factors combined with our observations about the stagnant nature of demand, the increasing demand of the developing countries and the changing importance in the producing areas, will result in prices increasing alarmingly while resources of established species will diminish.

It is obvious that during such times of intense competition (between various materials and between merchants), slow growth and price increases the better utilisation of the existing natural resources is one way of ensuring greater efficiency. Therefore, lesser-known species will have to be utilised in order to ensure future supplies and prepare the ground for a future recovery in consumption.

2.2.2. TROPICAL HARDWOOD RESOURCES AND THE U.K. TRADE

Having established that the nature of the U.K. Hardwood imports is changing, the next step should be to examine the world's Tropical Hardwood resources in order to establish the future of the U.K. imports.

Of the forest removals in the tropics, 50% is used locally for energy, 45% is processed locally and only 5% is actually exported to other countries (Wassink, 1979-c-). Some further points which should also be considered are:

- (a) Tropical forests are composed of over 30,000 different species,
- (b) from all the species, a study by Pringle (1976) found that about 600 species have been commercially used,
- (c) forest resources are generally inadequately surveyed; there is very little reliable information about occurrence of particular species; there is no uniform classification system of the surveys which have been undertaken and of the properties of the species that exist in the forests,
- (d) access to some forest areas is a major problem; it does not allow efficient and economic exploitation of the resources; there is periodical ("spasmodic") supply of certain species.

Table 2.2/5. Areas of Natural Forests in Tropical Countries
(1975 and projected to 1000)

	Africa		America		Asia&Oceania		Total	
	1975	2000	1975	2000	1975	1000	1975	2000
(% of total)	(18%)	(19%)	(56%)	(57%)	(26%)	(24%)		
Closed HD Forests	202	187	628	562	291	242	1121	991
- Operable	134	119	497	435	188	142	819	696
- Inoperable	68	68	131	127	103	100	302	295

Source: Policy and Planning Service Department of the FAO(1979)

From Table 2.2/5 we see that over half (56%) of the "closed forests"^{*1} are in South America, with 26% in Asia and Oceania and 18% in Africa. The diversity of species which are found in each area (that is the natural property characteristics) is greater in South America with Africa second and South-East Asia-Oceania showing the least diversity. The above observations together with the conclusions drawn from Tables 2.2/6 and 2.2/7 offer some clues about the future areas of Tropical Hardwood supplies to the U.K. market.

Table 2.2/6. Areas of industrial Plantation in Tropical Countries

(1975 and projection to 2000)

	Africa		America		Asia & Oceania		Total	
	1975	2000	1975	1000	1975	2000	1975	2000
	(million ha)							
(% of total)	(16%)	(10%)	(30%)	(46%)	(54%)	(44%)		
Hardwood Plantations	0.51	1.05	0.94	4.54	1.63	4.32	3.08	9.91
- low yielding	0.40	0.64	0.15	0.73	1.37	2.94	1.92	4.31
- high yielding	0.11	0.41	0.79	3.81	0.26	1.38	1.16	5.60

Source: Policy and Planning Service Department of the FAO (1979)

Table 2.2/7. Net removals of industrial roundwood in the tropics.

(1975 and Projection to 2000)

	Africa		America		Asia & Oceania		Total	
	1975	2000	1975	2000	1975	2000	1975	2000
	(million ha)							
(% of total)	(14%)	(13%)	(21%)	(33%)	(65%)	(54%)		
Hardwood	16.1	31.0	22.7	77.0	72.3	128.0	111.1	236.0
-operable forests	15.4	23.0	18.9	52.0	70.0	111.0	104.3	186.0
-low yielding plantations	0.2	1.0	0.1	3.0	0.5	1.0	0.8	5.0
-high yielding plantations	0.5	7.0	3.7	22.0	1.8	16.0	6.0	45.0

Source: Policy and Planning Service of the FAO (1979)

*1 Closed forests are those with a more or less complete canopy cover.

We see that South America is becoming a more important supplier. Industrial plantations and net removals are expected to be dominant by the year 2000 (showing increases of 16% and 13% respectively). At the same time Africa appears to be stable around the present levels and South-East Asia to decline slightly (at a rate of 10% and 11%).

All the above observations indicate that new species will have to be introduced at a steady rate in order to satisfy the present demand levels.

2.2.3. U.K. IMPORTS OF TROPICAL HARDWOODS

Hardwoods are part of the U.K. Timber Trade, the other major forms of material are Softwoods, Plywood, Blockboard and Particleboards. From Graph 2.2/2, we see the relative changes in imports of the above material, it is obvious that particleboards have gained at a very fast rate against the other forms of material, while Hardwoods have been stagnant for a long time.

Imported Hardwoods are divided into two broad categories: Tropical Hardwoods and Non-Tropical Hardwoods. For the purpose of this study, I will use the distinction proposed by FAO^{*1}: (a) Tropical forests are the ones between 23.5°N and 23.5°S, which includes South and Central America, West and Central Africa, South-East Asia and the Pacific.

(b) Non Tropical, all other areas.

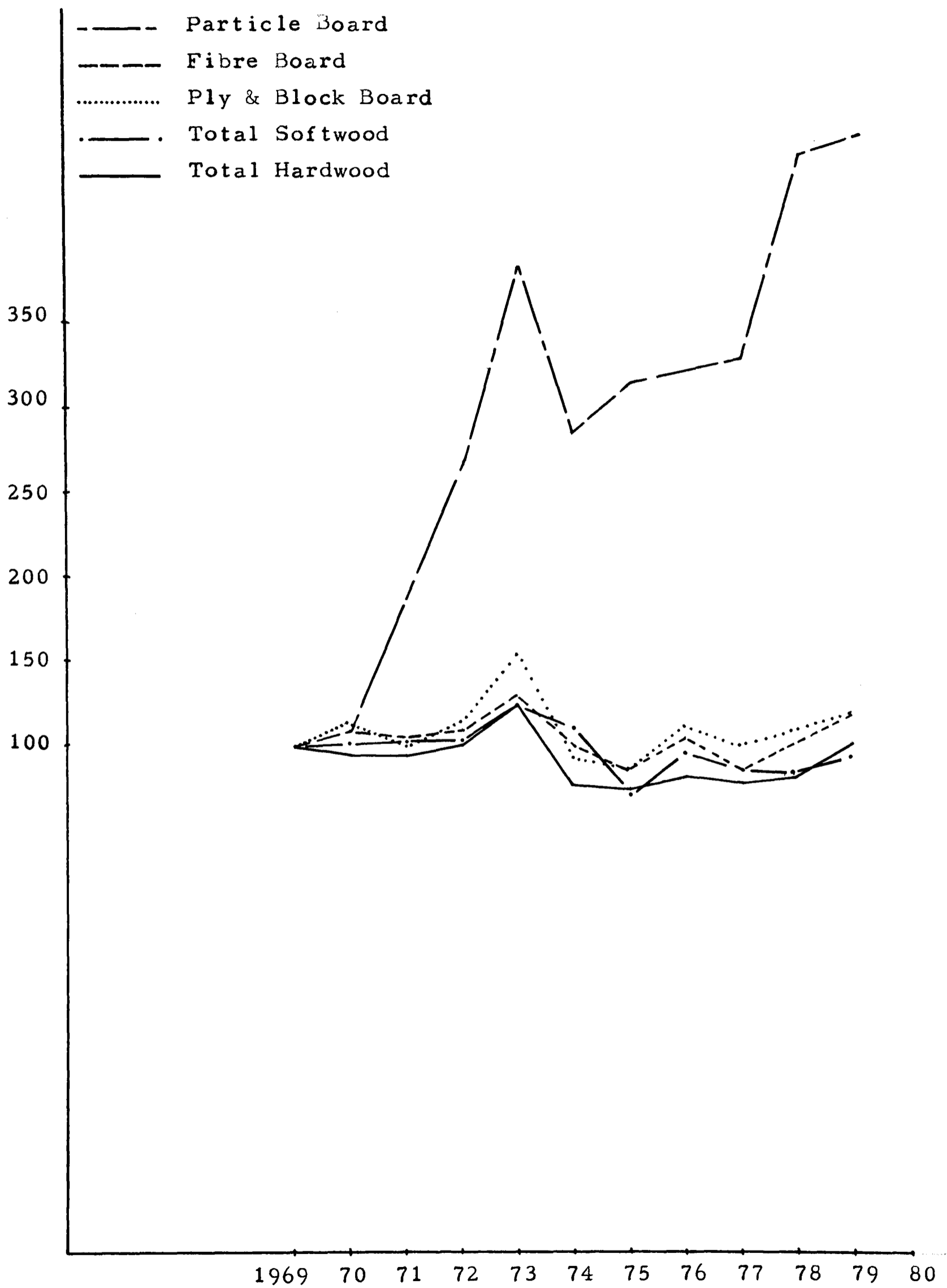
All imports of Tropical Hardwoods take the form of either lumber or solid round logs. Looking at Table 2.2/8, we see the various species imported into the U.K. and the countries of origin of those species. Furthermore, in Table 2.2/9 we see that Tropical Hardwoods constitute by far the larger percentage of total Hardwood imports (76% of the total). This is even more apparent in the case of log imports (84%).

This study is entirely concerned with Tropical Hardwoods.

As we see from Graph 2.2/2 (which is the representation of Table 2.2/10), the imports of Tropical Hardwoods have been stagnant since 1969. This observation, together with the fact that the ratio of logs/lumber is increasing (Table 2.2/9),

*1 For reference see Policy and Planning Service Department of the FAO (1979).

Graph 2.2/2. Indices of Timber Imports (1969 = 100)



Source: Yearbook of Timber Statistics (Various). T.T.F.)

Table 2.2/8. Hardwood and Country of Consignment.

	Romania/ Yugoslavia		Denmark	West Germany	France	Canada	U.S.A.
	Japan	Finland					
A) <u>Non-Tropical</u>							
Beech	X		X	X			
Oak	X				X		X
Birch		X			X		X
Walnut							X
Ash				X			
B) <u>Tropical</u>							
		<u>Africa</u>		<u>S.E. Asia & Pacific</u>		<u>S.America</u>	
		<u>Ghana</u>	<u>Ivory Coast</u>	<u>Liberia</u>	<u>Zaire</u>	<u>Philippines</u>	<u>Malaysia</u>
Mahogany	X	X					
Lauan				X			X
Ramin					X		X
Keruing					X		X
Afr. Walnut	X	X					
Obeche	X	X					
Utile	X	X					
Sapele	X	X					
Afrornosia	X	X					
Iroko	X	X					
Makore	X	X					
Agba	X	X					
Mengulang							X
Meranti							X
Teak							X
Abura		X					
Idigbo	X						

Table 2.2/10. U.K. Imports of Timber Products

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
1) Tropical Hardwoods ^{a/}	750.6	720.2	688.8	742.1	1068.5	508.9	511.7	610.1	571.8	626.0	756.2
2) Total hardwoods ^{a/}	1061.7	1021.9	999.8	1063.5	1420.0	778.4	747.4	840.7	808.3	830.0	994.1
3) Total Softwoods ^{a/}	7809.0	8007.7	8088.7	8243.0	9815.5	8529.7	5215.4	7181.2	6380.2	6456.4	7213.8
4) Plywood and Blockboard ^{a/}	955.1	1096.0	969.0	1112.4	1470.0	918.3	823.0	1046.8	867.8	1058.2	1179.2
5) Particle-boards ^{b/}	20 .22	243.50	380.31	563.03	808.95	597.02	655.96	674.45	692.40	942.05	1012.66
6) Fibre boards ^{b/}	268.20	288.72	276.99	288.57	353.94	283.84	232.53	277.07	225.25	268.68	270.25

a/ Data in thousands of m³

b/ Data in thousands of metric tons

Source: Yearbook of Timber Statistics. Various. T.T.F.

is an indication of the increasing importance of lumber and the difficulties in obtaining logs. This last point is the result of two main factors:

- (a) good quality logs are increasingly difficult to find because of a genuine decline in quality,
- (b) the exporting countries prefer to process the logs themselves in order to create employment, obtain more foreign currency by exporting added-value material and to attract foreign capital for investment purposes.

An interesting development during the past decade is the decline in the levels of stocks held by the importers/merchants and the increasing use of forward contracts.*2 The point is better illustrated in Table 2.2/11 and Graph 2.2/3. Even during the years which show some overall increase in imports the stocks show a steady decrease. A study of "Cargo and Invoices of the importers" by Towler (1974) proved that Tropical Hardwood sales via importers constituted 88% of the total trade with the remaining 12% sold directly to the end-users, and furthermore 37% of the sales via importers was on a forward contract basis. From Table 2.2/12 we see that importers/merchants are the main route of the trade and that forward contracts are important mainly for planed lumber and square-edge lumber. The present rate of interest charges is a further incentive to increase forward contracts in order to reduce the stock held. Further analysis proved that there is a greater tendency for species from the Far East rather than species from West Africa or South America to be sold on a forward basis (the species predominantly are Ramin and high density species).

*2 Forward Contracts: The material sold under a forward contract agreement is either forwarded to the end-user at arrival or is held for a short time by the importer in his yard, but it is not for sale to any other end-user.

Table 2.2/11. End-year stock levels of Tropical Hardwoods

<u>Year</u>	<u>Stock levels</u> (000 m3)	<u>% changes</u> %
1959	492	-
1960	534	+ 8.-
1	577	+ 8.-
2	479	-17.-
3	447	- 6.5
4	489	+ 9.5
5	490	+10.5
6	444	- 9.5
7	350	-21.-
8	356	+ 1.5
9	376	+ 5.5 (with 1959 basis -23.5%)
1970	352	- 6.5
1	320	- 9.-
2	298	- 6.5
3	424	+42.-
4	359	-15.5
5	291	-19.-
6	293	+ 1.-
7	289	- 1.- (with 1969 basis -23%)
8	277	- 4.-
9	307	+11.-

Source: Yearbook of Timber Statistics
- Various. T.T.F.

Graph 2.2/3 Imports and stock of Tropical Hardwoods

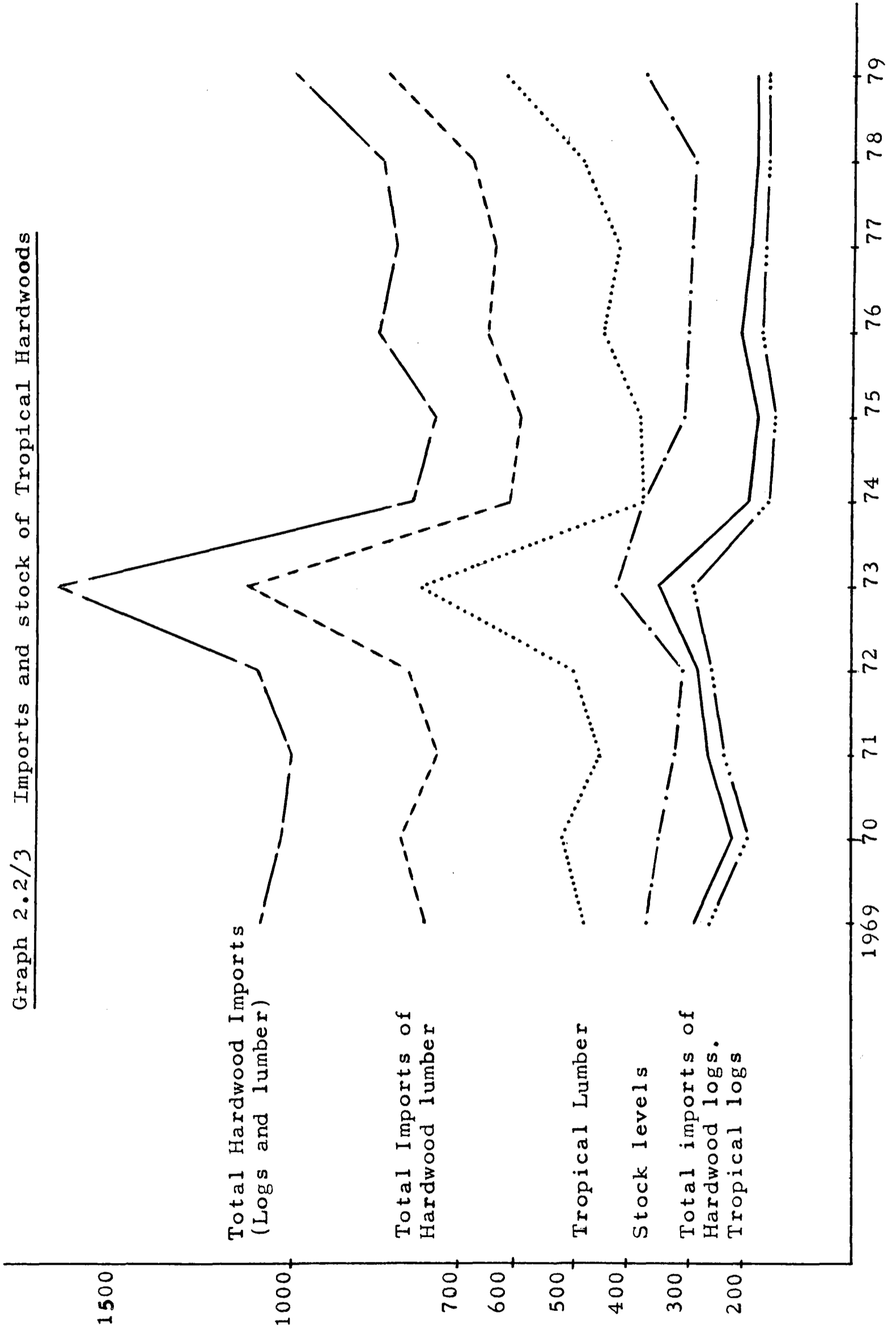


Table 2.2/12. Sawn Tropical Hardwood sales analysed by form of material and route through the Trade

<u>Form of material</u>	<u>Route through the trade</u>		
	Via importers		Direct to
	<u>Forward</u>	<u>Via stock</u>	<u>End-users</u>
	%	%	%
Sawn logs	19	2	79
Boules	14	86	--
Square edged lumber	40	47	13
Planed lumber	<u>62</u>	<u>33</u>	<u>5</u>
Total	37	51	12
	====	====	====

Source: R.W. Towler, 1974.

Now let us examine closer the U.K. Tropical imports. From Table 2.2/13, we see that the first year with any considerable increase in total imports was 1979. During that year lumber imports increased by 23% and log imports by a moderate 5%. Further examination shows that the top four species (Mahoganys, Keruing, Ramin and Meranti) captured 66% of the total lumber imports. This, compared with the 39.8% of the top four species of 1974, proves that the number of the dominant species is declining. There is a strong indication that the market is becoming geared around a small number of species while the others lose their importance. It is also interesting to note that the above mentioned four species accounted for nearly 80% of the large increase which was observed during 1979. From Table 2.2/14, which clearly shows the dominance of Tropical species in log form imports, we see that the 5% increase in 1979 levels of imports was entirely due to the recovery of Mahogany, Obeche and Makore imports, although if we look back to the 1975 levels, only Mahogany shows a slight improvement.

Table 2.2/13. Per Specie Hardwood Imports - Lumber

<u>Lumber</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
<u>A) Tropical</u>	486.2	522.8	452.9	493.4	770.8	364.8	376.1	448.0	419.5	473.8	615.4
Mahogany ^{a/}	b/ 18.3	16.8	9.7	15.5	33.5	17.8	13.5	42.6	55.9	104.6	178.7
Keruing	78.9	89.7	71.9	65.1	124.3	41.2	55.4	66.4	80.4	73.1	100.4
Ramin	62.6	86.5	81.2	95.8	161.2	61.9	80.9	90.2	67.4	78.0	91.1
Meranti			32.7	37.0	94.4	24.5	30.3	49.9	36.4	38.1	36.4
Iroko			14.5	22.2	32.8	15.5	18.1	31.7	20.0	24.4	24.8
Obeche	26.1	30.7	24.6	26.4	41.1	14.9	18.1	17.9	17.0	14.8	13.4
Sapele			12.5	17.1	19.2	16.1	8.2	16.5	15.1	15.9	13.1
Utile	61.3	57.3	56.9	48.0	47.2	23.5	34.8	23.0	15.1	14.8	11.7
Teak	14.0	14.4	14.1	13.3	14.9	15.3	11.5	7.8	7.5	8.6	8.3
Afromosia			16.1	19.3	19.3	13.8	10.9	8.2	5.9	9.1	5.2
African Walnut			4.2	4.5	5.3		3.3	2.2	2.5		
Makore											
Agba			5.8	4.8	3.0						
Mengulang			2.8	1.5	2.7						
Idigbo							1.2	1.3	1.2		
Niangon							0.4	0.4	0.4		
Opepe							0.6	0.6	0.9		
<u>B) Non-Tropical</u>											
Beech	174.8	184.9	190.3	206.9	212.6	145.5	127.2	124.7	140.7	123.9	130.4
Birch	54.9	32.9	32.0	28.2	21.0	16.7	19.0	15.8	18.6	17.6	17.1
Oak	28.7	27.9	45.2	36.7	41.9	32.7	25.8	13.8	16.4	16.7	19.9
Ash			3.3	2.7	2.9						
<u>Total</u>	77016	803.5	745.4	786.2	1079.3	606.7	581.2	640.8	633.6	669.8	826.3

a/ Accumulative figure for breakdown - see Table 2.2/15

b/ Data in thousands of M3

Source: Yearbook of Timber Statistics - various years

Table 2.2/14. Per Specie Hardwood Imports - Logs

<u>Logs</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
A) <u>Tropical</u>	264.4 ^{a/}	197.4	235.9	248.7	297.7	144.1	135.6	162.1	152.3	152.2	140.8
Mahogany-Gabon	3.8	3.6		48.0	54.7	34.1	36.1	41.8	34.9	33.4	38.9
Others	58.9	39.2	56.6				8.5	16.6	16.3	16.5	14.4
Afr. Walnut			13.1	18.7	20.3	12.1	13.8	19.9	12.2	14.0	13.4
Iroko			22.9	18.1	23.2	11.2	10.9	9.9	4.4	3.7	4.5
Obeche	30.5	11.8									
Abura	24.4	10.1	10.3	10.4	24.1	8.9	1.1	2.6	6.7		
Utile	32.3	23.2	31.8	31.7	37.9	11.6	14.9	8.9	6.0	5.3	4.3
Afromosia			9.5	16.2	15.1	3.9	2.5	4.4	6.7	4.4	4.2
Makore			13.8	13.8	13.2	5.1	8.3	3.9	4.6	1.6	3.1
Sapele			12.3	8.7	8.6	6.0	4.6	4.7	6.2		
Agba			8.7	8.9	9.7						
Okoume											
B) <u>Non-Tropical</u>											
Beech										7.8	7.3
Oak											1.8
<u>Total</u>	291.1	218.4	254.4	277.3	340.6	171.7	166.2	199.9	174.7	160.2	167.9

Source: Yearbook of Timber Statistics - Various. T.T.F.

a/ Data in thousands of M3

The changing pattern of Tropical Hardwood imports becomes more apparent if we analyse the figure representing the Mahogany imports. From Table 2.2/15 we have that the increase in Mahogany imports was entirely due to the increase in Brazilian Mahogany and Philippine Mahogany (which strictly speaking should be classified separately as Lauan). Species like Keruing, Ramin and to a lesser extent Meranti (together with the above mentioned species of Lauan and Brazilian Mahogany) are steadily increasing, and all of them with the exception of Brazilian Mahogany, come from countries of South-East Asia. On the other hand the more traditional species from West Africa, like Iroko, Obeche, Sapele, Utile and Afrormosia, show a considerable decline. Furthermore, there is also a marked shift of the African countries as suppliers of certain species. Ivory Coast has become the major exporter of Iroko and Obeche, overtaking Ghana and Nigeria respectively, etc. This shift of emphasis from West African to South-East Asian species becomes more apparent if we look at Table 2.2/16. West Africa from a 22% share of lumber exports in 1973 has declined to a 12% in 1979, while it remains the major log exporter. On the other hand, South-East Asia, mainly through the record exports of Lauan from the Philippines and Indonesia, has for the first time captured over 50% of the total lumber exports. Finally, the role of South America, and in particular of Brazil, has increased from obscurity in 1973 to third place as a lumber exporter to the U.K. for 1979.

This brief analysis has shown that the pattern of tropical imports into the U.K. is changing. The traditional dominance of West Africa has given way to supplies from South-

Table 2.2/15. Species by Main Countries of Consignment

Lumber	1974	1975	1976	1977	1978	1979
1) Keruing	41.2 ^{a/}	55.4[+34] ^{b/}	66.4[+20]	80.4[+21]	73.1[- 9]	100.4[+37]
Malaysia		50.9(92%)	61.2(92%)	75.6(94%)	63.1(86%)	79.4(79%)
Singapore		4.3(7%)	4.9(7%)	4.5(5%)	6.5(9%)	13.0(13%)
Indonesia		0.1	0.2	0.1	3.3(4%)	7.6(7%)
Others		0.1 (1%)	0.1 (1%)	0.2 (1%)	0.2(1%)	0.4(1%)
2) Ramin	61.9	80.9[+30]	90.2[+11]	67.4[-25]	78.0[+16]	91.1[+17]
Malaysia		45.4(56%)	53.7(59%)	28.3	9.5	14.0
Singapore		17.1(21%)	9.1(10%)	6.8	13.5	18.1
Indonesia		18.0(22%)	25.5(28%)	31.9	54.9	58.2
Others		0.4(1%)	1.9(3%)	0.4	0.1	0.8
3) Meranti	24.4	30.4[+25]	49.9[+64]	36.4[-27]	38.1[+ 5]	36.4[- 5]
Malaysia		12.7(41%)	24.4(49%)	23.9(66%)	18.9(49%)	17.1(47%)
Singapore		17.7(59%)	23.8(48%)	11.3(31%)	18.6(49%)	18.6(51%)
Indonesia		--	1.0(2%)	0.4(1%)	0.1	--
Others		--	0.7(1%)	0.8(2%)	0.5(2%)	0.7(2%)
4) Mahogany	17.8	13.5[+74]	42.2[+212]	55.9[+32]	104.6[+87]	157.6[+ 5]
Ghana		2.7(18%)	5.5(13%)	1.8(3%)	1.6(1%)	1.2(1%)
Ivory Coast		1.9(14%)	3.6(8%)	1.9(3%)	1.6(1%)	1.5(1%)
Zaire		--	--	0.4(1%)	0.7	1.4(1%)
Philippines		3.1(23%)	13.5(32%)	24.6(44%)	62.8(60%)	87.3(55%)
Malaysia		--	--	0.2	0.3	--
Indonesia		--	--	0.2(1%)	0.9(1%)	--
Bolivia		--	0.4(1%)	0.2	0.1	--
Brazil		4.7(35%)	13.5(32%)	21.1(38%)	30.5(29%)	58.1(37%)
Argentina		--	0.1	0.8(1%)	0.1	--
Others		1.1(10%)	5.6(14%)	4.7(9%)	6.0(6%)	8.1(5%)
5) Iroko	15.6	18.1[+16]	31.7[+75]	20.0[-27]	24.4[+22]	24.8[+ 1]
Ivory Coast		8.7(48%)	24.4(77%)	17.9(89%)	21.5(88%)	18.9(76%)
Ghana		8.7(48%)	6.6(21%)	0.8(4%)	1.6(6%)	3.5(14%)
Cameroon		--	0.1 (1%)	--	0.2(2%)	--
Nigeria		0.2(1%)	0.1	0.1(1%)	--	--
Others		0.5(3%)	0.5(1%)	1.2(6%)	1.1(4%)	2.4(10%)
6) Obeche	14.9	18.1[+21]	17.9[- 1]	17.0[- 5]	14.8[-13]	13.4[-10]
Ivory Coast		0.6(3%)	9.8(55%)	13.2(78%)	11.6(78%)	9.7(72%)
Ghana		11.7(65%)	6.8(38%)	3.0(17%)	2.7(18%)	3.1(23%)
Liberia		--	0.2(1%)	0.1(1%)	0.1(1%)	--
Nigeria		5.4(30%)	0.4(2%)	--	--	--
Others		0.4(2%)	0.7(4%)	0.7(4%)	0.4(3%)	0.6(5%)
7) Sapele	16.2	8.2[- 5]	16.5[+101]	15.1[- 9]	15.9[- 2]	13.1[-17]
Ivory Coast		1.5(18%)	3.1(19%)	2.0(13%)	2.6(16%)	1.1(8%)
Ghana		4.4(54%)	4.9(30%)	3.3(22%)	3.1(19%)	1.4(11%)
Cameroon		0.2(2%)	3.8(23%)	4.9(32%)	5.0(31%)	4.7(36%)
Congo (Brz)		1.3(16%)	2.4(14%)	2.8(18%)	2.3(14%)	1.9(14%)
Gabon		--	0.4(2%)	0.5(3%)	0.9(6%)	2.1(16%)
Others		0.8(10%)	1.9(12%)	1.6(12%)	2.0(4%)	1.9(15%)
8) Utile	23.5	34.8[+48]	23.0[-34]	15.2[-34]	14.8[- 3]	11.7[-21]
Ghana		17.1(49%)	10.1(44%)	4.9(32%)	6.2(42%)	5.2(44%)
Congo (Brz)		1.0(3%)	0.9(4%)	0.8(5%)	1.0(7%)	1.6(14%)
Ivory Coast		14.3(41%)	9.1(39%)	5.9(39%)	5. (36%)	1.3(11%)
Gabon		--	0.2(1%)	0.2(1%)	0.5(3%)	1.2(10%)
Others		2.4(7%)	2.7(12%)	3.4(23%)	1.7(12%)	2.4(21%)
9) Afrormosia	13.8	10.9[-22]	8.2[-25]	5.9[-29]	9.0[+52]	5.2[-43]
Ghana		7.7(71%)	5.8(71%)	2.1(35%)	4.5(50%)	3.4(65%)
Zaire		1.3(12%)	0.5(6%)	2.2(37%)	3.7(41%)	0.9(17%)
Gabon		--	0.1(1%)	--	--	--
Congo (Brz)		0.7(6%)	0.5(6%)	0.2(4%)	0.6(7%)	0.4(7%)
Ivory Coast		0.8(7%)	0.9(11%)	0.7(12%)	--	--
Others		0.4(4%)	0.4(5%)	0.7(12%)	0.2(2%)	0.5(11%)

a/ Data in thousands of M3

b/ Figures in [] represent % change

c/ Figures in () represent % of the total

Source: Yearbook of Timber Statistics - various. T.T.F.

Table 2.2/16. U.K. imports of Hardwood by country of consignment

Country of Origin	1974		1975		1976		1977		1978		1979	
	Logs a/ 138(80.7)	Lumber b/ 135(22.3)	Logs 128(77.1)	Lumber 128(22.0)	Logs 150(75.4)	Lumber 133(20.8)	Logs 136(78.1)	Lumber 98(15.0)	Logs 126(78.7)	Lumber 107(15.9)	Logs 134(79.7)	Lumber 100(12.1)
A) Africa												
Ghana	30 17.5	54 8.9	32 19.3	72 12.4	32 16.1	53 8.3	18 10.3	20 3.2	11 6.9	25 3.7	5 3.0	25 3.0
Ivory Coast	50 29.2	46 7.6	57 34.3	35 6.0	69 34.7	62 9.7	60 34.5	51 8.0	56 35.0	54 8.0	71 42.2	43 5.2
Nigeria	31 18.1	13 2.1	17 10.2	10 1.7	3 1.5	1	1 0.6	-	-	-	-	-
Cameroon	7 4.1	3 0.5	4 2.4	1 0.2	8 4.0	5 0.8	10 5.7	8 1.2	11 6.9	7 1.0	12 7.1	8 1.0
Liberia	7 4.1	-	12 7.2	2 0.3	29 14.6	4 0.6	34 19.5	8 1.2	38 23.7	6 0.9	34 20.2	8 1.0
Gabon	6 3.4	2 0.3	4 2.4	-	5 2.4	1 0.2	5 2.9	1 0.2	2 1.7	2 0.3	5 3.0	5 0.6
Congo R./Zaire	1 0.6	5 0.8	-	2 0.3	-	-	5 2.9	4 0.6	3 1.9	6 0.9	5 3.0	4 0.5
C. African Rep.	-	2 0.3	-	-	-	-	-	-	-	1 0.2	-	-
Congo R. (Braz.)	3 1.7	4 0.6	1 0.6	4 0.6	2 1.0	4 0.6	2 1.2	4 0.6	3 1.9	5 0.8	-	5 0.6
Angola	-	1 0.1	-	-	-	-	-	-	-	-	-	-
B) E. Asia/Pacific	4 (2.3)	197(32.6)	4 (2.4)	223(38.4)	9 (4.5)	274(42.8)	11 (6.3)	274(43.3)	4 (2.5)	317(47.3)	4 (2.4)	426(51.6)
Malaysia	-	109 18.0	-	124 21.3	2 1.0	159 24.8	3 1.7	164 25.9	-	125 18.6	-	145 17.5
Singapore	-	41 6.8	-	47 8.1	-	45 7.0	-	29 4.6	-	47 7.0	-	59 7.1
Japan	-	8 1.3	-	13 2.4	-	7 0.9	-	10 1.6	-	6 0.9	-	7 0.8
Indonesia	-	11 1.8	1 0.6	19 3.3	2 1.0	28 4.4	-	34 5.4	-	60 8.9	-	68 8.2
Thailand	-	8 1.3	-	5 0.9	-	4 0.6	-	3 0.5	-	-	-	-
Philippines	-	4 0.7	2 1.2	6 1.0	2 1.0	23 3.6	3 1.7	25 3.9	-	63 9.4	-	125 15.1
Burma	3 1.7	6 1.0	1 0.6	4 0.7	2 1.0	1 0.2	3 1.7	2 0.4	3 1.9	6 0.9	2 1.2	5 0.6
Taiwan	-	-	-	-	-	1 0.2	-	-	-	1 0.2	-	-
Papua New Guinea	-	-	-	-	-	-	-	3 0.5	-	3 0.4	-	8 1.0
C) Latin America	2 (1.2)	31 (5.1)	2 (1.2)	24 (4.1)	2 (1.0)	40 (6.2)	5 (2.9)	47 (7.4)	4 (2.5)	49 (7.3)	3 (1.8)	89 (10.8)
Brazil	-	19 3.1	-	14 2.5	-	29 4.5	-	35 5.5	-	39 5.8	-	77 9.3
Honduras	-	-	-	-	-	-	-	-	-	-	-	-
Argentina	-	-	-	-	-	-	-	2 0.4	-	-	-	-
Guyana	2 1.2	4 0.7	2 1.2	5 0.8	1 0.5	3 0.5	-	4 0.8	-	4 0.6	2 1.2	5 0.6
Colombia	-	-	-	-	-	-	-	-	-	-	-	-
Equador	-	5 0.8	-	5 0.8	-	4 0.4	-	3 0.5	-	4 0.6	-	4 0.5
D) Europe/U.S.S.R.	24(14.0)	194(32.1)	26(15.7)	165(28.4)	33(16.5)	165(25.8)	18(10.3)	183(28.9)	24(15.0)	163(24.3)	25(14.9)	171(20.7)
E) North America	3 (1.7)	48 (7.9)	4 (2.4)	39 (6.7)	4 (2.0)	27 (4.2)	4 (2.3)	31 (4.9)	-	32 (4.8)	1 (1.2)	40 (4.8)
Total	171	604	166	581	195	640	174	633	160	670	168	826
	-50	-56	-3	-4	+19	+10	-13	-1	-8	+6	+5	+23

East Asia and South America. The result is an increasing shift towards "new" species and "new" selling techniques. These two factors are expected to dominate the future trends of U.K. imports of Tropical Hardwood.

2.2.4. PATTERN OF THE U.K. TROPICAL HARDWOOD IMPORTS

In this section, the choice pattern of the end-use segments as a whole is defined; this is achieved by establishing and analysing the property characteristics of the Tropical Hardwood species which are imported into the U.K. But it must be clear that imports do not necessarily mean demand; that is, the fact that a particular specie has been imported does not mean that there is a continuous demand for it, therefore I thought it more appropriate to analyse those species which have been imported into the U.K. for the past decade. In this way, I hoped to eliminate any one-off cases of imports.

2.2.4.1. U.K. Imports Characteristics

From Appendices 2.2/1 and 2.2/2 we have those species which have been imported into the U.K. in some quantities during the past decade. The properties of these species were analysed viz. density, workability, log form, shrinkage, finishing, strength, durability, colour, texture and grain. Each of their properties is classified either as good/high (A) or medium (B) or low/bad (C) (this classification was first applied by Erfurth & Rusche, 1976 and the standards used for each grade can be found in Appendix 2.2./3).

The analysis produced the following results:

Table 2.2/17. Density breakdown of species imported into the U.K. - Lumber.

<u>Density</u>	<u>Number of Species</u>	<u>As a % or the Total</u>
Low	9	16
Medium	17	31
Upper	21	38
High	<u>8</u>	<u>15</u>
Total	55	100

-I- LUMBER

(i) Density: On an overall basis we see from Table 2.2/17 that most of the species are of either medium or upper density with no significant preference between them (31% to 38% of total imports respectively).

Table 2.2/18. Property breakdown of the species imported into the U.K. - Lumber

Properties	For all densities			
	<u>Total</u>	<u>Good</u>	<u>Medium</u>	<u>Low</u>
	%	%	%	%
Workability	55(100)	40 ^{*1} (73)	13(24)	2(3)
Shrinkage	55(100)	12 (22)	36(65)	7(13)
Finishing	55(100)	45 (82)	10(18)	-
Strength	55(100)	32 (58)	20(36)	3(6)
Durability	55(100)	26 (47)	17(31)	12(22)
Log form	45 ^{*2} (100)	40 (89)	5(11)	-

(*1 number of species)

(*2 the apparent discrepancies of the totals is due to lack of information on certain species.)

(ii) Properties: From Table 2.2/18 we derive the property characteristics of lumber:

- i. a reasonable workability is required (73%),
- ii. medium shrinkage is acceptable (65%).
- iii. a very high finishing is required (82%).
- iv. high strength is preferable (58%) but medium will also be acceptable in some cases (36%).
- v. although high durability is desirable (47%), medium and low will also be acceptable on some species,
- vi. good log form is very important (89%).

-iii- Physical characteristics: from Table 2.2/19 -i,ii, we see that

i. there is some preference for brownish species (42%) with reddish (29%) and yellowish (29%) equal,

ii. as for the texture, a coarse texture was preferable (54%) compared to fine (33%) and medium (13%), and

iii. there was no preference between straight and interlocking grain (52% to 49% respectively).

-II- LOGS: -i- Density: overall we have, from Table 2.2/20 that there is an equal number of species of medium and upper density and that low density species are also preferred to high density species.

-ii- Properties: From Table 2.2/21 we have that:

- (i) very good workability is required (84%),
- (ii) medium shrinkage is acceptable (77%),
- (iii) very high finishing is absolutely essential (87%)
- (iv) medium and high strength are equally acceptable (44% and 50% respectively),
- (v) there is some emphasis on high durability (46%) and this especially important with low density species,
- (vi) as expected log form is the major consideration (97%)

Table 2.2/19

(i)	(ii)	(iii)
Colour breakdown of Imports into the U.K. - Lumber	Texture breakdown of imports into the U.K.-Lumber	Grain breakdown of imports into the U.K. - Lumber
<u>Colour</u>	<u>Texture</u>	<u>Grain</u>
<u>species</u>	<u>species</u>	<u>species</u>
<u>total</u>	<u>total</u>	<u>total</u>
<u>As a % of</u>	<u>As a % of</u>	<u>As a % of</u>
<u>total</u>	<u>total</u>	<u>total</u>
<u>%</u>	<u>%</u>	<u>%</u>
Brownish	Coarse	Straight
23	30	28
42	54	51
Reddish	Medium	Inter-
16	7	locking
29	13	27
Yellowish	Fine	49
16	33	
29		
Total	Total	Total
55	55	55
100	100	100

Table 2.2/20. Density breakdown of the species imported into the U.K. - Logs

<u>Density</u>	<u>Number of species</u>	<u>As a % of the total</u>
Low	7	23
Medium	10	33
Upper	10	33
High	<u>3</u>	<u>11</u>
Total	30	100

Table 2.2/21. Property breakdown of the species imported into the U.K. - Logs.

<u>Properties</u>	For all densities			
	<u>Total</u>	<u>Good</u>	<u>Medium</u>	<u>Low</u>
Workability	30(100)	25 [*] (84)	4(13)	1(3)
Shrinkage	30(100)	5(17)	23(77)	2(6)
Finishing	30(100)	26(87)	4(13)	-
Strength	30(100)	15(50)	13(44)	2(6)
Durability	30(100)	14(46)	8(27)	8(27)
Log form	30(100)	29(97)	1(3)	-

(* Number of species)

(iii) Physical Characteristics: Finally, from Table 2.2/22(i,ii,iii)

- i. there was preference for reddish colour (50%) with brown (41%) and yellow (9%),
- ii. fine and coarse textures are equally acceptable (44% each), and
- iii. there was some preference towards straight grain (67%).

2.2.4.2. The U.K. imports and Lesser-known species

Let us now examine/compare the species which are well established into the U.K. market against some lesser-known species. Table 2.2/23 presents a percent summary of the established species,^{*1} and a similar analysis on lesser-known species (Erfurth & Rusche, 1976).^{*2}

It is obvious from the above table that there are very few qualitative differences between the commercially used and the lesser-known species, the only ones are:

- (a) there were more (C) grade lesser-known species of low and medium durability (62% to 46%),
- (b) the lesser-known species with upper and high density showed better workability than the established species (72% to 48% of A grade respectively),
- (c) lesser-known species with upper and high density compared favourably to established species on finishing properties (87% to 72% or A grades respectively), and
- (d) finally, the log form of the commercially accepted species

*1 A total percent was calculated on all commercially used species, that is lumber and logs together.

*2 For the criteria of selecting the lesser-known species see Appendix 2.2/4.

Table 2.2/22

(i)	Colour breakdown of Imports into the U.K. - Logs.	No. of species	As a % of total	(ii)	Texture breakdown of imports into the U.K. - Logs.	No. of species	As a % of total	(iii)	Grain breakdown of imports into the U.K. - Logs.	No. of species	As a % of total
	Reddish	15	50		Coarse	13	44		Straight	20	67
	Brownish	12	41		Medium	4	12		Inter-		
	Yellowish	3	9		Fine	13	44		locking	10	33
	Total	30	100		Total	30	100		Total	30	100

Table 2.2/23. Property comparison between established species in the U.K. market and lesser-known species

<u>Properties</u>	<u>Established Species</u>						<u>Lesser-known Species</u>					
	Low and Medium Densities			Upper and High Densities			Low and Medium Densities			Upper and High Densities		
	Good (A)	Medium (B)	Low (C)	Good (A)	Medium (B)	Low (C)	Good (A)	Medium (B)	Low (C)	Good (A)	Medium (B)	Low (C)
Workability	100*	--	--	48	45	7	90	10	-	72	20	8
Shrinkage	23	77	--	21	55	24	11	82	7	8	59	38
Finishing	92	8	--	72	28	--	86	14	--	87	13	--
Strength	19	70	11	90	10	--	21	67	12	90	10	--
Durability	27	27	46	66	34	--	18	20	62	57	34	9
Log form	84	16	--	95	5	--	39	61	--	53	47	-

(* the figures represent percentage of the total number of species analysed)

was superior to that of lesser-known species on all densities.

Let us now examine closer those lesser-known species.

The origin of these species was (Table 2.2/24):

Table 2.2/24. Areas of origin of the lesser-known species

<u>Area of origin</u>	<u>Number of Lesser-known species</u>	<u>As a % of the Total.</u>	<u>Number of commercial species*</u>	<u>As a % of the Total</u>
W. Africa	112	13	105	11
S.E.Asia and the Pacific	465	54	634	67
Tropical S. America	<u>263</u>	<u>33</u>	<u>210</u>	<u>22</u>
Totals	840	100	949	100

(* on a world wide basis)

Source: Erfurth and Rusche (1976).

Table 2.2/25. Density breakdown of the lesser-known species

<u>Density</u>	<u>Number of Lesser-known species</u>	<u>As a % of the total</u>
Low	84	10
Medium	244	29
Upper	256	30.5
High	<u>256</u>	<u>30.5</u>
Total	840	100
	=====	=====

Source: Erfurth and Rusche (1976).

If we now compare Table 2.2/25 with Tables 2.2/17 and 2.2/20, it becomes obvious that there are some differences, mainly between species of upper density and high density (both lumber and logs of the U.K. imports have a higher % of upper density species and a lower % of high density species than the lesser-known species).

There are three important conclusions:

i. there are no great differences between the properties of the lesser-known and commercially accepted species,

ii. log form property characteristics play a major role in the acceptance of lesser-known species,

iii. there are more lesser-known species with upper and high density (68) than with low and medium density (44).

Therefore, any future marketing efforts designed to increase the number of Tropical Hardwoods utilised should be aimed at overcoming the problems associated with using heavier species.

2.2.4.3. The profile of a timber which will be ideally suited to be introduced into the U.K.:

- (a) good workability
- (b) of medium or upper density
- (c) reasonable shrinkage factor
- (d) very very good finishing
- (e) reasonable strength
- (f) durability not important except of special cases
- (g) good log form
- (h) of brown-reddish colour
- (i) of coarse texture, and
- (j) straight grain

Here I should add that another aspect which although it was not included in the analysis is of great importance is occurrence in the tropics. There must be some degree of supply assurance and continuity for at least five years.

CHAPTER 3

LITERATURE

This chapter is entirely devoted to a brief critical appraisal of some of the most important publications which, during the past decade, have had some influence on the marketing of Tropical Timber.

3. LITERATURE

Most of the literature available on the subject of Timber marketing and product development of timber products has been accumulated in one of three ways,

a) in seminars and meetings staged either by international bodies, like the FAO, ECE and UNCTAD/GATT, or by local organisations like the German Federation for International Development, the Singapore Timber Industry Board and for the U.K. TRADA, BRE and the Institute of Wood Science, etc.,

b) from work done in Colleges and Universities, particular emphasis will be placed on the works of the University College of North Wales for the U.K. and Oregon, Syracuse of the U.S.A.,

c) to a lesser extent from independent publications, like magazines and textbooks (i.e. Timber Trade Journal, Wood Science, etc.).

The aim of this section will be to present an overview of the various pieces of work which in my opinion have made significant contributions to the understanding and improvement of timber marketing (and therefore of Hardwoods and lesser-known Tropical species). There is particular emphasis on the contribution of individual references on the design of the surveys which were undertaken by the present research. Finally, there are certain works which deserve particular attention and for those there is a section at the end that deals with them separately.

3.1. THE TRADITIONAL APPROACH

I would like to start by commenting on the overall value of the FAO as a driving force behind the development of the international timber trade. The regular seminars and meetings which are organised by the FAO have contributed immensely. It was during the Third FAO Committee on Forest Developments in the Tropics (1974) that the pattern of promoting lesser-known species was established. The meeting stated that "... the main reasons for attempts of promoting such species (i.e. lesser-known) are the economic benefits that can be derived from a fuller utilisation of the forests..." and went further to define the different promotional methods which could be employed.

3.1.1. Promotion of individual species: This approach is based on the experience which has been acquired over the years and which is rooted in the many local uses to which timber has been put; through practice, the names used for different species became representatives of a range of outstanding properties in relation to a number of recognised ones, which means that the closer the properties of an individual lesser-known specie come in practice to those of a prime commercial specie the better its chances to be accepted as an alternative.*1

*1 But it is obvious that this is a statement of "direction" rather than one of practical use. It will be impossible to find two different species with absolutely identical properties, therefore any such promotional strategy will have to overcome the differences of the two species rather than be based on their similarities. The real problem is, how are these differences perceived by the users, are these of equal importance or not, do all users place the same importance to them etc. Therefore although the above statement bears some truth it could not on its own be used as an indication of market acceptance.

3.1.2. Promotion of grouped wood species: The promotion is based on the grouping of mixed species which have similar use properties;^{*2} within this area, it appears that there are two lines of promotion, both aiming at establishing classifications and marketing systems,

i. to establish common uses for utility type timbers and to attempt to group as many of the lesser-known species as are suitable to meet the requirements of the respective end-use segments,

ii. to single out all those species with assumed higher quality potential, for more detailed investigation aimed at optimising their value,

3.1.3. Promotion of Tropical woods for integrated industrial uses: That is in the form of chips and fibres; once the Tropical species have lost their identity as solid wood and are used in their disintegrated form for the manufacturing of large quantities of homogeneous products, market promotion has to be oriented exclusively towards these end-products and their established and potential uses.^{*3}

*2 The main work on these lines has been undertaken by T. Erfurth and is examined in greater details further in the text.

*3 Again T. Erfurth has done some work on the subject, but this study will not deal with the problem of promotion for integrated industrial uses, it is only concerned with promotion of lesser-known species in their solid form (logs and/or lumber).

3.2. INFORMATION

Let us start with the need for information, something that is absolutely essential if the appropriate strategy is to be employed.

It is obvious that detailed and readily available information is the key to any decision about whether or not to invest and the appropriate promotional strategy to be employed. This need, became obvious very early with Oxley (1967) putting forward the idea of a "central clearing house" of information. That idea was further developed by Morellet (1969) who attempted to describe the sort of information that should be gathered and the procedures to be followed in order to implement the idea.

In the Hamburg meeting of 1970, by general agreement a special project group was established comprising of laboratories within the IUFRO^{*4} to engage with all problems connected with properties and utilisation of Tropical woods. The aim was to encourage a close co-operation of the different forest products institutions and of other laboratories working in the same field. The test results, based on a set of uniform test procedures, was decided to be collected at the Centre Technique Forestier Tropical at Nogent-sur-Marne. It is my opinion such an international centre could be more effective if its main purpose was to create a closer co-operation between exporting and consuming countries because such a "clearing house" could provide uniform information to both parties, eliminating any possible problems that might come about because of the application of different test standards.

*4 International Union Forest Research Organisation.

At the same time, publications and leaflets have been issued which provide technical and commercial information on woods available for export, examples are "Ghana Hardwoods" by the Ghana Timber Marketing Board, "Bois de Côte d'Ivoire" by the Syndicate des Producteurs Forestier de Côte d'Ivoire , "General Nomenclature for Tropical Timber" by International Technical Tropical Timber Association, "Maderas Colombianas" by the Fondo del Promocioni de Exportacions, "Timbers of the Solomon Islands" by the United African Co. Ltd. (UACO), etc. Overall, a large amount of information has been published in well-known compilations. In a recent paper Chudnoff and Young (1980) estimated that about 4000 technical articles have been published over the last 30 years. There is a large amount of literature that describes properties of species and it seems that the premise has been that if we can precisely describe the characteristics of a specie we could then assign it to a use where it could perform best. An extension of the use-property information was an end-use classification of each specie. Such advice and guidance on the application of timber has been published in the U.K. by the UACO together with TRADA in the "Guide to the use of W. African Hardwoods for structural purposes", and by Webster (1978) in the "Timber Selection by Properties";^{*5} Similar work has been undertaken by Keating (1979), Dielen and Raven (1979), Cailiez and Gueneau (1972), Ohta and Kinoshita (1977), Wangaard et al. (1949-55), etc. and no doubt by many others who have realised the potential value of an end-use classification.

But Guiscafe (1977) noted that, in spite of all the studies undertaken by various laboratories on the subject of

^{*5} This work is discussed more extensively further in the text.

promoting an increase in the use of Tropical timbers, the results of these efforts proved rather disappointing. He continues, although some lesser-known species have been experimented with and used, it cannot be said that any such specie has been introduced. He attributes this failure rate to the lack of a more broad informational basis. It is clear that a specie to be regarded suitable for a particular end-use segment will have to be considered on a variety of factors like tree form, accessibility, volume availability etc. and most of the research in forest products has up to now been focused on just wood properties factors. Thus according to Chudnoff and Young (1980) "... the trade continues to be for the most part, still specie selective...". What I find surprising is that all the research is looking at the problem from the products side, all the efforts are geared around the product and there are only passing remarks about the consumer (in this case the end-users), his attitudes, buying behaviour, perception of promotional activities, etc.

In the ECE/FAO (1979) seminar it was realised that the knowledge and information on Tropical Hardwoods was still incomplete in many respects specially regarding lesser-known species and that the existing information was not always readily available/accessible to the ultimate users "... either because data were scattered or because the form in which they were presented was too complex...". This lack of information at the end-users level, according to McNeil (1974), contributes to the lack of confidence when it comes to lesser-known species. He says that one of the greatest challenges for forest industries is still the education of the market, "It is my belief that until the innate conservatism and general

lack of knowledge of the versatility of forest products is improved by the use of all the modern media, sustained progress towards the optimum product development will not be achieved".

I would like to finish this section by saying that it is the experience and efforts of individual firms that yield the most valuable information, for obvious competitive reasons such information is not made accessible to the trade. This is where Trade Associations (like the TTF) could and should play a more positive role in collecting such data and making it available to all firms involved in the promotion of lesser-known Hardwoods and timber in general.

3.3 THE PROBLEM IN PRACTICE

Now let us examine the actual problem as it is in practice. The conflict which exists between merchants/importers and end-users was first identified by Stearns (1969) as being the result of such factors as a) fear of change, b) need for assured ample volume, c) exclusive sales were not recommended, d) realistic price setting, e) usage abroad does not create any interest, f) need of sufficient sample volumes and finished profiles and g) availability of detailed information. These factors comprise the accumulated experience of the writer in the promotion of individual Tropical species in the U.S. market; although he quotes examples for each factor of conflict he does not provide any information about whether different end-users place different importance on those factors or if all these factors or some of them are perceived in each case depending on the circumstances.*6 More recently, Guiscafre (1977), by reviewing past promotional attempts, reached the conclusion that the habit has developed of expecting exceptional qualities from all tropical timbers. The first introductions lacked precision and unfortunately a number of mistakes were made and some serious failures resulted which created a prejudice that still lingers against "new tropical varieties", he says that the overall picture shows numerous failures with only very limited successes. For those few successes he says that, when efforts have lead to success the latter has more often been the result of a fortunate "... combination of circumstances largely unrelated

*6 Nevertheless, during my personal in-depth interviews, I found that the same factors of conflict apply for the U.K. market, and therefore were used in the design of the questionnaires.

to the efforts of the promoters, such as a much lower cost price, lack of better known varieties, greater supply facilities and pressure on demand..." Surely such factors could well be the result of good fortune, but equally, any marketing strategy should be designed so as to be able to take advantage of such events (time the activities to coincide with favourable external conditions). Therefore, he says that the promotion of lesser-known species should be placed under the guidance of the International Tropical Timber Bureau. Then he went further, analysing the necessary objectives, ways of staffing the department and the setting of budgets. There are two points that have to be made clear here. I do not believe that any centralised effort can solve the problems associated with end-users attitudes, etc., but such a Bureau could be used by exporting countries to approach importing firms that would be prepared to undertake the promotion of such lesser-known species. Such a mediator (like the ITTB) will provide credibility and some form of assurance to both parties. Finally, on this piece of work I would like to say that the promotional strategy was described in a very analytical way but lacked any empirical evidence. It was interesting nevertheless to note that there was mention of the need for setting objectives before any promotional campaign is undertaken.

A very similar centralised promotional approach to the problem was suggested in a meeting in Libreville (*Revue Bois et Forêts des Tropiques*, 1973). The scheme incorporated various inducing procedures like tax exemptions, fixed minimum diameters etc. as well as a monitoring system of test results

(administered by the UCBT)*⁷ This effort was aimed at inducing importers rather than overcoming the real problems. It furthermore appeared to be a very bureaucratic and time-consuming approach.

The above criticisms led Becker (1973) to write (addressing his paper to the producing countries) that "... an important presupposition for a successful activity of a promotional agency is the accordance and co-operation with the forest products industry and the timber trade in the country where the sales of Tropical wood shall be increased ... it is the task of the agency to give impulses to the total marketing of Tropical woods...". It is obvious that there is a need for independent bodies so that they will provide some form of reassurance both to producers and importers, but the ultimate marketing effort could only be successful if it is conducted at a firm level. Becker (1973) goes on to emphasise the importance of a segmentation based promotional strategy, with clearly defined objectives and goals and he presents some examples of advertising, publicity, sales promotion and personal selling of lesser-known species into the FRG.

A more recent paper, by Miller (1979), presented a two-fold analysis, first identification of the reasons which impede the optimum utilisation of forest products, and then suggestions about how to remedy each reason. He recommended a "... creative and innovative marketing approach programme..." but he did not describe one. He made the same mistake as many others when he said "The nitty-gritty of the situation remains that developing nations must remain responsible for market and distribution strategies which will reduce buyer resistance to the acceptance of lesser-known species". He

*7 Union pour le Commerce de Bois Tropicaux.

implied that importers are those who resist the introduction of such species and disregard the importance of end-users. The same misconception comes up time and time again in various papers and there is no reason to repeat the same arguments. What could be really constructive, as Gammie (1978) stated (although not particularly for lesser-known species), would be a joint expenditure on stocking and market testing new species (and/or specie groups) which are carefully chosen for their suitability to the end product envisaged. Such a co-operation (Gammie, 1978) requires a high degree of loyalty between the participants, that includes suppliers and importers and end-users, but unfortunately there is no evidence about the strength of such loyalty (the present research has set out to find the degree of customer loyalty regarding end-users).

Finally I would like to mention the work by Enabor (1972), he postulated a decline in the role of price and a corresponding increase in the influence of non-price competition/importance in the promotional efforts. He particularly emphasised the re-orientation of forest products marketing on improving the psychological image of wood.^{*8} And

*8 The only work on psychological aspects of wood perception that I have come across is that of Blomgren (1965). He carried out a survey which was: for nine different species, respondents were asked to assign the five attributes which they associated most and the five which they associated least with the particular species. The attributes given were descriptive words, like relaxing, sophisticated, elegance, etc. The ratings were given according to a mental image that respondents had of the specie, and even Blomgren agreed that those could have been different if a sample was shown at the time of rating. From 75 respondents he concluded that there is a definite difference between perception of different sexes, but he said that it is doubtful whether many individuals who have definite mental images of a given wood could

Enabor (1972) continued by making a reference to other elements like advertising, promotions, distribution (in the sense of placing goods and services in the hands of those who desire them) etc. by saying that such basic marketing elements have not received the attention deserved. The rationale is that if rising relative prices of wood cannot be held, and if consumer preferences are substantially non-price based, then forest products marketing will need to shift its emphasis to those non-price factors and therefore firms will have to become more market conscious and improve their non-price competitiveness. The two other areas that deserve attention are, (a) market research and product development, and (b) advertising and trade promotion, so as to have sufficient information to design a strategy of non-price elements, in order to manipulate the demand and modify consumer response.

The last two articles by Miller (1979) and Enabor (1972) come closer to the aim of the present research and to quote Enabor (1972) "... forest industries should develop greater understanding of the customers needs and product developments should keep abreast with or be in anticipation of such needs...".

*8 (continued)

recognise it by its appearance and therefore it could be interesting to know whether consumers base their decisions on their associations to the name of the wood or whether the actual appearance is just as important. Unfortunately results such as these do not have direct application to specific wood products since product personalities or images change to some extent in context. Therefore, there may be different images associated with teak coffee table, teak flooring, teak panelling, etc. Finally, no socio-demographic analysis of the respondents was conducted.

3.4 THE CONTRIBUTION OF TECHNOLOGY

Turning to the technical reasons that make the introduction of lesser-known species difficult, Preston (1969) in particular derived a very extensive list of basic wood properties and technical properties.*⁹ He states that very few species satisfy all the technical and physical requirements, some species may never be expected to qualify for promotion but many others either as individual or in a commercially acceptable group, may now be candidates if adequate information is provided where it is needed. Technological break-throughs and/or slight modifications of existing conditions may permit species that had failed in the past to pass the required criteria. Taking this point a step further, Chudnoff and Young (1980) said that end-users tend to characterise unused or little-used species as inferior because their estimates are based on their current socio-technical knowledge. Their assessments assume that present resources will be used to produce products by presently known techniques for the present economy. Also Miller (1979) agrees about the "... myopic view ..." that lesser-known species are secondary timbers and will remain such by virtue of secondary performance.

Someone who did extensive research on this particular area is Collander. He produced a list of technical reasons which could provide difficulties, but he also said that such difficulties are often exaggerated and that techniques and

*⁹ The lists have partly been used in the design of objective questions in the three questionnaires in this research. It proved of particular usefulness in the "small questionnaire" where the aim was to find whether timber is a matter of

that techniques and machinery are available that can generally overcome such problems, or at least reduce their effects (Collardet, 1976-a-). He also provided an extensive list of methods and ways to overcome those problems through technology (Collardet, 1976-b-), and he concluded that some of the reasons why so many of the wood species found in the tropical moist forests remain neglected are technical, others economic and/or commercial and yet others are purely psychological.

*9 (Continued)

perception or not and test the knowledge of respondents. Unfortunately the lists were too extensive so only selected items were used.

3.5 PRACTICAL CONTRIBUTIONS

Special mention should be made of certain individuals or institutes that have contributed, particularly in respect to the U.K. market.

3.5.1. The University College of North Wales has had a long involvement, particularly the Wood Science Department, of producing both academic and consultancy research. As far back as 1968 a consultancy exercise (UCNW, 1968) highlighted the problems which were to remain with any lesser-known species introduction ever since. By presenting a case-history of a particular firm's attempts to introduce species, mainly from West Africa, the study pointed out some definite advantages that an integrated company possesses, with emphasis on brand-image and access to a wide variety of markets. But what is important to note is the fact that since then certain important concessions (tropical forest areas) that some enterprises had, have been withdrawn by many of the Tropical Countries. Therefore importers/merchants are now much more dependent on factors outside their control. Another point is that the particular study dealt with Western Europe as a whole which means that the particular problems associated with the U.K. market, although mentioned, did not have any extensive analysis. Nevertheless, it did provide a list of indicative factors which timber importers and end-users "believe" to be prerequisites for success. But the study did not provide any indication of relative importance of those factors.^{*10} Two interesting conclusions of the study were, that

^{*10} The present study has used these factors in the design of the questionnaires.

- a) any successful introduction will only come about by the use of a total-marketing programme,
- b) very little progress has been achieved in the last 15 years to provide answers to the same problem.

Later Towler (1974) produced an extensive analysis of the U.K. Hardwood Trade and the end-use segments using such material. The research consisted of a cargo/invoice analysis for the period between October 1971 and September 1972. The data which was collected provided detailed figures of consumption, sizes used/preferred by different end-use segments, factors affecting Tropical Hardwood consumption etc. There is no need to analyse this particular work here since it is extensively referred to throughout the text and therefore its importance will become apparent. What has to be said here is that that work did not provide qualitative data, it was more concerned with a "... quantitative assessment of demand..."

Finally, there should be a mention of a paper (UCNW, 1977) mainly on joinery and to a lesser extent on the furniture segments. This was the only paper which mentioned the attitudes and buying behaviour of the people or groups of people that take those decisions. The paper had certain limitations,

- a) only two end-use segments were mentioned,
- b) no indication about relative importance and possible use of the information was made in designing a marketing strategy,
- c) some of the factors tested (particularly the commercial factors used as purchasing criteria) were too simplistic.

On the same lines Cooper (1979) provided some answers, with particular suggestions/directives about a possible marketing

framework, but the aim was the substitution of softwoods by hardwoods in the joinery trade only.

3.5.2. General Literature (textbooks):

There is a disappointing lack of general literature (textbooks) on the subject and the articles that appear in various periodicals tend to be technical rather than relating to marketing problems. As Rich (1970) stated, "The secondary role to which marketing in the forest industries has been relegated is reflected in the few books which have dealt with the subject. In texts of forest products or forest economics, for instance, marketing is either treated as an adjunct to production or is described briefly in terms of its physical supply or exchange functions".

An attempt by Duer (1972) to produce a theoretical text with reference to timber I found very naive in its approach. More important are the efforts by Gregory (1972) who analysed in detail the nature of the forest products (and therefore of Tropical Hardwoods) demand with reference to the structure of the market, and listed the factors influencing timber production. Although the text tended to be too theoretical it did provide useful guidance towards the design of the present research. A far more useful text is that of Rich (1970). Of particular importance is the fact that separate analysis is performed for lumber-wood products and paper-pulp marketing. The author systematically goes through all the traditional marketing elements. The drawback is that it is designed for the U.S. market which in many respects is very different from the U.K., but still provides a systematic approach to the whole concept. It must also be said that Rich has been contributing

brief (but regular) articles in the Forest Products Journal dealing with current marketing problems of the timber trade in the U.S. and the international market, these articles are used throughout the text.

3.5.3. T. Erfurth.

Considerable research has been done by Erfurth for the FAO. He used the term "use properties" (Erfurth, 1976-a-) to describe the set of properties descriptions which are closely related to actual and possible alternative applications of each specie. The theme of his particular research made use of this definition and concluded that more attention must be given to the grouping of wood species in order to establish an end-use property classification system with emphasis on specifying end-use requirements. But he makes clear that such an approach should be employed selectively, since species which satisfy obvious factors like high quality, ample occurrence, competitive price, etc., should continue to be promoted individually. Going back to the concept of specie grouping, Erfurth makes it clear that success or failure of grouping wood species for promotional purposes largely depends on the degree of similarity in use properties. Even a few deviations from average properties may cause severe disturbances in the chain linking producers, traders and users, while larger differences seriously and adversely affect prices, and often result in breaking up the grouping (an obvious example are supplies from S.E. Asia).

Such a marketing strategy needs to be supported by

a) resource surveys and industrial identification as well as pre-feasibility studies in specific forest areas,

and, b) industrial feasibility studies and the subsequent industrial management phase which yield specific technical and market information for deciding on product mix to be marketed.

It became obvious that detailed information on all species is essential, and furthermore co-ordinated efforts are needed from all relevant international organisations to establish a comparable classification system world-wide. For that purpose Erfurth and Rusche (1976) undertook to examine and evaluate a huge number of tropical species (the work has been published in three volumes, one each for West African, South American and South-East Asian species). The evaluation of the species was based on property classifications, log form, wood value and occurrence in the forests. The mechanics of the valuation are explained in another section of the text. There was a further comparison between the well-known species and those lesser-known species. The author believed that the really unknown wood species is small. By such a comparison, he drew some interesting conclusions:

a) use properties of commercial and lesser-known species generally speaking do not differ substantially and from a technical viewpoint such species are utilizable,

b) the only significant differences found were a superior log form for the commercial species compared to the lesser-known ones and also a superior occurrence rate.*¹¹

c) any promotional efforts in favour of the lesser-known species must be aimed at overcoming the technical problems which are related to using heavier woods.

*¹¹ Others, like L.L. Quimbo and Wing Chong Wong (1971) performed a different analysis but they still came to the same conclusions.

In a number of different articles he emphasises that there is a high degree of flexibility in the use of most wood species and that if a specie is marketed at a premium price it is normally because of good average properties and at least one additional outstanding feature. As for grouped species he says that prospects are becoming increasingly favourable for integrated industrial uses, that is in the form of chips and fibres; such developments will result in competition between local sawmills, veneer and plywood mills for utility and low grade wood materials (Erfurth, 1976-b-). Finally, he adds, particular attention should be given to the possibility of actively developing local markets (in the producing countries) in order to reap the advantages of using mixed tropical hardwoods (Erfurth, 1973).

The detailed gathering of information undertaken by Erfurth is of great importance. It is providing a uniform system of assessing species according to similar variables. Furthermore, it makes clear what the differences between commercial and lesser-known (used) species are on a number of objective criteria, rather than arbitrarily classifying as lesser-used species those which do not possess properties to satisfy end-users' requirements. By classifying species on a comparable basis he made it clear that there are a number of alternative promotional strategies. The decision which one to employ should be based on the particular advantages of the specie. Therefore particular attention should be placed on methods of seasoning, preservation treatment or modification of product.

But I believe that this kind of work is of greater value

to the producing countries than to the importers/merchants. It provides those importers who are planning to invest in lesser-known species with a framework for assessing the potential of each specie, but more importantly, if used properly could provide guidance to the producing countries so that "... the harvesting of tropical hardwood forests will be based on intensified felling rather than extraction of a few selected species..." (Erfurth and Kyrklund, 1976).

In this context, special mention should be made of the work that has been undertaken by the Building Research Establishment, Princes Risborough Laboratory (U.K.). In a number of articles Brazier (1971, 1975, 1973, 1980) has been advocating the selection of wood for a specific job, and Webster (1978) devised detailed tables where specific species are assessed on the basis of their suitability for specific end-use segments. What is important is that this last work overcame the limitation of Erfurth's work where no reference to end-use segments was made. Therefore the two works should be used as complementary when an importer is thinking of investing in any lesser-known (used) specie.

What is missing from all the above is any guidance on actually implementing such market developments. The approach is technical rather than marketing. Marketing as a concept is confused with the future developments in the supply/demand situation of the international market. The above works provide guidelines to the people involved in the timber trade about the future but do not give any indications how to overcome the fundamental problem of acceptance by the end-users.

3.5.4. J.T. Wassink

A long detailed examination of the problems associated with lesser-known species has been undertaken by J.R. Wassink in the Royal Tropical Institute of Amsterdam. The study started in 1966 and was designed to answer two basic questions:

a) which species, from the multitude of possibilities, are the most likely substitutes, when the currently merchantable species will go out of the market, and

b) is it possible to enlarge the group of species sold in the (European) market, in order to lower the operation expenses in the forest.

A report on the progress of the research appeared in 1969, where brief information about the experience gained was given. The different aspects that were identified are:

(a) Why is a particular specie a success in the market. The reasons mentioned were: fashion, resemblance to an established specie in "looks" and properties, good properties for a particular job, price competitiveness and ample supply,

(b) The influence that information about the results of mechanical-technical testing have on the sales volume. Species from Surinam were examined and it was found that information on test results do not necessarily increase substantially the sales volume,

(c) The prerequisites which could possibly make a new timber successful. The reasons given were: good properties for one specific purpose, abundance in the forests, location in the forests, price, freights and, for sawn timber, the work done prior to shipping.

(d) How should a consumer be approached. By consumer was meant end-users and the favourable circumstances mentioned

were: scarcity of present basic material, price of present material is getting very high, the quality of the present material is deteriorating and supplying conditions become unstable or difficult,

(e) A strategy proposal, based on collection of information, provision of sufficient large samples for tests and vigorous promotion.

But the paper did not provide any indication about the relative importance of the different elements which were identified. It is true that different species are used by different end-use segments which in turn behave differently. But I believe that a certain degree of overall importance could have been indicated. Furthermore, tests of possible correlations between the variables could yield some indications of uniformity amongst end-users. In any case, all the above contributive factors/reasons were tested during my in-depth interviews and were found to stand true, and were therefore used in the design of the questionnaires.

As the research continued, a more extensive publication appeared in 1973. The problem of marketing lesser-known tropical hardwoods was examined from the point of view of the producing and consuming countries. The attitudes of consumers and producers were also examined. The most interesting part was a section on mechanisms that influence the tropical timber market. A mailing list was compiled of ninety firms and organisations across Europe who were interested in obtaining detailed information about new species. It was disappointing to find that only a few of those subscribers were operating firms, with the majority being research establishments. On a European basis, an analysis

of the size and nature of the firms interested was conducted and the conclusions were that very big firms and small to middle size firms were interested in new species in an attempt to grow, while middle size family firms showed little or no interest at all. It appeared that there was not much interest in a monopoly over a specific specie (except of some very limited interest for some species which could be sold in bulk). This final point has support from Stearns (1969). An examination of who decides on the choice of material for building purposes (in the Netherlands) provided evidence about differentiated advertising campaigns depending on the relative predominance of specifiers. Obviously these results could not be used in the U.K. market, but they do show the need for differentiated promotional strategies. Such strategies (the report states) should be based both on the nature of the end-use segment and the ultimate consumer of the finished product. A similar analysis was performed with the general public as the ultimate consumer (especially for furniture) and it was found that the criteria that should be considered are aesthetic, quality and price. Here Wassink argues strongly that it is not true what a lot of timber marketing people believe "... you can make the ultimate consumer take whatever you want him to take, if your advertising is good enough...". He says that there is a need for a range of timber to be on offer. If such a range is too narrow then there is an "escape" to other competitive material (i.e. plastic, metal etc.) but he does not provide any empirical evidence for the above arguments.

In a more recent paper, Wassink (1978) stated that a starting point must be "The preference of the buying nation

must be seriously considered ..." and he noted that there are areas of conflict between buyers and sellers such as short deliveries in contracted quality, and misunderstanding about the quality of timber demanded (which could be even more essential during promotion of lesser-known species), etc. He concluded that "The often heard statement that a low price is the first and utmost sales argument for timber is not true", and based on this premise he produced an analysis of the choice patterns for tropical timbers imported in Seven European countries (including the U.K. (Wassink, 1979-a-)). The rationale was that once the various physical and technological properties of the well known/established species were analysed, then the results could be used as guidelines for future introductions. Such introductions should therefore be different for each European country. There is an obvious problem because this method examines/analyses consumption (imports) rather than demand, but this does not diminish its predictive values (the mechanics of the method are explained elsewhere in the text). The results of such an analysis are valuable usage pattern indicators, but do not guarantee acceptance. If the guidelines are followed the likelihood of success is increased but unless all the other marketing elements are taken into consideration no result can be pre-assumed.

More recently, Wassink presented a paper where he discussed the non-technical and non-economic aspects as choice criteria (Wassink, 1979-b-). This represents a major change of emphasis towards behavioural variables that affect (determine) choice of timber. He observes that, "Countries that started comparatively late with the importation of tropical timber in quantity, are less stable in their choice", which

is true if we examine the import patterns of countries like Greece, Spain, etc. He then applied behavioural variables on the findings of the analysis done by Erfurth and Rusche (1976-b-) in an attempt to explain preferences for colour, texture, etc. But the analysis was more of a historic-arbitrary nature. Nevertheless the conclusions were that man has a positive approach to timber, that timber species should give the impression of strength and that advertising should emphasise "warmth" and "cosiness". In a final compilation of all the above he published with Weselius (Wassink and Wiselius, 1979) a practical guide which could be used by both merchants and agents in their future search for lesser-known species.

Much of the work by Wassink provided the background on which this present research has been conducted. The various contributing factors mentioned above were utilised to provide guidance for the in-depth interviews. What is very important from the way that Wassink has developed his research is the gradual realisation that a closer examination of the behaviour of end-users and ultimate consumers is imperative in order to solve the problems associated with lesser-known species. What Wassink has done more than anyone else is to establish the problem in real life form and state the questions that have to be answered in a business like way.

The above are by no means an extensive overview of the available literature. They have been selected

a) because of their outstanding importance in realising the problem in question, and

b) in order to emphasise the reasons behind the need for research similar to the present one.

CHAPTER 4

THE MERCHANTS SURVEY

The design of the questionnaire to be used in this survey and the selection of the sample frame are explained. Then the findings related to lesser-known species are stated in a summarised form, and finally an extensive analysis of the whole questionnaire is presented.

4.1. STRUCTURING THE MERCHANTS SURVEY

4.1.1. The Aim

The aim of this survey was to:

- (1) build up a collection of case histories of past successful and unsuccessful introductions of lesser-known tropical hardwood species.
- (2) establish the marketing strategies that were used and analyse their effect on the eventual outcome of the introduction.
- (3) construct a general picture of merchants/importers attitudes, beliefs and perceptions about their role in the timber trade, their customers and the future developments of their trade.

4.1.2. The Sample Frame

4.1.2.1. Selection

The sample frame was drawn up by using a combination of two sources:

- (1) an ICC (Inter Company Comparisons) financial survey (1980). In this survey the major firms of the timber trade are analysed by means of their turnover, total assets, current liabilities, profits before tax and group relief and payments to directors.
- (2) the TTF (Timber Trade Federation) annual handbook (1980/81), which classifies the member firms under headings of Divisions (Importers, Agents, International, Merchants, Sawmillers), Sections (Hardwood, Softwood, Panel products, etc.), Area (Bristol, London, North West, etc.)

4.1.2.2. The Process

Table 2.1/6 shows that there is a large number of timber merchants who overall represent a very small percentage of the total trade turnover, while the firms with a turnover of over £4M represent a 95.7% of the total industry turnover and only a 22% of the total number of firms which are included in the ICC survey. Those firms were then checked against the TTF handbook so that agents and importers of non-hardwood products were excluded; this left 100 firms which were possible introducers of lesser-known tropical hardwood species. Now, since the sample was considered to be small, it was decided that in order to increase the likelihood of replies it would be better to address the questionnaires personally to the hardwood manager of each firm of the sample. Therefore addresses and telephone numbers for each firm were gathered (TTF, 1980) and through the phone the names of the hardwood managers were collected.

All the above procedures were considered essential, because by combining the two data sources the possibility of missing out a potentially 'useful' firm was eliminated, and by getting individual names the speed of replies and accuracy about the right person answering the questionnaire were increased.

4.1.2.3. Limitations

The main problems by using those two sources were that

(a) there was no indication about the importance of the hardwood department to the operations of each firm,

(b) it was impossible to assess the percent of total turnover which was due to sales of Tropical Hardwoods.

And although the importance of hardwoods was, at least partially, solved through a question about comparative ratings of departments,^{*1} the second of the above problems was not possible to be overcome.

4.1.3. The Questionnaire

4.1.3.1. The Questionnaire Design Process

Originally, in depth interviews were conducted with five managers involved actively in the timber trade and having experience with lesser-known hardwoods. These were unstructured interviews where the respondents were free to express their opinions about their past experience. From those interviews a first draft of the questionnaire was drawn, consisting of four sections:

- (A) general information about the nature and structure of the respondents' firms,
- (B) specific questions about individual lesser-known species with which the respondents had some experience,
- (C) for those who did not introduce any lesser-known species, some questions about possible inducing factors that might persuade them to do so in the near future, and
- (D) very general attitudes and views about the timber trade in general.

Once the first draft was ready it was piloted on nine different firms of which three were amongst the original ones (those used to structure the questionnaire) while the other

*1 Section A - question 1.

six had no previous experience of the questionnaire. Again, the respondents were personally interviewed on a semi-structured basis and a number of points emerged of which the most important was that section C was regarded as too vague to be answered (although those of the respondents who did answer it found no major problems). A number of other minor problems about lay-out and questions that could not be answered accurately were detected. Taking those points into consideration, a second draft was drawn and piloted on only three respondents (entirely new ones). Very minor objections were raised, and finally a final, third draft, was drawn. This is the one that eventually was posted to the sample already prepared.

4.1.3.2. Structure

There are three sections in the merchants/importers questionnaire, an opening letter and an order form (of the results of the survey) together with an open-ended question, and a reply-paid envelope. Copies of the questionnaire are attached, Appendix 4.1/1.

- I- Opening letter: since, as I mentioned above, the names of the respective hardwood managers were obtained, the questionnaire and the opening letter were addressed individually. The purpose of this letter was to explain the aim of the survey to the recipients, the importance of their contribution and assure them of confidentiality.
- II- Section A: consists mainly of questions of a general nature about the activities of the respondents' firm; the purpose of such a section was: (a) to provide a

"smooth passage" into the more involved parts of the questionnaire and familiarise the respondents with the layout and way of reply; (b) to get a broad view of the importance that hardwoods play in the operations of the respondents' firms, as well as some indication about the nature of the main hardwood stocked (i.e. if the firm is specialised on particular lines or not etc.) and (c) to create a link with the other sections, something of a filter section.

-III- Section B: this is designed only for those respondents who had some experience in promoting lesser-known species during the last five years. The time element (the limit of five years) was felt to be important for two main reasons:

- (a) by going further back into time it would have made it doubtful whether the information provided would have been accurate enough to give reliable conclusions;
- (b) if it was left entirely to the respondents there was danger that the species which are now well established (e.g. Lauan, Meranti, Ramin, etc.) would have been used and there would have been a certain element of bias to the answers since such species found very little resistance by the end-users when they were introduced. The section is designed so that replies are related individually to different species rather than generalising about a number of species.

-IV- Section C: again it concerns all respondents and involves a number of attitude-opinion questions about the trade in general.

-V. Closing page: an open-ended question was asked about the respondents' feelings about lesser-known species. The completion of this question was left to the discretion of the respondents, in case they felt like adding something more. Finally, an order slip was provided at the end of the questionnaire for those who wanted to have the results of the questionnaire. It was felt that it was the only inducing strategy open to such a research in order to attempt to increase the rate of response.

4.1.3.3. The Format.

The merchants/importers questionnaire comprises of a series of checklists, ranking and scaling questions.

-I. Ranking: it became obvious from the first pilot that in a number of questions respondents tend to tick all (or at least most) of the answers open to them which created problems. Therefore it was decided to ask respondents to rank the alternative answers according to the importance to their operations or the intensity of efforts put into them, etc. Furthermore, since there is always a limitation of the number of rankings that most people can be expected to carry out, the first three most important alternatives were asked to be placed in order (1 for the most important, etc.). But we must always have in mind that ranking tells us nothing about the differences between ranks, that is, it is a device of establishing an order or sequence but the size of the rank intervals (i.e. between one and two in comparison to between two and three) is unknown and it's very

unlikely to be equal (Oppenheim, 1966).

-II. Rating: this technique has been used in two distinct ways,

(a) in Section B as an objective assessment of various physical and marketing elements (Q.12 viii).

(b) as an attitude scaling method in Section C (Q.14 to 30).

In both cases a five point scale has been used. But the usefulness of each is entirely different. In Q.12 viii it's been merely used as a means of absolute objective assessment and comparison between two precisely defined hardwood species. While in Q.14 to 30 as a means of formulating an attitude scale. The scale chosen was Likert's summated ranking one. This asks respondents to indicate whether they agree strongly-slightly or are uncertain or disagree slightly-strongly, and then by assigning values of 5 to 1 or 1 to 5 (depending on the phasing of the question, whether it is positive or negative) it derives an individual total score which in turn can be compared against max. or min. possible scores and get those with extreme views. Although this scale suffers from the inherent problem of not being an interval scale and could not provide conclusions about the meaning of distances between scale position it is still a reliable technique for this particular survey since Q.14 to 30 are not designed to be interpreted as a unity (that is to provide a favourable or not favourable overall attitude of an individual to a specific problem). The objective is to compile a cumulative attitude for each statement and use it in marketing implications

rather than a cumulative attitude measure over a whole number of questions. Therefore the Likert's scale is a reliable technique of placing people in relative positions on a dimension.

4.1.4. Posting of the Questionnaire.

4.1.4.1. First post:

The questionnaires were first posted to all the 100 firms of the sample on the 11th of March 1981. Of those I received 42 replies of which 3 firms did not complete any section of the questionnaire because they did not deal in Tropical Hardwoods at all, leaving 39 replies which could be analysed.

4.1.4.2. Reminders:

To the 58 firms which did not reply, reminders were posted on the 24th April 1981 with the result that 10 more replied were received. Of those 2 said that they did not have any experience with Tropical Hardwoods and therefore did not complete any section of the questionnaire, the remaining 8 were subsequently analysed.

4.1.4.3. Closing date: The closing date of accepting replies was set on the 1st June 1981. The date proved satisfactory because no more replies have been received since then.

4.1.5. The response rate.

There was an initial sample of 100 firms, of those 52 replies were received. Subsequently 5 of those were

excluded because they did not deal in Tropical Hardwoods, leaving 47 replies which were analysed. It is believed that the major importers of Tropical Hardwoods have replied and that the non-respondents are those firms with little or no interest in Tropical Hardwoods. From those 47 replies, there were 23 which included at least one lesser-known specie analysed, leaving the remaining 24 having completed only the general parts of the questionnaire. The replies which included a lesser-known specie mentioned 40 different such species, 18 were classified as successes, 19 as failures, 7 as too early to decide and 9 species were not analysed at all (the apparent discrepancy between the individual and the overall totals is due to the fact that some species have been mentioned by different respondents at the same time).

4.2. MERCHANTS' SURVEY ANALYSIS

As has already been stated in the introduction to this paper, there are a number of points which are considered in a very simplistic form. However, constraints of available resources and time did not allow a more in depth examination. The replies are accepted as being unbiased and their validity is not disputed, but I must draw attention to the particular point that all the replies came from Managers and/or Directors of Hardwood Departments. This provides a degree of validity to the replies but there might also be a degree of "exaggeration" in the replies provided. That is, the importance of their Department, or Hardwoods in general might be overestimated. Even further questions about the future of the Hardwood Trade might not be viewed objectively. Therefore, since the replies have not been adjusted to take into account such factors, the results of certain questions must be viewed in a rather more critical manner and the reader should not be carried away with over optimistic conclusions or indications.

(There are some discrepancies between the individual and overall totals because some of the respondents have not answered all the parts of the questionnaire.)

4.2.1. Findings from the analysis of the Merchants' Survey.

1. The number of introductions of lesser-known species has been declining during the past five years. (4.2.3.2.)
2. The firms which are more likely to promote a lesser-known specie are those which satisfy at least one of the following criteria:

(i) Tropical Hardwoods represent the major part of the firm's activities. Once Tropical Hardwoods are ranked lower than third in overall importance to the firm, then the relation is reversed,

(ii) The policy of the firm is to stock as wide a range of species as possible,

(iii) Those firms which predominantly stock species from South-East Asia and/or South America and show a strong degree of confidence in their future supplies, correlate positively to promotions of lesser-known species. (4.2.2.2)

3. Before investing in any lesser-known specie, certain information must be collected. The most important information is that of the physical-mechanical properties of the specie, closely followed by the information about the technological-processing characteristics of the specie and then information about the occurrence of the specie in the Tropical Forests. (4.2.3.1.-ii)

4. Reasons for introducing a lesser-known specie:

(i) Those which were overall correlated with SUCCESS were, suitability for a specific job as the main one and to a lesser extent price advantage over material with similar properties. What was clear from the analysis was that price advantage is always a contributing factor but never the main reason for a successful introduction. On the contrary every introduction which was based solely on a price advantage basis failed. A combination of job suitability and price competitiveness is the reason which provides the highest probability of a successful introduction.

(ii) The main reason for FAILURES was found to be attempts to fill a gap in the market needs, also substitutes for a fading old favourites correlated positively with failures. Finally, as stated above, when price was the sole reason for an introduction the specie proved to be a failure. (4.2.3.2.-iv)

5. The first consignment: Certain prerequisites will increase the likelihood of the lesser-known species being accepted by the market,

(i) When the specie is 'found' by the firm's own research unit and it is not the result of outside sources of information,

(ii) A visit to the place of production is absolutely essential in order to provide sufficient information about the specie, (4.2.3.2-I-d)

(iii) It is preferable if the specie is imported into the U.K. in the form of logs,

(iv) If it is imported as lumber, then the first consignment should be of about 50m³, covering the whole range of sizes at the best possible quality of the material,

(v) If the first parcel is not sold within 6 months, from the time that the promotion of the specie starts, then there is very little chance that the specie will be accepted by the market.

6. Promotional activities: It is absolutely necessary to support any such introductions with promotional activities which are entirely separate from the everyday ones. The most successful of the activities which were tested here, was a combination of educating the target market

and the sales force activities around the "new" specie. The most frequently employed activity was found to be education of the customers, but without support from other parallel promotional activities the results were not satisfactory. Therefore, a single effort promotional strategy will not be sufficient, a combination of activities will produce the best results. Nevertheless, certain promotional activities related to the reasons for introduction of the specie and the results of the analysis were - if the main reason behind the introduction is to be a substitute for a fading old favourite, then intensification of the sales force produces the best results,

- if the main reason is the suitability of the specie for a specific job, then education of customers has been found to be more appropriate, while price advantage correlated negatively,
- with ample occurrence in the Tropics as the main reason for introduction all the tested promotional activities correlate positively,
- if the main reason is to fill a gap in the market needs, then sales force intensification will be the best activity to be used,
- when the specie is considered as a good opportunity, then none of the promotional activities which were tested produces any

positive results, all correlate negatively with this reason,

- reasons of price advantage over other species and reliability of the source of supply did not produce any clear indications of appropriate promotional activities,
- finally, the reasons of reasonable freights and fashion did not receive sufficient number of replies to enable me to draw any meaningful associations.

Therefore there are three major points: one, that unless there is some promotional effort to support the lesser-known specie it will fail to be accepted by the market, two that a combination of promotional activities should be employed and three that price inducements are a contributive promotional activity but should never be the main one. (4.2.3.2.-vi)

7. There is considerable difference of opinion about the eventual outcome of certain introductions of lesser-known species. The same specie is classified differently by different respondents, the deciding factor has been found to be the end-use segment to which the specie was aimed. Therefore, the choice of the target market becomes a very important strategic factor which could determine the eventual outcome. (4.2.3.2.-I)
8. Trial parcels, either at usual or reduced price, do not increase the likelihood of success. (4.2.3.2.-vii)

Merchants' Survey Analysis

4.2.2. The Respondents.

Section A of the questionnaire was designed to provide some information about the nature of the operations of the respondents and the structure of their organisations. Also an attempt was made to establish whether there are any factors which induce firms to promote a lesser-known specie. The analysis provided the following results:

4.2.2.1. Species stocked and supplying areas: Through a series of interrelated questions (2,3,4,5,6,7 and 8) certain aspects of the current stockholdings and the future supply expectations of the respondents were established.

-I- Optimum number of species stocked: It was found that there is some relationship between the importance of tropical Hardwoods to the firm's operations and the respondents opinion about whether there are any species that every merchant should stock.

Table 4.2/1. Importance of TRHD* and the need to stock certain essential species.

<u>Are there any essential species</u>	<u>All</u>	<u>Importance of Tropical Hardwood to the overall operations</u>					
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>	<u>Fifth</u>	<u>No answers</u>
Yes	29	15	5	7	1	1	-
No	17	9	2	-	3	3	-
No answers	1	-	-	-	-	1	-
All (No. of firms)	47	24	7	7	4	5	-

* The respondents were asked to rank Tropical Hardwoods (TRHD) in order of importance to the operation to their firm. This is termed here as Importance of TRHD

From Table 4.2/1 we have that, when the importance is high (first and/or second) there is a tendency to believe in the essentiality of some species, the reason is believed to be that many end-users (therefore customers) like to buy a wide variety of species in one order and therefore all the more "popular" species must be stocked. What is very interesting is that in the medium importance bracket (third), all firms believe in such a policy and the reason is that such firms tend to stock mainly those species that have a very high demand in the U.K. trade. Finally, in the low importance bracket there is little belief in such a policy because such firms deal only with limited customers or local markets or very specialised end-users and therefore stock a very small number of species to serve their particular customers. Because it was difficult to correlate the various levels of stock with the importance of Tropical Hardwoods and the optimum number of species that different size firms should stock, separate questions were included (Questions 2 and 5). Table 4.2/2. shows that most of the respondents believed that

Table 4.2/2. Importance of TRHD and stock levels.

Stock levels (No. of firms)	All	Importance of TRHD to the overall operation					
		First	Second	Third	Fourth	Fifth	No answer
More than optimum	6	4	2	-	-	-	-
Optimum	23	13	1	3	4	2	-
Less than optimum	14	4	4	3	2	1	-
No answer	4	-	-	1	2	1	-
All	47	21	7	7	8	4	-

they had achieved an optimum balance. What is interesting is that most of the firms for whom Tropical Hardwoods were

the major trading area believed to have an optimum number of species in their stock. Taking the analysis a step further, Table 4.2/3 by summing the individual replies and dividing by the number of species in each group of replies an average number of species stocked was obtained. It is apparent that the more important that Tropical Hardwoods are the greater is

Table 4.2/3. Importance of TRHD and optimum Stock Levels
(No. of Species)

Stock Levels (Average No. of Species)	All	Importance of TRHD to the overall operation					
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>	<u>Fifth</u>	<u>No answers</u>
More than optimum	32	33 ^{a/}	28	-	-	-	-
Optimum	11	15	12	9	7	4	-
Less than optimum	7	11	8	7	4	3	-
No answers	-	-	-	-	-	-	-
All	12	18	14	8	6	4	-

a/ Average number of species stocked by all the firms in the corresponding position.

the number of species stocked. If we allow for some special trading conditions we can say that an optimum number of species for some firms might be close to the findings of Table 4.2/3, that is 15 species if Tropical Hardwoods is the major trading area, 12 species if they come second, 9 species if they come third in importance, 7 species when of third importance and finally, 4 species when Tropical Hardwoods are of minor importance to the firm. These figures cannot be followed for all cases but should stand true for firms which do not specialise but have a fair spread of customers.

-II. Species essential to all merchants: On the question of whether there are any species that every merchant should stock (question 7-a-b-), we see from Table 4.2/1 that most of the respondents replied Yes. From the analysis of those positive replies it was notable that Brazilian Mahogany was regarded as the predominantly essential specie (Appendix 4.2/1.). The analysis showed that Brazilian Mahogany was the only specie from South America that was mentioned, there were four (4) species from West Africa (Iroko, African Mahogany, Sapele, Utile) but none of them had an overwhelming majority and finally, there were five species from South-East Asia and the Pacific (Ramin, Keruing, Teak, Lauan, Meranti) and of these only Lauan enjoyed any concensus about its importance. Therefore, Brazilian Mahogany and Lauan are the only two species which are regarded as essential to any stock, it is interesting to note that these two are the species of which imports have been increasing during the past five years.

Further analysis of the responses was performed to establish whether there was any bias towards those species that were actually stocked in some quantities by the respondents. It became obvious that there was a considerable bias for individual respondents to regard the species in their OWN stock as essential for ALL merchants. Finally, there were 14 cases that a specie though mentioned as essential to every merchant was not stocked by the particular respondent, while on the other hand there were 52 cases where a specie was stocked but was not thought as essential. This latter point proves the changing nature of stockholdings.

-III. Supplying areas: Two different aspects were examined,

(a) current supplies: It was found that West Africa is still supplying the greatest variety (6) of species that are stocked on a regular basis, South-East Asia provides 4 species and then come South America and the Pacific with two species each (Appendix 4.2/2). We have to take into account the fact that South-East Asia and the Pacific both group several species under one name and therefore it is thought in reality those areas provide a far larger number of species. There is an obvious problem developing in South America where three factors must be recognised:

(i) only two species from South America are widely traded,

(ii) there is a great diversification of species growing in those forests,

(iii) there is a common belief that the future of Tropical Hardwood supplies will come from that area.

Therefore, all the above factors will have to be reconciled and answers will have to be found in order to utilise more resources from that particular area.

(b) future supplies: For the future sources of Tropical Hardwoods, it was not surprising to find that South America was by far ahead of South-East Asia with the rest of the Tropical Areas coming far down the list.

4.2.2.2. Likelihood of a firm promoting a lesser-known specie: There was a limited effort to establish some of the factors which are related to the very nature/structure of the firm and which have either a positive or a negative influence on the decision to promote a lesser-known specie.

-I- The current importance of Tropical Hardwoods: It became obvious that the more important Tropical Hardwoods are to the overall operations of the firm the more likely it is to attempt an introduction of a lesser-known specie.

Table 4.2/4. Importance of TRHD and introduction of Lesser-known Species.

<u>Introduction of a Lesser-known Specie</u>	<u>All</u>	<u>Importance of TRHD to the overall operation</u>					
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>	<u>Fifth</u>	<u>No answers</u>
Yes	23	12	6	4	1	-	-
No	24	12	1	3	3	5	-
No Answers	-	-	-	-	-	-	-
All (no. of firms)	47	24	7	7	4	5	-

From Table 4.2/4 we see that once the importance of Tropical Hardwoods to the overall operation of a merchant declines below the second place, the likelihood is reversed.

-II- The species stocked: It was found that two factors related to species in stock had some influence, (a) the number of species stocked: It was expected that the actual level of a firm's stock compared to the desirable level would correlate with attempts to promote lesser-known species; as we see, Table 4.2/5, there was a positive ratio of 5:1 for the

Table 4.2/5. Stock Levels and Introductions of Lesser-known species.

<u>Introduction of a lesser-known specie</u>	<u>All</u>	<u>S t o c k L e v e l s</u>			<u>No Answers</u>
		<u>More than Optimum</u>	<u>Optimum</u>	<u>Less than Optimum</u>	
Yes	23	5	8	7	3
No	24	1	15	7	1
No answer	-	-	-	-	-
All (no. of firms)	47	6	23	14	4

firms who stock more than the optimum number of species, there was a negative ratio of 15:7 for those at an optimum stock level and finally, there was no difference (ratio 7:7) for the firms with less than optimum number of species stocked.

If we combine the above findings with the already known finding that those firms with more than optimum stock levels are those for whom Tropical Hardwoods play the major role, it becomes obvious that such firms (i.e. those trading mainly in Tropical Hardwoods) are the more aggressive ones, they are not concerned with building up a stock of high-demand species but on the contrary they attempt to explore the Tropical resources and to fit them to the U.K. market needs/requirements. When a firm believes that it has achieved an optimum stock level it becomes more conservative and concentrates on those species which it already stocks. Finally, for those firms that stock less than optimum number of species there seems to be an equal number of them that attempt to expand their stock levels by introducing lesser-known species with those that look at established species to provide them with a wider stock.

(b) the origin of the species stocked: By analysing the totals of the rankings for each supplying area, it was found, Table 4.2/6, that for South America and South-East Asia there was no correlation between their high total rank as future sources of supply and expected introductions of lesser-known species, while for the Pacific there was a slight correlation. What is interesting is that for West Africa and the Pacific the largest part of their importance for future supplies comes from those respondents that have already introduced at least one lesser-known specie, while for South-

firms who stock more than the optimum number of species, there was a negative ratio of 15:7 for those at an optimum stock level and finally, there was no difference (ratio 7:7) for the firms with less than optimum number of species stocked.

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Table 4.2/6: Future tropical supplying areas and Introduction of Lesser-known Species

<u>Future importance as a supplying Area</u>	<u>Introduction</u>			
	<u>All</u>	<u>Yes</u>	<u>No</u>	<u>No Answer</u>
West Africa	48	29	19	-
Africa Elsewhere	8	2	6	-
Pacific	53	34	19	-
S.E. Asia	115	54	61	-
S. America	139	64	75	-
No answer	-	-	-	-
All	363	183	180	-

(total rankings. No answer rank = \emptyset)

East Asia and South America (although these two areas show much higher overall totals) the reverse applies. I believe that this is the result of a more intensive search for lesser-known species in West Africa and the Pacific than in the other areas during the past ten years. We have seen that there is a changing emphasis towards South America, but shipping problems and higher risks than elsewhere deter firms from attempting to promote species from this area.

If we now put together the findings about,

(i) the areas that the stocks come from,

(ii) the areas of future importance, and

(iii) whether firms have introduced any lesser-known species, we find that those respondents whose stock comprises mainly of South-East Asian and South American species believe strongly that their future supplies will come from the same areas. This holds true both for those who had introduced a lesser-known specie and those who did not. On the other hand, the respondents who specialise in West African species

show a greater degree of uncertainty. There are equal numbers who have faith in West Africa as a future supplier and who have not. Finally, there is an overall belief that the Pacific will provide more species in the future although at the present species from this area do not constitute any large amounts of stockholdings.

4.2.3. Past introductions of lesser-known species

In section B of the questionnaire, details about past introductions were gathered, and the analysis produced the following results.

4.2.3.1. Overall species mentioned: The respondents were provided with enough space to analyse three different species, but there was no limit on how many species they could just mention as having been introduced by their firm. Therefore we have the situation where there were more species mentioned than were analysed. It is very important to bear in mind that the analysis is based on the species mentioned and analysed by the respondents. It is assumed that such species are mentioned because of greater familiarity with them by the respondents and that the replies were a fair reflection of the respondents' experience.

-I- Classification of the outcome of the specie introductions: Here I must say that no definitions were given to the respondents of what constitutes either a successful introduction or a failure. It was felt that any such definitions would only confuse the issue and it was left to the respondents themselves to classify the outcomes of their introductions according to their own criteria.

From the 40 different species mentioned, there were 14 successes, 15 failures, 7 were regarded as too recent introductions to decide, and 9 were not analysed at all (Appendix 4.2/3). The most frequently mentioned species were: Taun by 7 different respondents, Callophylum by 4 respondents, Balau - Tatajuba - Laun by 3 respondents and the rest of the species were mentioned either by two or only one respondent. Two important factors were established:

(a) There was considerable difference of opinion on the classification of the most frequently mentioned species. For Taun and Tatajuba there were respondents who classified them as successes, others as failures and others as too recent introductions to decide. A further analysis of the respondents who mentioned the above species proved that there was no correlation between them, a further analysis of the dates of introduction proved fruitless. The same uncertainty occurred in specie like Callophylum.

On the other hand, Lauan and Brazilian Mahogany were classified as successes by all the respondents who analysed them. It is my opinion that the observed uncertainty is closely associated with species which do not possess overall superior physical properties but are well suited to specific uses. Therefore, the classification is done on the basis of the end-use segment that the specie was introduced to (i.e. when it was introduced to the appropriate segment the result was success etc.).

(b) It was interesting to see the number of merchants/importers who regarded themselves as first promoters of the same specie (e.g. there were 7 respondents who mentioned Taun as being introduced by their firm). This is a clear illustration of the uncertainty that exists, the lack of

communication and information between the merchants. The last point is best illustrated by the fact that species like Lauan, Brazilian Mahogany, Koto, etc. were regarded as lesser-known species, while such species have been imported into the U.K. for period of time.

Such factors as the above mentioned ones can only be detrimental to any promotional efforts by an individual firm:

(i) if more information about such attempts will be readily available (here, the TTF could play an active role) then many of the potentially unsuccessful attempts could be avoided in the light of past experience,

(ii) the past history will provide information about the mistakes and problems associated with particular lesser-known species and such mistakes will not be repeated,

(iii) when a number of firms, without knowledge of each others activities, promote the same lesser-known specie it can only lead to a lower quality of initial consignments at a time when such trial parcels should be of good quality.

-II- Overall information before investment: On the question of the desirable information that the merchants/importers would like to have before investing in any lesser-known specie, it was found there was no preference between the three areas of information. If we had to make some distinction, from Table 4.2/7, we can say that information on physical-mechanical properties and technological-processing characteristics were regarded as slightly more important (preferred) than information about the occurrence of the specie in the tropics. Therefore, it will be safer to conclude that all three areas should be examined equally before any decision about investment is taken.

Table 4.2/7. Information Preference before
Investing

<u>Type of information</u>	<u>Total Ranks</u>	<u>R a n k s</u>			
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>No answer</u>
Occurrence in the Tropics	35	6	3	11	3
Physical & mechanical properties	43	7	9	4	3
Technological & processing character	42	7	8	5	3
No answer	-	-	-	-	-
Total Ranks	120	20	20	20	9

(the figures represent the number of respondents who ranked the information type as first, second or third in importance; the totals are calculated by assigning values of 3-2-1 to the respective importance. No answer are assigned value of ϕ .)

4.2.3.2. Results of the species analysed: These are the results of the analysis performed on the replies which included at least one lesser-known specie.

-I. Factual data: There were two questions which dealt with factual aspects of the introduced species (questions 12i and 12xi). The analysis showed:

(a) Dates of introductions: there is a gradual decline in the number of species introduced, Table 4.2/8, this could be because:

- i. past failures and the present pattern of trade deter further introductions,
- ii. the respondents were more familiar with species which had been stocked by their firm for some time rather than those species which had just been stocked.

Table 4.2/8. Dates of introduction of the analysed lesser-known species and the eventual outcome.

<u>Year of introduction</u>	<u>Totals</u>	<u>O u t c o m e s</u>		
		<u>Success</u>	<u>Failure</u>	<u>Too early</u>
1976	13	7	6	-
1977	6	2	2	2
1978	11	5	4	2
1979	9	2	5	2
1980 & later	5	2	2	1
Totals	44	18	19	7

(no. of species analysed)

One interesting point is that even for species which were introduced back in 1977, there is still uncertainty about their outcome.

(b) Areas of origin: By examining the supplying areas of the analysed lesser-known species we see, from Table 4.2/9

Table 4.2/9. Origin of the Lesser-known species which were mentioned and the eventual outcome

<u>Area of origin</u>	<u>Totals</u>	<u>O u t c o m e s</u>		
		<u>Success</u>	<u>Failures</u>	<u>too early & not analysed</u>
West Africa	5	4	1	-
South-East Asia	19	5	5	9
South America	12	3	6	3
Pacific	4	1	3	-
Totals	40	13	15	12

(No. of species mentioned, duplication is taken into consideration. The totals represent the number of different species; further discrepancies between totals is due to the fact that the same species have been classified differently by different respondents.)

that the majority came from South-East Asia (17), with South America next and West Africa together with the Pacific at the bottom of the list. It is interesting to see that only West Africa shows a positive ratio (of 4:1), while South America (where the future supplies are believed to come from) shows a negative ratio of 6:3, this is a warning sign that there are major problems to come in the future, South-East Asia shows a 5:5 ratio and the Pacific a negative ratio of 3:1.

(c) The material: (i) form of introduction: we can see from Table 4.2/10, that 36 out of the 40 species were introduced as lumber and only 4 as logs. But the introductions

Table 4.2/10. Form of introduction of the analysed lesser-known species and the eventual outcome.

Form of introduction	All	O u t c o m e s			
		Success	Failure	Too early	No answer
Lumber	36	13	17	6	-
Logs	4	3	1	-	-
No answer	4	2	1	1	-
All	44	18	19	7	-

(No. of species analysed)

as logs show a greater rate of successes than the introductions as lumber. There are a number of possible reasons for such a different success rate,

- there is relatively lower cost involved with logs than lumber,
- there must be a higher degree of confidence associated with log introductions, since the original consignments are usually greater than for lumber.
- the importing firm has greater 'flexibility' in processing the raw material when it is in the form of logs,

- in many cases of lumber imports, the work done before the material was shipped can vary tremendously, that is the first parcel can be acceptable while the following ones could be full of problems; when part of this responsibility is in the hands of the U.K. merchants, such problems can be eliminated.

(ii) way the material was sold: it was found, not unexpected, that all the introductions were sold ex-stock. Such lesser-known species are usually sold in rather small quantities at the beginning and as customers become familiar with them forward contracts can be arranged (if the specie proves to be a success). Now, from Table 4.2/11, by examining the time period that passed before the first consignment was sold and the eventual outcome of the introduction, we can

Table 4.2/11. Period before the first consignment of the lesser-known specie was sold and the eventual outcome.

<u>Period before the first parcel was sold.</u>	<u>All</u>	<u>O u t c o m e s</u>			
		<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
Less than 6 mth.	24	14	6	4	-
Between 6 and 12 months	8	1	6	1	-
Over 12 months	9	2	7	-	-
No answer	3	1	-	2	-
All	44	18	19	7	-

(No. of species analysed)

say that unless the stock is sold within the first 6 months of arrival (or beginning of the promotional efforts) the likelihood that it will prove a success is very low.

(d) The first consignment:

(i) quantity: we see, from Table 4.2/12, that the majority of the first consignments were between 21m³ and 50m³. Furthermore, it was the only positive ratio of success/failure among the various quantity ranges (but such a conclusion

Table 4.2/12. Quantity of the first consignment and the eventual outcome of the introduction.

<u>Quantity of the first parcel</u>	<u>All</u>	<u>O u t c o m e</u>			
		<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
Less than 10m ³	3	1	2	-	-
Between 11 and 20m ³	7	1	5	1	-
Between 21 and 50m ³	23	11	9	3	-
Between 51 and 100m ³	5	2	2	1	-
Over 101m ³	3	2	-	1	-
No answer	3	1	1	1	-
All	44	18	19	7	-

(No. of species analysed)

is a weak one because of the small number of observations). The only exception was the range over 101m³ which also showed a positive ratio of success/failure; a further analysis of the two species in this quantity range was performed and it was found that both these species were aimed at very specialised customers with a limited demand, it is my personal opinion that such introductions are the outcomes of lengthy prior discussions between the importers and the customers; it was also found that those species were both introduced by the same merchant/importer.

A quantity of the range of around 50m³ is regarded as necessary so as to include a fair-average indi-

cation of any future parcels, at the same time it provides sufficient quantity to promote the specie to a wider number of potential customers (users).

(ii) quality: all except two of the first consignments were either Sel and Bett or FAS/FAS 1 F, Table 4.2/13. The data does not seem to provide any strong

Table 4.2/13. Quality of the first consignment and the eventual outcome of the introduction.

<u>Quality of the first parcel</u>	<u>All</u>	<u>O u t c o m e</u>			
		<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
Select & Better	11	5	4	2	-
L M	1	1	-	-	-
FAS/FAS 1 F	24	10	11	3	-
Poor	1	-	-	1	-
No answer	7	2	4	1	-
All	44	18	19	7	-

(No. of species analysed)

indications about possible outcome correlation with particular qualities. As a generalisation we can say that the better the quality the higher the likelihood of the specie being a success, and that the quality of the following parcels will have to be of the same level as the quality of the first consignment.

(iii) sizes: it was found that success was positively correlated to a full range of sizes in stock. From Table 4.2/14. we see that most of the introductions were on the basis of either one size (10) or a full range of sizes (14) and of those two alternatives only a full range of sizes shows a positive success ratio (8:4). The reason

Table 4.2/14. Range of sizes stocked during the introduction of a lesser-known specie and the eventual outcome.

<u>Sizes stocked during the introduction</u>	<u>O u t c o m e</u>				
	<u>All</u>	<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
1 size only	10	2	7	1	-
2 sizes only	5	2	2	1	-
3 sizes only	5	2	2	1	-
Full size range	14	8	4	2	-
Dimension stock	4	2	1	1	-
No answers	6	2	3	1	-
All	44	18	19	7	-

(No. of species analysed)

behind such an outcome is that a full size range can meet the range of size demand by different end-use segments (that is, the completion of a job usually requires a certain range of lengths, thicknesses, etc.). Therefore, any promotion of lesser-known species should employ a full size range in order to satisfy the whole range of needs by the end-users and also to take advantage of any possible size shortages of other species which have similar properties and are well accepted by the trade.

(iv) moisture content: As we see from Table 4.2/15, the

Table 4.2/15. Moisture content of the first consignment of the Lesser-known specie and the eventual outcome.

<u>Moisture content of the first parcel</u>	<u>O u t c o m e</u>				
	<u>All</u>	<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
Air Dried	33	13	14	6	-
Kiln Dried	5	3	2	-	-
No Answers	6	2	3	1	-
All	44	18	19	7	-

(No. of species analysed)

majority of the lesser-known species have been imported into the U.K. as Air Dried material, but as it was found by analysing a question further into the questionnaire (question 12ix), all of the species were later processed at the U.K. premises of the importing firms.

An attempt was made to correlate quality, quantity, sizes and moisture content against the eventual outcomes, but it proved fruitless because of missing answers to parts of the questions.

(e) Property characteristics: The properties analysed were colour, density, grain and durability, these were chosen so as to be compatible to the conclusions drawn about the specie ideally suited to the U.K. market (see Pattern of the U.K. Tropical Hardwood Imports - Section 2.24). By examining the above four physical characteristics of the lesser-known species which were analysed by the respondents, it was found that

i. all light colour species which were promoted were all failures,

ii. failures had a higher percentage of low density species,

iii. failures had a higher percentage of interlocking and uneven grain,

iv. low durability species had a higher rate of failure,

v. brown-reddish colour species had a higher rate of success.

These findings (although not all possible properties were considered) tend to be in accordance to what was found to be the ideally suited specie to be introduced into the U.K. market.

-II- Sources and availability of information about lesser-known species: In any promotional effort associated with lesser-known species, the relationship and trust between the sources of information and the importing firm is very important. Therefore an analysis of the sources of information about such species that were eventually introduced into the U.K. market was performed. From Table 4.2/16 we

Table 4.2/16. Sources of information/visits and the eventual outcome of an introduction

Source of Information	All	Outcome/Visit						No answer
		S u c c e s s			F a i l u r e			
		No visit	Invi-tation	Own	No visit	Invi-tation	Own	
Approached by UK agent	15	3	-	3	7	2	-	-
Own re-search visit	11	3	-	5	1	-	2	2
Information from overseas markets	6	2	-	1	1	2	-	-
Approached by producing country	1	-	-	-	-	-	1	-
Literature	1	-	-	-	-	-	1	-
Visited by overseas buyer	2	-	-	1	-	-	1	-
Past experience	1	-	-	-	1	-	-	-
No answer	-	-	-	-	-	-	-	-
All	37	8	-	10	10	4	5	-

(No. of species analysed)

see that U.K. agents play the major intermediary role in the introduction of lesser-known species, then come the firms' own research unit, with information from overseas markets having some significance and the rest of the sources were of marginal importance.

A significant point from the above analysis was that when the introduction of a specie was the result of a recommendation by a U.K. timber agent and the importer did not visit the producing area to assess the potential of the specie then the likelihood was that the outcome would be failure. Such events, if they continue could seriously damage the mutual trust between these two members of the trade.

Another point is that, when the importer, through his own research unit learns about a specie then the likelihood is that if the specie is adopted it will most likely be a success (a positive ratio of 8:3).

If we combine the above observations, we have:

(i) a personal ^{visit} and inspection of the production is essential,

(ii) it is preferable to research the market by one's own unit than by relying on outside sources.

Only one specie was introduced as a result of an approach by the producing country. This could be the result of the existing structure of the U.K. timber trade (i.e. go through an agent), but it could be an illustration of lack of initiative/interest from the producing countries; the latter point is strengthened by the fact that only 4 importers had been invited to visit the producers and all the subsequent introductions of species proved to be failures. That is, importers have to bear all the efforts, promotions, risks, etc. on their own. I believe that unless the producers themselves or the supplying countries decide to actively be involved in such projects there is the danger that such attempts to promote lesser-known species will die out.

If we look now at the volume/quality of information that was available, either during the evaluation stages or during the actual promotional stages, we see (Table 4.2/17) that for

Table 4.2/17. Adequacy of information-visit and the eventual outcome of an introduction.

<u>Information</u>	<u>All</u>	<u>Visit/Outcome</u>				
		<u>Visit</u>		<u>No Visit</u>		<u>No answer</u>
		<u>Success</u>	<u>Failure</u>	<u>Success</u>	<u>Failure</u>	
Adequate	23	8	7	6	2	-
Inadequate	12	2	2	-	8	-
No answer	2	-	-	2	-	-
All	37	10	9	8	10	-

(No. of species analysed)

23 species compared to 12 the information available was regarded as being adequate for the importers needs. It appears that the amount of available information did not have any significant effect on the eventual outcome of the promotion. Here I would like to clarify the point that the questionnaire did not specify the nature of the information, it is widely accepted that there is a plethora of technical data on almost every specie, and such data is regularly published by establishments like the BRE and TRADA. But when it comes to information about forest resources (Sommer 1976, Lanly 1976), quality of work done at the place of production, etc., then unless there is a personal visit at the place of production it will be almost impossible to obtain a clear estimation of the situation.

Therefore, if we put together inadequate information-did not visit-failure we see that these three factors correlate (8 out of 12 species). The same holds true as an

overall observation: after visiting the tropics, 4 out of 19 replies regarded the obtained information as inadequate; while of those that did not visit, 8 out of 16 regarded the information as inadequate. Once again, a visit to the place of production is essential.

-III- End-use segments: By analysing the end-use segments by which the species were to be used, Table 4.2/18, we see that 21 were for joinery, 16 for the furniture and fitting

Table 4.2/18. The end-use segments that the lesser-known species were aimed at and the eventual outcome.

<u>End-use Segment</u>	<u>All</u>	<u>O u t c o m e s</u>			
		<u>Success</u>	<u>failure</u>	<u>Too early</u>	<u>No answer</u>
Window manuf. & D.G.	7	3	2	2	-
Construction	2	1	1	-	-
Flooring	1	1	-	-	-
Furniture and fittings	16	4	12	-	-
Joinery	21	8	8	5	-
Vehicle and transport	1	1	-	-	-
D.I.Y.	1	1	-	-	-
Utility	1	1	-	-	-
No answers	-	-	-	-	-
All	50	20	23	7	-

(No. of species analysed; the discrepancy with previous totals is due to the fact that some of the species were aimed at more than one end-use segment.)

segment, 7 for window manufacturers and double glazing, 2 for general construction and the rest for other smaller segments. From those, the furniture and fittings segment showed the higher rate of failures (a negative rate of 12:4). A further analysis of the individual species proved that the

same specie in some cases when introduced to different end-use segments had different outcomes. In one extreme case a specie was introduced by different merchants to the same end-use segment with opposite results, there were other cases where a specie was introduced by different merchants to different end-use segments with the same outcome.

Some of the reasons for such contradictory results could be:

- (a) in the case of an absolutely superior or inferior specie, the outcome is either success or failure respectively, this applies for all the end-use segments,
- (b) in special cases where the specie is suitable only for a rather narrow range of uses, then bad segmentation approach results in conflicting outcomes and in some cases it impedes any possible success because the species acquires a 'bad' name in the trade,
- (c) finally, there are cases where although the specie is suitable for an end-use segment the marketing strategy employed by the merchant is not the appropriate one, resulting in the rejection of the specie.

Turning to the customers to whom the lesser-known species were first introduced we see that the emphasis has been on selected customers who use materials with similar properties. There were three cases where the species were introduced to all the customers irrespectively and nevertheless proved to be successful. When these species were singled out it was found that they were Brazilian Mahogany and Lauan (mentioned twice). It was not surprising to see that such species with overall superior attributes were the only ones which could successfully be introduced in such a way.

-IV- Reasons of introduction: A different analysis was performed for the successful and for the unsuccessful introductions.

(a) SUCCESS: The analysis assigned values of 1 for the main reason of introduction and 0.5 for the contributing factors and a rating order was established (Appendix 4.2/4). The main reason was the one ranked 1 by the respondents and the contributing factors were the ones ranked as either 2 or 3.

We find that 'price advantage' together with 'suitability for a specific job' have the same overall rating, with 'substitution for a fading old favourite' third. If we look just at the main reasons, we find that 'suitability for a job' comes ahead of 'price advantage' with 'fill a gap in the market' third; finally, by adding main and contributing factors together we have that 'price advantage' comes first with 'suitability for a job' and 'substitute for a fading old favourite' equal second.

The conclusions are:

i. if the main reason for introducing a lesser-known specie is its high degree of suitability for a specific job then the likelihood of success is high; if at the same time there is a certain price advantage as well then the probability of success is maximum,

ii. at times when price and availability of an established specie become problematic, then the lesser-known specie should base its appeal on price advantage,

iii. reasons for introducing a lesser-known specie, like 'gap in the market needs', 'good opportunity', 'ample occurrence', 'fashion' and 'reasonable freights' should not be used as the basis for investment.

Reliability of the shipper should be taken into consideration, but if the consignments are all inspected and shipped under proper conditions, any possible problems associated with unreliable sources of supply can be overcome or eliminated entirely.

(b) FAILURE: The same principles were applied as with the successful introductions. It was found that, the most frequent reason associated with failures was attempts to 'fill a gap in the market needs', second was 'price advantage' and third was 'substitute for a fading old favourite'. These findings justify what has already been said, that is, introducing a lesser-known specie entirely on the basis of its price advantage is a recipe for failure.

In conclusion, any decision on introduction/promotion of such species should be based on more than one strong point in order to stand a chance of being successful. It therefore follows that any marketing plans will have to look into a number of factors and take advantage of specific superiorities rather than adopting an all out promotional strategy.

-V- Competition from other species:

(a) an overall comparison: At the time of introduction it was found that all replies stated that there was another specie with similar properties which was well established at the time of the introduction. From all the species that were mentioned as established ones (Appendix 4.2/5) it is interesting to note one specie in particular, Lauan. This specie was mentioned previously as a lesser-known one which was introduced during the last 5 years (see Appendix 4.2/3). There are two points worth mentioning, this contradiction could either be because the particular specie became a

problem in some respect since it was first introduced and therefore the importers/merchants started looking into possible alternatives, or that such lesser-known introductions are a matter of personal experience and perception by the people responsible for their promotion. The latter is a more possible answer, especially after we have seen the problems associated with lack of information and communications between the members of the trade. Therefore, different importers perceive species as being at different levels of their passage through the trade and their perception is shaped according to their past experience. If we take this point a step further, it is not surprising to see that 6 out of 9 species which were meant to compete for the same end-use markets as Lauan proved failures and only two proved successful. Ramin remains a great problem area when it comes to finding comparable species and finally African Mahogany has been successfully replaced only by Brazilian Mahogany. A final point is that there is an apparent effort to find alternatives mainly to West African species. Of the species which were introduced in order to replace West African species 11 were successful and 8 failures compared to those meant to replace species from South-East Asia where there were 7 successes and 13 failures.

(b) comparisons against species well established: Each lesser-known specie was compared against a specific established specie on a list of attributes. Unfortunately the list of comparisons was not as exhaustive as I would have liked, but nevertheless it provided some useful indications and to illustrate the need for a more comprehensive list that could

be drawn by individual firms. The various points to be compared can vary according to the preferences of the end-use segment that the particular specie is aimed at. For the present study the comparisons were on the aspects of price, supply conditions, work done before shipment (when sawn), job suitability, shipping and grading.

The analysis is based on a previous question about the reasons for introducing the species and weighted factors are derived which are based on the overall successful introductions rather than on the overall ratings. The reason is that the object of the exercise is to find the potentially successful species rather than deriving an overall score or establishing which are the potentially unsuccessful species (if the same process is followed for a considerable number of lesser-known species then averages can be drawn and comparisons will be possible on an overall score). The analysis (Appendix 4.2/6) indicated that all the successful introductions had a positive total score, while 5 of the 18 failures also had a positive score (the rest of the failures had a negative score, except one which scored 0).

It was decided to examine the 5 failures with a positive score and it was found that:

- i. 4 of them were intended to 'compete' with Lauan or Ramin. As we have seen above, attempts to compete with those two species in particular are ill-timed since both species enjoy reasonable supply and price conditions and are regarded by the end-users as very suitable to their production. By examining the dates of the introductions, it was found that these attempts did not take place at a time where there

was some variation in either price or availability. Which means that timing and forward planning is essential.

- ii. the last of the failures was introduced to compete with a very wide variety of species rather as suitable for a specific job. Such strategies cause problems in the minds of the end-users because their evaluation criteria are still based on a single specie rather than a group of species perception.

Concluding, we can say that a strong positive overall score will be an indication of a potentially successful specie (provided that the other elements, like marketing, quality, etc. are employed properly); a slightly positive score does not guarantee success (the comparisons must be absolutely objective). If I had to determine a cut-off point between success and failure, probably a +0.20 for the present list of comparisons will be useful. On the other hand, ANY negative score will most definitely mean failure.

The final analysis in this section was a frequency comparison of each attribute (Appendix 4.2/7). We see that price is not the dominant factor although a contributing one. The failures show an even greater degree of price advantage than the successes (16 to 13), but these species did not pass the test on an overall score

-VI- Promotional activities supporting the introductions:

It was surprising to find that the fact that a merchant has undertaken additional promotional efforts did not improve the likelihood of being successful. From Table 4.2/19, we see that an equal number of species were supported by additional promotions as there were species which did not, and promotional

Table 4.2/19. The effect of overall promotions to the eventual outcome of an introduction.

<u>Promotional activities</u>	<u>All</u>	<u>Outcome</u>		
		<u>Success</u>	<u>Failure</u>	<u>No answer</u>
Yes	19	14	5	-
No	17	4	13	-
No answer	1	-	1	-
All	37	18	19	-

(No. of species analysed)

activities appeared to correlate positively with success.

It was decided to analyse the promotional activities

(Appendix 4.2/8). It was found that education of customers was the only activity which was employed entirely on its own, all the others were employed as part of a more complex promotional effort.

Table 4.2/20. The promotion employed to support an introduction and its effect on the eventual outcome.

<u>Promotion employed</u>	<u>All</u>	<u>Outcome</u>			
		<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
Price inducements	13	4	6	3	-
Adverts. in Press	2	1	1	-	-
Educating customer	27	13	9	5	-
Sales force interest	13	8	4	1	-
Specification	1	1	-	-	-
Samples	1	-	1	-	-
No Promotion	19	4	13	2	-
No Answers	-	-	-	-	-
All	76	31	34	11	-

(No. of times that the particular promotional activity was mentioned either on its own or as part of a combination of such activities.)

Table 4.2/20 shows that education of customers has been the most frequently employed activity, either on its own or in combination with others, with price inducements and intensification of the sales force equal second. Looking at the outcomes associated with price inducements, we reaffirm the previously stated conclusion that price is not the major factor in the promotion of lesser-known species (of all the promotional activities price inducement is the only one with a negative outcome ratio, of 6:4). A further analysis was then performed on all the combinations of promotional activities employed (Appendix 4.2/8). It was found that the most frequently employed strategy was education of the customers (on its own) but that strategy gave a negative outcome ratio of 5:3. Then came a combination of price inducement with education of the customers and this strategy gave a positive ratio of 3:2. Third was a combination of educating customers with intensification of the sales force and this strategy proved the most successful one with a positive ratio of 6:0. Finally, the only other strategy used in any degree was the combination of price inducements with intensification of the sales force which produced a negative ratio of 3:1.

Let us now look at the promotional efforts together with how the individual attributes of the lesser-known specie compared to the established ones and the eventual outcome. I would like to draw attention to the observation that price inducements cannot overcome other deficiencies of the lesser-known species. Only in one case where the job suitability was at least equal to that of the established specie did lower price have a positive effect on the promotional efforts.

Turning to the combination of supply conditions and education of customers we see that this strategy produced some definite results (when the supply situation was better than the established species). The same applies for work done before shipment - job suitability - shipping conditions - grading and educating customers. While when the opposite happens, that/ ^{is} try to educate customers when the above mentioned factors are in effect inferior, then the outcome is rejection. Therefore, unless the promotional activities are backed by really superior material or at least equally suitable, then they cannot produce positive results.

On the same principles as educating customers, a sales force intensification together with price inducements will produce positive results. What becomes clear is that, when a new specie compares favourably to an established one then a combination of promotional efforts, based on the particular strong point(s), will have to be employed. A single activity strategy will not produce satisfactory results. This interdependence becomes more clear if we consider the species which were introduced without any promotional activities. The superior attributes of those species were not put forward to the end-users and the result was that the eventual outcomes were rather random events of luck and chance.

It was thought interesting to see whether the promotional activities followed closely the reasons for introducing the species. The analysis showed that:

- i. when the reason of introduction was substitution of an old favourite then sales force intensification strategy produces the best results,

- ii. when the reason was suitability for a specific job then educating customers had the best results while just price inducements produce negative results,
- iii. when the reason was to fill a gap in the market needs then the intensification of the sales force appeared preferable while no promotion at all produced negative results,
- iv. when the reason was a good opportunity all promotional activities proved unable to provide any positive results,
- v. with ample occurrence and reasonable freights all promotional activities appeared to be positively correlated, and
- vi. finally, for price advantage and reliable sources of supply, the answers appeared to be unclear and therefore no conclusions could be drawn.

But it must be made clear that the above refer to single activities and not to any combinations of such activities. Nevertheless, they provide useful guidelines.

Finally, an analysis of the promotional activities employed - the end-users introduced to - and the eventual outcome was performed. This revealed that no promotion at all for species aimed at the furniture and fitting segment leads to failure and also that for the same end-use segment a promotional strategy based exclusively on price advantage will fail.

-VII- Trial Parcels: It is obvious, from Table 4.2/21, that trial parcels do not increase the chances of acceptance and this was equally so for parcels at reduced price and at usual price. What is interesting to note is that of the

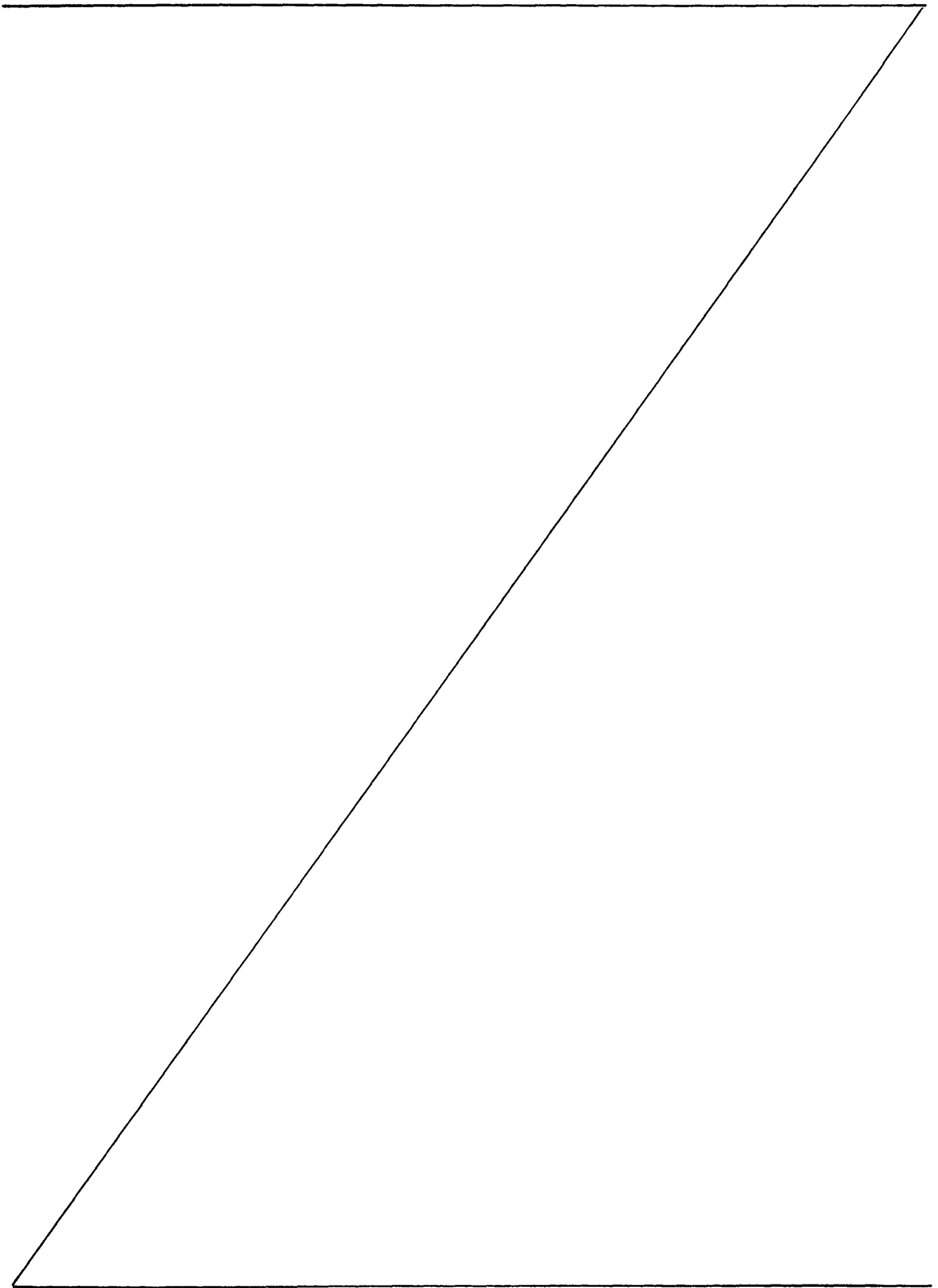


Table 4.2/21. Trial Parcels of the lesser-known species
and the eventual outcome

<u>Trial parcels</u>	<u>All</u>	<u>Outcome</u>			
		<u>Success</u>	<u>Failure</u>	<u>Too early</u>	<u>No answer</u>
At reduced price	6	2	4	-	-
At usual Price	20	9	9	2	-
No trial parcels	18	7	6	5	-
No answer	-	-	-	-	-
All	44	18	19	7	-

(No. of species analysed)

total number of species there were 26 cases where trial parcels/orders were used against 18 cases where no trial parcels were used.

4.2.4. Areas of general interest

Section C was designed to provide information in certain areas of general interest, these areas are related to opinions, attitudes and beliefs of the respondents (Table 4.2/22).

4.2.4.1. Policy about lesser-known species (Question 1):

From the answers of all the respondents we see that the majority preferred to employ a wait-and-see strategy with lesser-known species. If we look at the two extreme positions on the scale, this preference to leave such introductions to other merchants is emphasised.

A further analysis of these opinions and the corresponding importance of Tropical Hardwoods to the operations of the respondents did not reveal any relationship between those two sets of variables. But if we examine the strategy beliefs and the respondents' opinions about their customers it becomes

Table 4.2/22. Frequency of replies on questions of general interest.

	Agree		Not Certain	Disagree	
	Strongly	Slightly		Slightly	Strongly
1. The best strategy about lesser-known species is to leave their introduction to other merchants and by monitoring the developments closely be ready to follow quickly if and when the specie becomes accepted by the trade	18 (29)	11	5	7 (13)	6
2. The market developments during the last 5 years have altered the traditional Agent-Merchant-End user structure of the timber trade.	12 (31)	19	4	8 (12)	4
3. Mechanical and technical advances have made acceptable to the trade species that were not before.	8 (29)	21	7	6 (11)	5
4. Fewer species than 10 years ago contribute the bulk of the Hardwood imports to the U.K. today.	12 (23)	11	12	5 (12)	7
5. The decline of West Africa as the major supplier to the U.K. Trade has resulted in the search for new species.	26 (41)	15	3	- (3)	3
6. Failure to satisfy the whole range of customers requirements (in species and size) results in the loss of the customers business.	11 (27)	16	2	12 (18)	6
7. The current market trend is towards prepared material and away from solids	10 (29)	19	7	8 (11)	3
8. Wood preservatives have done little to improve the quality and value of timber	10 (19)	9	10	10 (18)	8
9. There is no customer loyalty in the timber trade.	5 (10)	5	1	17 (36)	19
10. Grouping species on the basis of similar properties is an unsatisfactory way of selling.	14 (23)	9	6	14 (17)	3
11. End-Users have been very conservative in their attitudes towards any changes	26 (45)	19	-	2 (2)	-
12. Forward Contracts are an uneconomical way of selling.	6 (13)	7	9	13 (24)	11
13. The introduction and acceptance by the end-users of lesser-known hardwood species is the only way of satisfying future demand.	7 (22)	15	8	14 (17)	3
14. The only viable future open to the Timber Trade is specialisation, i.e. stocking of selective species.	12 (29)	17	7	6 (11)	5
15. The U.K. Timber Trade will have to accept lower quality material if it is to maintain and/or increase the current levels of consumption.	16 (28)	12	5	7 (14)	7
16. Closer links and co-operation between merchants is desirable.	11 (27)	16	11	2 (8)	6
17. The future of the Hardwood Trade looks optimistic.	16 (26)	10	8	11 (13)	2

clear that the deciding factors could be the conservative attitudes of their customers. Only 2 respondents appeared to believe in a wait-and-see strategy and at the same time did not accept that there was resistance to change by their customers.

Only one respondent believed in an aggressive strategy for lesser-known species promotion and at the same time did not accept that end-users are resistant to change. Therefore, we can say that the attitudes of end-users towards change is a contributing factor towards strategy formulation in promotion of lesser-known species.

4.2.4.2. Technology (questions 3 and 8): Mechanical and technical advances were thought to be contributive to a wider acceptancy of new species, while the question about the contribution of wood preservatives provided no conclusions.

This overall uncertainty is better illustrated if we cross-tabulate the replies of the above two questions. Out of 31 replies, only 10 either agreed or disagreed on both statements while the other 21 showed opposite directions of answers. It is my opinion that those two questions illustrate better than any other the problems involved in the successful application of existing technology (Collander 1976-a-b-). The reasons behind this lack of application are either economic (some of the advances are cost adding to an extent that only in the very long run the benefits cover the extra costs) or the result of lack of knowledge about such advances.

4.2.4.3. Buyers (customers) behaviour (questions 6 and 9): The respondents seemed to be very sure about the buying habits of their customers. There was an overall belief that merchants should stock a full range of wood based products. This was found to be a contributing factor in satisfying the end-users demands but it was not found to be an absolutely necessary one. At the same time, it provides some indication that merchants believe that there is an element of 'convenience' in the buying behaviour of their customers. There was also an overwhelming belief that there is customer loyalty in the timber trade. If we look at the two questions together, we see that only one case of disagreement on both need for a full stock range and customer loyalty, with 18 replies agreeing on both statements and 25 agreeing on one of the two statements only.

4.2.4.4. Changes in the nature/structure of the Timber Trade: On the point of developments/changes in the nature of the Timber Trade (question 2), there was strong acceptance of the changes in the traditional structure of the Trade. This could be partly attributed to the observed tendency for specialisation (question 14). If we now correlate the answers to questions 2 and 14 we have that 19 from 35 agree on both statements and only one respondent disagreed on both statements.

Strong agreement was also found on the opinion about closer links between merchants (question 16). When the two questions 14 and 16 were correlated, it was found that 19 of the 34 replies agreed on both statements and only 3 disagreed on both.

On the question about the increasing use of forward contracts as a way of selling (question 12) the respondents believed that such changes of the trade are beneficial. Furthermore, 18 respondents out of 32 agreed on the changing nature of the timber trade and also on the importance of forward contracts. Therefore, we can say that the changes in the nature of the timber trade are the direct result of the increasing use of forward contracts, the closer links between merchants and the trend towards stock specialisation of the merchants.

When it came to factual questions, we find that an overwhelming majority of the respondents agreed about the decline of West Africa as the major supplier of tropical Hardwoods and the effect which such a factor had on the search for new species, (question 5). Most of the respondents also agreed on the decline in the number of species imported (question 4), but it is interesting to note the high number of respondents who were not certain. This latter point illustrates the lack of interest in the position of the imports and in particular in the statistics which are presented yearly about the imports of Tropical species. If we now examine the replies to both of the above questions, we see that 19 out of 33 respondents agree on both statements and only one respondent disagreed on both. Therefore, it is expected that as the market developments will become more obvious and supplies will move increasingly away from West Africa, the executives will adjust their stock policies (unfortunately, this means that there is a tendency for executives to follow rather than anticipating the market developments and even better initiating the changes). What comes out of the above is a feeling of

uncertainty which creates a state of inertia in the trade and prevents any active search for new species.

On the area of future developments in the trade (question 10), another factor which was examined was the acceptance of mixed species under one name, especially for species from South-East Asia. It was surprising to find that the respondents believed that such groupings do not contribute to the future of the trade. Even if we allow for a number of merchants who did not have any past experience with species from the Far East, it is still a result that contradicts what many of the experts believe to be inevitable for the future. This uncertainty is apparent if we examine the answers to the questions about forward contracts and grouping species, 5 respondents agreed that both forward contracts and specie grouping are beneficial to the long term development of the timber trade, 10 respondents disagreed on both statements and 16 gave answers to the two questions.

Regarding the observed (from published statistics) trend away from solids and towards prepared material (question 2), most of the respondents accepted this change. Here I would like to add my recent observations during my visits to various merchants, where I have found that during the recent drop in timber demand Tropical Hardwoods have been holding their market share against a drop in demand for prepared material.

On the supplying side, most of the respondents believed that the quality of the material is deteriorating and that it will have to do so even more if it is to maintain and/or increase the current levels of consumption (question 15). This is in line with the fact that the quality of the U.K. imports has been far higher than that of other countries.

Finally, on the future of the Hardwood Trade as a whole (question 17), most of the respondents strongly believed that it looks optimistic.

4.2.4.5. The role/importance of lesser-known species (question 13 in Table 4.2/22): There was considerable uncertainty on the question about the importance of lesser-known species. The replies were then analysed against whether the firm (respondent) had introduced any lesser-known species, Table 4.2/23, the results are not conclusive but we can say that there was a slight tendency for those who had introduced such species to agree with the importance of lesser-known species (13 agreed and 7 did not) while those who had not introduced any lesser-known species were equally divided between agree and disagree (10 to 10).

A further analysis was performed on the replies which had introduced at least one lesser-known specie during the last 5 years, the aim was to correlate their past actions with their opinions about the importance of lesser-known species and their future plans about further such introductions. It became obvious from Table 4.2/24 that even those who did believe in the future importance of lesser-known species and had some past experience with such introductions were not optimistic about any future attempts (3), while those who were undecided and those replied that they will not introduce any species had the same number of replies (8 and 9 respectively).

Finally, an analysis of the opinions of the importance of lesser-known species and the strategy that is followed in respect to such species was performed. It was found that

Table 4.2/23. The importance of lesser-known species to the future of the trade and past experience with such introduction.

<u>Past introductions</u>	<u>All</u>	<u>Lesser-known species are essential to the future</u>					
		<u>Agree Strongly</u>	<u>Agree Slightly</u>	<u>Not Certain</u>	<u>Disagree Slightly</u>	<u>Disagree Strongly</u>	<u>No answer</u>
Yes	23	4	9	2	6	2	-
No	24	3	7	5	8	1	-
No answer	-	-	-	-	-	-	-
<u>All</u>	<u>47</u>	<u>7</u>	<u>16</u>	<u>7</u>	<u>14</u>	<u>3</u>	<u>-</u>

(No. of respondents)

Table 4.2/24. The importance of lesser-known species to the future of the trade and short-term intention of any such introductions.

<u>Short-term plans</u>	<u>All</u>	<u>Lesser-known species are essential to the future</u>				
		<u>Agree</u> <u>Strongly</u> <u>Slightly</u>	<u>Not</u> <u>Certain</u>	<u>Disagree</u> <u>Slightly</u> <u>Strongly</u>	<u>No answer</u>	
Will introduce such species	4	-	3	-	1	-
Will not introduce any such species	9	3	2	1	2	1
Undecided	8	1	4	-	3	-
No answer	2	-	-	2	-	-
<u>All</u>	<u>23</u>	<u>4</u>	<u>9</u>	<u>3</u>	<u>6</u>	<u>1</u>

(No. of respondents who had introduced at least one lesser-known specie during the last 5 years.)

9 out of 47 respondents believed in an aggressive strategy and high importance of lesser-known species for the future; 13 respondents believed in a wait-and-see strategy and at the same time did not accept any high importance of lesser-known species and finally 10 believed in a wait-and-see strategy but at the same time in a high importance of lesser-known species for the future.

If we put all the above together it becomes obvious that there is a high degree of uncertainty and conflicting strategies/opinions/beliefs about the current and future state of the trade.

4.2.5. Past actions - Desirable strategies - Future plans.

To find if there is consistency between strategy, past experience with lesser-known species and future plans about further introductions, an analysis of questions 9, 13 and 14 was performed.

4.2.5.1. Replies with positive strategy intentions:

It was found that only one of those who strongly believed in such a policy and 3 of those who slightly believed, did not have any past experience with promotion of lesser-known species; a further analysis of the above respondents revealed that they all ranked Tropical Hardwoods as 3 or 4 or 5. Although there is no data to support my observations, by talking to various respondents I realised that:

(a) some of the observed discrepancies between answers were due to differences between the respondents personal views and the overall policy followed by their company,

(b) in other cases it was just lack of opportunity to promote such species which resulted in such contradictory answers, this last point was emphasised by the fact that Tropical Hardwoods were ranked low in importance. Furthermore, when an examination of the stocks held by the above firms was performed, it was found that they were stockists of the major imported species only. Therefore, we can say that such firms will not go out looking for lesser-known species but if an outside reliable source will propose a specie they will probably take up the challenge in an aggressive way. But with such firms there is always the question of how efficiently they are geared to deal with all the problems associated with such introductions.

If we move to those respondents who believed in an aggressive strategy and at the same time did not have any past experience with promotion of lesser-known species, we find that those who did not expect to introduce any more such species showed a high rate of unsuccessful past attempts (5 failures out of 9 replies). Even those who believed strongly in an aggressive strategy appeared to be reluctant because of their past experience. A point which I must make here is that, it was not possible to analyse exactly the reasons behind the decisions not to continue further promotions of lesser-known species; therefore, there might be a case for the effect that the present state of the trade had on those decisions, that is, once the trade (demand) will pick up then those firms with positive attitudes will reconsider their positions and probably will start looking for new species once again. It is also possible that such replies simply meant that the firms were not actively looking for

new species, but if the opportunity arises they might take it up. In other words, the likelihood of such firms to react positively to such opportunities is higher than those firms who believe in a wait-and-see strategy.

The role of a positive attitude became more obvious when those respondents who had the benefit of past experience but were still not certain about the future were examined. Out of 7 species mentioned by the respondents in this category, 4 were failures, 2 were successes and one was too recent to decide. But this rather high rate of failures did not mean for certain that no more introduction would take place.

After an examination of the size (turnover) of the respondents who replied with NO to any future introductions and those who replied DON'T KNOW, it was found that the second group of respondents (firms) appeared to be in a higher turnover bracket. Therefore, although the failure rate of those two groups of respondents was equally high, the fact that some of them belonged to a higher turnover bracket provided them with more freedom to attempt further promotions.

4.2.5.2. Replies being not certain: Among those respondents who were not certain about the best strategy to be followed, we see that there were only 2 respondents who had any past experience. This proves that the managers/directors have thought about the problem and the possible strategies to be followed, but still have not found any definite answers. This becomes more apparent if we see that only 5 of the 47 respondents were not certain while the rest showed either a

positive or negative attitude towards the proposed aggressive strategy. Although there was only one reply which showed uncertainty both on the strategy to be followed and the future plans, it was still consistent with the previously stated conclusion that uncertainty does not mean negative strategy.

Finally, on the same lines of strategy attitudes, we see that 2 respondents who had no firm policy expected to introduce more lesser-known species in the near future. It is interesting to note that there were 3 successes and only one failure mentioned by those respondents. This reaffirms the belief that it is not so much the strategy but the past experience which determines further actions. It is what I realised during my meetings, that there are no clear strategies to be followed or marketing programmes to indicate the direction which future actions should take.

4.2.5.3. Replies preferring a wait-and-see strategy:
At first sight it is apparent that there were no replies who believed in a wait-and-see strategy and who after an initial promotion still plan to introduce more lesser-known species. Unless there is a strong positive strategy about such introductions, any such events would tend to be a one-off case or the result of a specific demand by a customer who guarantees the sale of the specie.

From the 29 respondents who believed either slightly and/or strongly in a wait-and-see strategy, 20 respondents were shown to be consistent as far as they did not introduce any lesser-known species in the past. From those 20 respondents, 11 believed strongly in such a strategy and 9 slightly, this means that even a slight belief in a wait-and-see strategy is still enough to prevent any such promotional attempts.

When the turnover of those firms was examined, it was found that it was lower than the average turnover of the trade. It was also not surprising to find that a high rate of failures was associated with these respondents who believed in a wait-and-see strategy and attempted to introduce a lesser-known specie (8 failures, 3 successes and one too-early to decide).

What was interesting was to note that even those respondents who had some success they still expressed their unwillingness for further attempts, which means that firms with such strategies place higher emphasis on failures than on successes. This becomes more apparent if we look to the fact that those respondents who were not certain about future introductions mentioned 7 species of which 5 were successful, one failure and one too-early to decide. It is obvious that despite the high rate of successes there was no guarantee that any future introductions would take place. It was very revealing to examine the analysis of the successful introductions mentioned by these respondents, it was found that all of the species mentioned were special cases of some sort. From the 5 successes, 3 were introduced by other merchants at the same time but did not prove to be successful with them, while the other 2 species were meant for very specialised jobs that have a very limited demand. It is my opinion that the above introductions were not really conscious attempts to expand the stock range or their market share but rather the results of specific demands by small segments of the market that guarantee the sale of the species even before they are imported. Such events eliminate the inherent elements of risk and uncertainty that otherwise follow such introductions.

4.2.5.4. Past experience as a determinant of future action: On an overall basis we can say that

(a) past experience with lesser-known species plays the major part in determining future policies, but when the respondents believed in a positive aggressive strategy there was more emphasis on successful past introductions rather than unsuccessful ones, the opposite was true for those respondents who believed in a wait-and-see strategy,

(b) there was an overall lack of consistency in the replies and this was thought to be the result of not having clearly defined policies,

(c) the size of the Hardwood Department (in turnover and overall importance) seems to have an effect on the actions and decisions of the managers,

(d) uncertainty does not necessarily mean negative attitudes towards introductions of lesser-known species,

(e) there is no firm with a wait-and-see strategy (negative) who intends to introduce a lesser-known specie in the near future (next 6 months).

CHAPTER 5

THE END-USERS SURVEY

This chapter deals with the end-users survey in the same way as the previous chapter has dealt with the merchants survey.

5.1 STRUCTURING THE END-USERS SURVEY

5.1.1. The Aim

The aim of this survey was to:

(a) build up a collection of case histories of past attempts to promote lesser-known Hardwood species; to examine the marketing efforts behind such introductions as received by the end-users,

(b) obtain information about the current usage patterns in the various end-use segments,

(c) examine the influence of technology and other non-marketing elements on the decision to use and/or reject lesser-known species and establish the relative importance of each element,

(d) determine the decision making units of different end-use segments and evaluate the role of the information sources on those units,

(e) examine the relevance and relative importance (as received by the end-users) of the various marketing elements in the decision making process,

(f) evaluate the extent to which expected reactions from the general public have any bearing on the choice of the species to be used.

5.1.2. The sample frame

5.1.2.1. Selection

The sample frame was drawn up by using Kompass 1980. Two sections of this publication were used, sections 25 and 26. In those, section 25 included firms using timber excluding furniture manufactures and section 26 was devoted to furniture manufacturers.

Other alternative ways of deriving a sample frame were considered, but were found to be unsatisfactory, these alternatives were:

i. to use the files of the collaborating firm was initially considered because of the obvious advantages related to information about the size of the firms and the people involved in the buying process of each firm (the latter point was considered as being very important, because of the success that the personally addressed merchants survey had). But it was decided that drawbacks like

(a) most of the customers of the collaborating firm were from two end-use segments only,

(b) because the firm was part of a group of companies, it operated in a narrow geographical area (South East),

(c) the respondents would have been exposed to identical marketing stimuli (assuming a moderate degree of customer loyalty), would produce very similar answers.

ii. a great deal of consideration and time was spent in looking at the alternative of using Trade Directories. It was found that, the British Woodworking Federation represents around 80% of the joinery output, the National Association of Shopfitters does not have a directory (they suggested looking in the Yellow Pages!!!), the Hardwood Flooring Manufacturers Association has been disbanded, the British Toy Manufacturers Association Ltd. provides an extensive list of its members but does not indicate which firms use timber, the British Furniture Federated Association lists 90% of the total production etc.^{*1} All the above differences between the end-use

*1 For a full list of Trade Associations, see Appendix 5.1/1

associations discouraged me from using trade directories. There is no uniform coverage and they do not differentiate between manufacturers, only importers, only services etc.

iii. Kompas provides an extensive list of firms which aided the selection of an appropriate sample frame.

5.1.2.2. The process

As we have seen, Kompas classifies wood users into two sections 25 and 26. Each section sub-segments each firm's activities according to pre-set criteria on exports, imports, retailing, services only, door manufacturers etc. The first task was to eliminate those sub-groups which were not relevant to the present study (i.e. services only, importers etc.).

The sub-groups which were eventually considered were:

- 25-11 Non-importing merchants
- 25-14 Wooden doors and windows, builder joinery
- 25-15 Wooden buildings
- 25-23 Wooden boxes and containers
- 25-96 Wooden household and other products
- 26-01 Domestic furniture - wooden (including upholstery)
- 26-02 Domestic furniture - wooden
- 26-03 Wooden office and institutional furniture
- 26-06 Shopfittings and contract furniture
- 26-08 Hospital furniture and equipment (wooden)

The problem of no reference to Hardwoods still remained.

In order to draw a sample, I used the indices which were provided at the front of each section (i.e. one index for section 25 and one for section 26). These indices included the names of all the firms in the particular section (only once) and next to the name the code numbers of the sub-groupings

which the firm belongs to (e.g. YZ Ltd. 25-11, 25-14, 25-23). The firms which belonged to one of the chosen sub-groups were then singled out (a firm was chosen as appropriate even if at the time it was included in a sub-group which was not relevant to the present study). By using these indices, the possibility of overlapping was eliminated. The firms which were found to satisfy the set criteria were 191 from section 25 (of a total 762 firms), and 705 firms from section 26 (of a total 919 firms). Once I knew that there were no duplications within each index, the two lists of acceptable firms were compared, every firm which was found to belong in both lists was taken out of the list drawn from section 26. After this process, there were 191 firms from section 25 and 690 firms from section 26 which satisfied all the pre-set criteria. It was decided to include in the sample all 191 firms from section 25 and take every fifth firm from section 26. This gave a total of 329 firms (191 firms from section 25 and 138 firms from section 26).

5.1.2.3. Limitations

The major problems with this method of selecting a sample were:

(a) there was no indication about the size of the firms in the survey,

(b) it was impossible to establish whether the firms of the survey were independent enterprises or subsidiaries of other firms which were involved in the same or different trades,

(c) as it has already been stated, there was no indication whether the firms were using Hardwoods, the only

information which I had was that they were using Timber in general.

5.1.3. The questionnaire

5.1.3.1. Design of the questionnaire

An initial list of topics to be covered was produced, these were selected through the relevant literature and were designed to be comparable to the topics covered by the merchants survey. Based on such a list of topics, semi-structured interviews were conducted. There was an obvious problem of transportation and therefore, the only area covered during those interviews was that of Greater London. The firms to be interviewed were selected with the help of the Hardwood Manager of the collaborating firm, the choice criteria were involvement in past introductions of lesser-known species and maximum coverage of end-use segments. Twelve interviews were consequently arranged, all of the people interviewed had some past experience with lesser-known species, but were not necessarily using one at the time of the interviews. Of those 12 interviews, 4 were furniture manufacturers, 3 were general joinery firms, 3 were non-importing merchants, one was a window and door manufacturer and one was involved in the ship and boat building business. From those interviews a first draft was drawn up, with two factors in mind:

- i. the experience gained from the merchants questionnaire on areas like layout etc.
- ii. some of the questions were so designed as to relate to questions in the merchants questionnaire.

That first draft was then piloted on 6 firms, of those 2 were amongst those interviewed at the beginning and therefore came from the GLC area, while the remaining 4 firms had no previous knowledge of the survey and were from outside the London area. All the firms inside London were visited and the questionnaire was discussed with the person who filled in the answers, while for the firms outside London the person completing the questionnaire was contacted and asked to retain the completed questionnaire until he was contacted again. When the questionnaires were expected to have been completed the respondents were contacted through the phone and having the completed forms in front of them were asked to discuss their problems regarding the completion of the questionnaire.

All the points raised were considered and a second draft was produced. At that time it was decided to include in the questionnaire some further questions on behavioural aspects. A second pilot was conducted (4 entirely new firms from the London area were used) and it was found that except for very minor layout suggestions there were no major problems in understanding and completing the questionnaire.

5.1.3.2. Structure.

Like the merchants questionnaire, there were three sections, an opening letter, an order form and an open-ended question. A reply-paid envelope was provided for replying. Copies of the questionnaire are attached, Appendix 5.1/2.

-I- The opening letter: The same content as the merchants questionnaire. This one was addressed to the "Timber Buyer" because it was not practicable to obtain the names of the

individual buyers. There was also an addition requesting those firms which did not use any Hardwoods to return the questionnaire without completing it, this was designed to help the later posting of reminders.

-II- Section A: It served the same purpose as the corresponding section in the merchants questionnaire.

-III- Section B: It was designed to establish the underlying factors behind the buying process of the respondents, their attitudes and beliefs about the trade and their suppliers.

-IV- Section C: It was designed to examine past experiences with lesser-known species and also the reasons behind the adoption or rejection of such species.

5.1.3.3. Format

Exactly the same principles applied as the ones in the merchants questionnaire.

5.1.4. Posting of the questionnaires

5.1.4.1. First post: All the 329 questionnaires were first posted to the sample on 11th May 1981. I received 127 replies; of those 55 firms returned the questionnaire uncompleted because they did not use any Hardwoods at all, a further 3 firms had

moved and therefore the questionnaire was returned by the Post Office. The remaining 69 replies were usable and were coded into computer sheet straight away.

5.1.4.2. Reminders: A further 202 questionnaires were posted on 1st June to those firms which did not reply. I received back 98 replies; on the same lines as above, 59 were uncompleted, one had moved and the remaining 38 were coded to be analysed.

5.1.4.3. Closing date: The last date of accepting and coding replies was set to be the 30th of June. The date proved satisfactory because only two more replies were received after that date and both were not completed.

5.1.5. Response rate

From a sample of 329 firms taken from two sections of the Kompass, there were a total of usable replies of 107, and there were another 114 who returned the questionnaire stating that their firm did not use any Tropical Hardwoods. Finally 4 firms had moved their premises to new addresses and the questionnaires were returned by the Post Office. For a detailed breakdown of the response rate from each of the two sections used see Table 5.11, section 25 received a slightly higher response rate than section 26 (1.65 to 1.31 respectively).

Table 5.1/1. Breakdown of response to the end-users Survey.

	<u>Section 25</u>	<u>Section 26</u>	<u>Total</u>
<u>Sample frame</u>	191	690	881
<u>Sample</u>	191	138	329
<u>Response</u>			
1. Usable replies			
- first part	36	33	69
- reminder	<u>20</u>	<u>18</u>	<u>38</u>
	56	51	107
2. Not using TRHD			
- first part	29	26	55
- reminder	<u>31</u>	<u>28</u>	<u>59</u>
	60	54	114
	(116)	(105)	
3. Change of address			
- first part	1	2	3
- reminder	<u>-</u>	<u>1</u>	<u>1</u>
	1	3	4

5.2. END-USERS SURVEY ANALYSIS

There are some discrepancies between the individual and overall totals for two main reasons:

- i. not all of the respondents completed all parts of the questionnaire,
- ii. in the very first question, on the nature of the respondent's operations, they were given the option of 'ticking' more than one end-use segment.

The analysis takes into account the fact that some of the end-use segments received only a few replies and therefore it was not always possible to draw meaningful conclusions for those segments (only when the replies were unanimous conclusions are drawn). There were also certain other points which were considered during the analysis, these were:

- (a) the rate of response from the two sample sections (see End-use survey section) was different, therefore the possibility of 'weighting' the replies was considered but it was decided that such an approach will not provide any more accuracy to the results (for more details see Appendix 5.2/7.).
- (b) because of the already mentioned small number of replies in some of the end-use segments, a case was made for combining the replies to those minor segments (i.e. ship/boat builders, turners, pattern makers and box makers) and present them under one combined heading, but the very diverse nature of the operations and needs of the above mentioned segments were thought to cause bias in the interpretation of the data if they were combined and therefore each segment is examined separately and conclusions are drawn only when it is possible.

Therefore, the present analysis is based on the 'raw' data of the replies and is mainly presented on an individual segment basis, overall results are presented for reasons of comparison and whenever a more detailed break-down is meaningless. Each response is analysed according to the end-use segment box which has been 'ticked', if more than one entry was recorded then different analyses are performed for each segment 'ticked'. This has produced two different overall totals, one of all the replies which could be analysed (total 107) and one of the total number of end-use segments mentioned in the replies (total 126), this difference should be borne in mind by the reader in every stage of this report.

5.2.1. Findings from the analysis of the end-users survey.

Overall

- 1) The term Lesser-known or what constitutes a Lesser-known specie, was found to be a matter of individual perception and personal experience. (5.2.3.2.-I-)
- 2) Overall, the more important that Tropical Hardwoods are to the operations of a firm and the greater the proportion of the final product which is made out of Tropical Hardwoods, the greater the likelihood is that the particular firm had some experience with lesser-known species. (4.2.3.1.-II-III.)
- 3) The more specialised a firm is in its use of material (only a small number of species are used) the less likely it is that the firm will try a lesser-known specie. (5.2.3.1-IV)

Firms with past experience with lesser-known species

- 4) Trade Associations and contacts between the members of similar end-use segments do not initiate trials of lesser-

known species. Such trials are the result of problems with the usual material of a firm or the outcome of a recommendation by one of the suppliers of the firm.

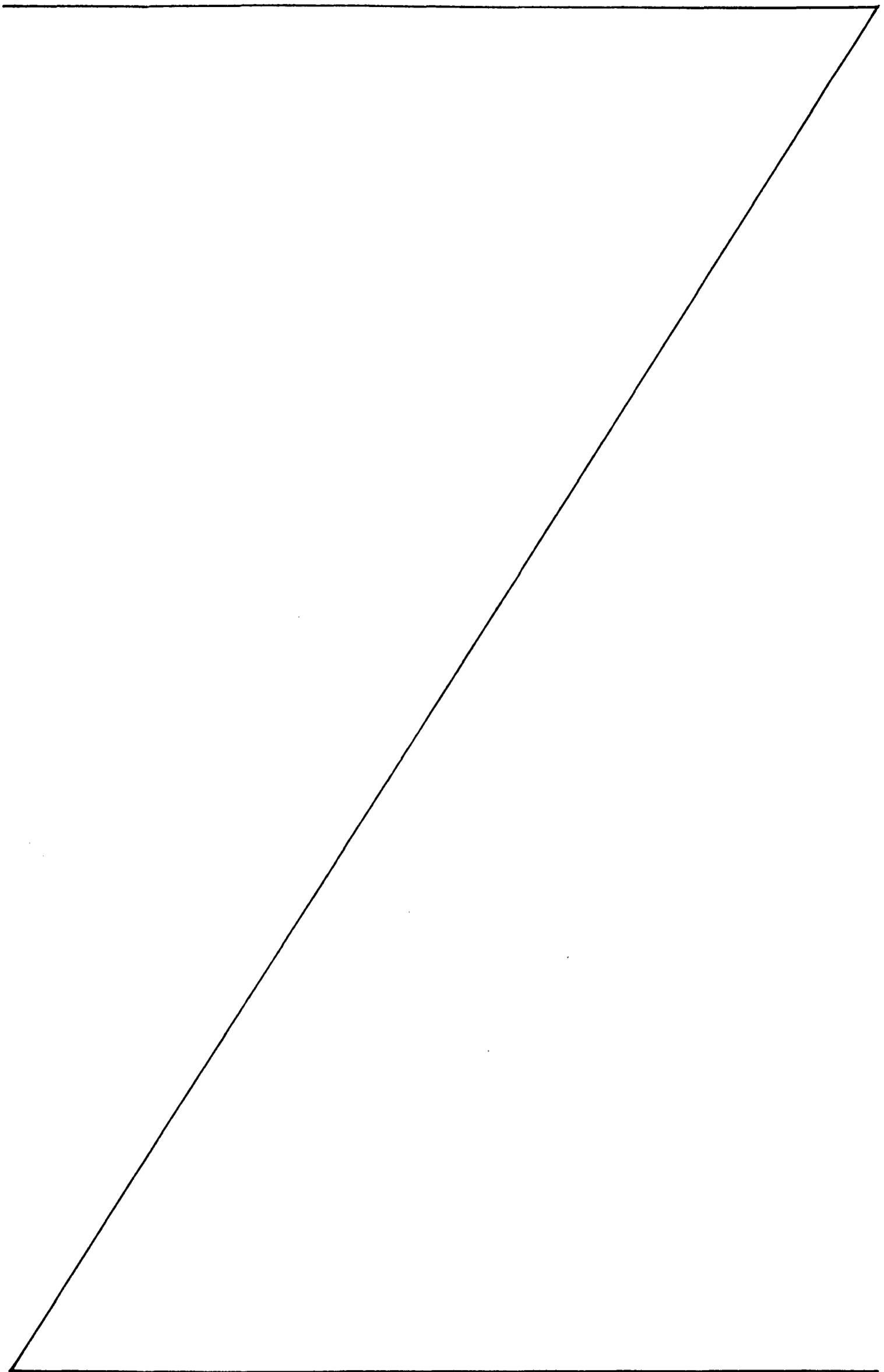
(5.2.3.2-II-)

5) The reasons for having tried a lesser-known specie were found to be for the individual end-use segments (in order of importance):

- (a) joiners: price advantage, resemblance to an established specie, shortage of usual material
- (b) shopfitters: price advantage, resemblance to an established specie, suitability for a specific job
- (c) furniture manufacturers: price advantage, suitability for a specific job, resemblance to an established specie
- (d) turners: suitability for a specific job, resemblance to an established specie, shortage of usual material
- (e) merchants: price advantage, suitability for a specific job, shortage of usual material.

It was also established that, the more customer orientated (compared to product orientated) the respondents were, the less important price advantage was as a deciding factor for having tried a lesser-known specie. (5.2.3.2-III-)

6) The structure of the firm's decision making unit (DMU) determines the relative importance placed on the reasons for trying a lesser-known specie. If the DMU consists of a person with managerial responsibilities then price



becomes the predominant reason, while the more production orientated the person who takes the decision is (i.e. a technician), then emphasis is placed on the suitability of the properties of a specie for a specific job. (5.2.3.2.-III-i-)

- 7) According to the areas which cause most concern about the present quality of supplies, the reasons for having tried a lesser-known specie were (in order of importance to each reason of concern):
- (a) unsuitable dimensions: price advantage, suitability for a specific job, resemblance to an established specie
 - (b) grading: price advantage, resemblance to an established specie, suitability for a specific job
 - (c) moisture content: suitability for a specific job, shortage of usual material, price advantage
 - (d) provision of services: price advantage, suitability for a specific job, resemblance to an established specie
 - (e) quality of material supplied: price advantage and resemblance to an established specie were the only reasons which correlated with this concern area, they both were of equal importance. (5.2.3.2.-III-ii-)
- 8) The more important Tropical Hardwoods are to the overall operations and to the final product, the more factors

will have to be considered before a decision is taken on whether or not to try a lesser-known specie. If Tropical Hardwoods are not important at all then the only factor which is considered is price, while if they are of primary importance then price, suitability for the job and resemblance to an established specie are all of equal importance (intermediate positions consider the above factors according to the importance of Tropical Hardwoods to their operations). (5.2.3.2-III-iii)

- 9) Of the respondents, 38 out of 48 received some form of samples before placing a full order. Most of the samples were in the form of rough sawn material and only 2 received samples in the form of the final product which they manufacture. (5.2.3.2.-IV)
- 10) A smaller number, 33, received a trial parcel before placing a full order. Of those respondents, 9 said that the subsequent material was of inferior quality to the trial parcel. (5.2.3.2.-IV-)
- 11) On an overall basis, the respondents were not pleased with the help and advice which they received from their supplier during the trial period. They also found that appropriate information was not provided and also that such information was not easily accessible to them. (5.2.3.2-V-)

Firms without any past experience with lesser-known species.

- 12) The reasons for not having tried any lesser-known species in the past were found to be for the individual end-use segments (in order of importance):
 - (a) joiners: ample supply of usual material at reasonable prices, nothing suitable

was offered, resistance by customers and insufficient information (the last two were of equal importance)

(b) shopfitters: nothing suitable was offered, ample supply of usual material at reasonable prices, past experience

(c) furniture manufacturers: ample supply of usual material at reasonable prices, nothing suitable was offered, customer resistance

(d) merchants: insufficient information, past experience, ample supply of usual material at reasonable prices

(e) pattern makers: ample supply of usual material at reasonable prices and nothing suitable was offered were of equal importance.

(5.2.3.3.-I-)

13) The DMU of the firm determines the reasons for not having tried a lesser-known specie. If a technician is responsible for such decisions then the only reason which was considered was the suitability of the proposed specie to the operations (production capabilities) of the firm, on the other hand people with managerial responsibilities were more concerned with the supply situation of their usual material and also considered factors like resistance from their customers and past experience. (5.2.3.3.-I-i-)

14) Irrespective of the overall importance of Tropical Hardwoods, ample supply of usual material at reasonable prices and nothing suitable on offer were the main reasons for not having tried a lesser-known specie (they

were of equal importance). (5.2.3.3-I-ii-)

15) As for the reasons which cause concern about the quality of the material supplied and the reasons behind not having tried a lesser-known specie, it was found that all the reasons of concern correlated strongly with the fact that nothing suitable (in the opinion of the respondents) was offered. (5.2.3.3.-I-iii)

16) Of the reasons which might induce future trial(s) of lesser-known species, irrespective of the end-use segment, it was found that price advantage was the most important reason with suitability for a specific job second and shortage of usual material third. There was some difference between the manufacturing and non-manufacturing segments, the first placed greater importance on price while the second on property suitability for a specific job. (5.2.3.3.-II-)

17) The same was found to be true for the various DMUs. Managers placed greater emphasis on price advantage while technicians on suitability for a specific job. (5.2.3.3.-II-i)

18) It was also found that price, as an inducing factor, is more important for the firms which use Tropical Hardwoods as their main raw material (both on an overall basis and as the major proportion of their final product). (5.2.3.3.-II-ii-)

Future intentions about lesser-known species

19) On the question about intentions of promoting lesser-known species to their customers, the respondents provided the following information:

- (a) Most of them (74%) said that they will be prepared to promote lesser-known species as long as they are assured of their suitability.
 - (b) Of the individual segments, furniture manufacturers appeared to be more willing to promote such species to their customers; on the opposite side, merchants and D.I.Y. were the least willing segments to promote such species.
 - (c) The more customer orientated (compared to product orientated) the DMU of a firm is, the more likely it is that it will be prepared to promote a suitable lesser-known specie.
 - (d) If Tropical Hardwoods are of major importance to a firm (first) then the likelihood is that the firm will be prepared to promote a lesser-known specie. If the importance declines below third place then the likelihood is reversed. If Tropical Hardwoods are ranked second in importance then there is an equal probability that the firm will or will not be prepared to promote a lesser-known specie to its customers.
 - (e) Finally, the smaller the proportion of the final product which is made out of Tropical Hardwoods, the greater the likelihood that the firm will be prepared to promote a lesser-known specie to its customers. (5.2.3.4.-III-)
- 20) On the question about plans of trying a lesser-known specie in the near future, the replies showed that:
- (a) Most of the respondents did not plan any such trials (79%).

- (b) Those of the respondents who replied that they were planning to try more lesser-known species, the majority were of managerial responsibilities (compared to technicians).
 - (c) Of the respondents who were planning to try more lesser-known species, the majority had some experience with such species.
 - (d) The smaller the proportion of the final product which is made out of Tropical Hardwood, the higher the likelihood that the firms were prepared to try more lesser-known species. (5.2.3.4.-V-)
- 21) Of all the respondents 69% replied that they were prepared to modify their production in order to accommodate "new" species of which the respondents were satisfied with their suitability. This together with many other indications lead to the conclusion that, overall, end-users are not negatively predisposed against lesser-known species, but viewed such species with a very critical eye because of past failures (5.2.3.4.-II-)

5.2.2. The Respondents

This section presents a description of the respondents in respect of the nature and structure of their operations and their particular needs.

5.2.2.1 End-use segments (Q.1): When all the replies were totalled, we had a break-down of the respondents classification according to the nature of their operations, Table 5.2/1. As we see, the majority of the responding firms were joiners, with furniture manufacturers second and

Table 5.2/1. Respondents analysis by end-use segments

<u>End-use segments</u>	<u>Times 'ticked'</u>	<u>% of 126</u>	<u>% of 107</u>
		<u>%</u>	<u>%</u>
J ^{a/} Joiners	46	36	43
/ Flooring manufacturers	-	-	-
S Shopfitters	16	13	15
F Furniture manufacturers	29	23	27
S/B Ship/Boat builders	2	2	2
DIY D.I.Y.	6	5	6
T Transport - Turners	4	3	4
M Non-importing merchants	15	12	14
P Pattern makers	4	3	4
B Box makers	4	3	4
No answer	-	-	-
All	126	100	-

a/ Abbreviations used in the following tables.

shopfitters and non-importing merchants equal in third place. Because of the already explained fact that some of the respondents 'ticked' more than one end-use segment, it was thought as necessary to establish possible correlations between any two segments mentioned by the same respondent(s); it was found that there was only a weak degree of correlation between the joiners and the shopfitters, but the correlation was not strong enough to have any analytical value. Therefore, the analysis is based on an individual end-use segment basis.

5.2.2.2. The size of the responding firms (Q.2): It was not possible to estimate the size of the responding firms from the sample frame used, therefore, question No. 2 was designed to provide some relative measurement between the

respondents. It is appreciated that in absolute terms the question provides a very inadequate measurement basis, but for the purpose of this study a grouping of respondents into comparable categories was needed and this is achieved.

Table 5.2/2. End-use segment employees

<u>Number of employees</u>	<u>All</u>	<u>End-use segment</u>									
		<u>J</u>	<u>S</u>	<u>F</u>	<u>S/B</u>	<u>DIY</u>	<u>T</u>	<u>M</u>	<u>P</u>	<u>B</u>	<u>No Answer</u>
Less than 10	25	11	1	6	-	2	2	2	1	-	-
Between 10 and 50	56	19	11	8	-	3	2	9	3	1	-
Between 50 and 100	22	7	3	7	2	1	-	1	-	1	-
Over 100	22	9	1	8	-	-	-	3	-	1	-
No answers	1	-	-	-	-	-	-	-	-	1	-
All	126	46	16	29	2	6	4	15	4	4	-

From Table 5.2/2 we see that most of the responding firms employed between 10 and 50 people in connection with timber work. There were only very few firms which employed over 100 people, these were mainly joiners and/or furniture manufacturers.

5.2.2.3. Importance of Tropical Hardwoods to the operations

(Q. 3 & 4): Two measures of importance were used,

-I- Tropical Hardwoods as a proportion of the final

product (Q.3): For the majority of the respondents (84 of 126), Tropical Hardwoods constituted less than 30% of their final product, Table 5.2/3. Only very few joiners (5 out of 46) and furniture manufacturers (4 out of 29) replied that their final product was mainly of Tropical Hardwoods. When the number of people employed in timber work and the proportion of the final product which is made out of Tropical Hardwoods

Table 5.2/3. Proportion of final product(s) out of TRHD -
by end-use segment

<u>Proportion of final product of TRHD</u>	<u>End-use segment</u>										
	<u>All</u>	<u>J</u>	<u>S</u>	<u>F</u>	<u>S/B</u>	<u>DIY</u>	<u>T</u>	<u>M</u>	<u>P</u>	<u>B</u>	<u>No answer</u>
Less than 30%	84	28	11	20	1	4	2	11	4	3	-
Between 30%-60%	27	13	3	5	1	1	1	3	-	-	-
Over 60%	14	5	2	4	-	1	1	1	-	-	-
No answer	1	-	-	-	-	-	-	-	-	1	-
All	126	46	16	29	2	6	4	15	4	4	-

were analysed together, it was found that there were only 2 firms which employed more than 100 people and their final product was mainly of Tropical Hardwoods (60% and over), one of those firms was a joiner and the other one a furniture manufacturer. There was a relatively high number of respondents who employed less than 10 people and whose product(s) was mainly out of tropical Hardwoods (8 or 14 whose product(s) were made mainly of TRHD). It is also interesting to note that as the number of employees increased the proportion of the final product(s) out of Tropical Hardwoods declined in relative terms. In my opinion, this is because the larger the firm is, the more diversification of production takes place, while small firms tend to be specialised in their production and use of material.

-II- Volume importance of Tropical Hardwoods (Q.4):

It might appear that questions 3 and 4 are identical, but they are designed to provide some information about the mix of the wood-based materials used by the end-users. That is, whether the mix comprised of a large number of different materials or just a few. Overall, Table 5.2/4, shopfitters

Table 5.2/4. Importance of Tropical Hardwood to end-use operations

Rank	Importance	All	End-use segments										No Answer	
			J	S	F	S/B	DIY	T	H	P	B			
			(%)	(%)	(%)									
1st	35	13	(28)	7	(44)	11	(38)	-	2	-	1	-	1	-
2nd	28	13	(28)	-		5	(17)	-	1	3	5	1	-	-
3rd	26	8	(17)	4	(25)	6	(21)	1	1	-	4	1	1	-
4th or more	31	12	(26)	3	(19)	6	(21)	1	1	-	5	2	1	-
No answer	6	-		2	(12)	1	(3)	-	1	1	-	-	1	-
All	126	46		16		29		2	6	4	15	4	4	-

ranked Tropical Hardwoods higher than the other segments with furniture manufacturers also showing some preference.

-III- Importance of Tropical Hardwoods to the operations

of a firm and the proportion of the firms' final product made

of such material: If we now combine the findings to the

above questions, we have Table 5.2/5, where it is apparent

that all the respondents who ranked Tropical Hardwoods as of

minor importance to their operations they used such material

or less than 30% of their final product. As the importance

increases the proportion of the final product made of Tropical

hardwoods increases as well, this is not surprising, but it is

interesting to note that of the firms whose product(s) was

predominantly of Tropical Hardwoods they ALL ranked such

material as first. As for individual segments, we have that

for shopfitters the importance of Tropical Hardwoods is high

while their final product(s) show a comparatively low propor-

tion of such material, therefore, we can say that the remaining

proportion of their product(s) consists of a wide variety of

other materials, the same seemed to apply to furniture

Table 5.2/5. Importance of Tropical Hardwood to the overall operations of the firm and the proportion of the final product made of Tropical Hardwood.

<u>Proportion of final product made of TRHD</u>	<u>Importance of TRHD</u>					
	<u>All</u>	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Minor</u>	<u>No answer</u>
Less than 30%	71	4	13	20	31	3
Between 30-60%	24	12	8	3	-	1
Over 60%	12	12	-	-	-	-
No answer	-	-	-	-	-	-
All	107	28	21	23	31	4

manufacturers but not to the same extent. For joiners, it is clear that Tropical Hardwoods represents one of equally important materials used in their production. As for ship/boat builders, merchants, turners, pattern makers and box makers the replies to those two questions (3 and 4) appeared to be consistent as far as Tropical Hardwoods were not important to their overall operations and did not represent a high proportion of their final product. Finally, the replies of the D.I.Y. respondents were far too diverse to provide any meaningful conclusions.

5.2.2.4. The Tropical Hardwood species used (Q. 5, 6, 10 and 11):

-I. Species used on a regular basis (Q.5): On an overall basis, Appendix 5.2/1, the most 'popular' specie was Brazilian Mahogany, with Iroko second, Afrormosia third, African Mahogany fourth and Lauan fifth. While for individual segments in respective order of preference, the species were,

- i. joiners Brazilian Mahogany and Iroko,
Afroormosia and Lauan and Teak and
African Mahogany.
 - ii. shopfitters Brazialian Mahogany and Afroormosia
and Teak, African Mahogany
 - iii. Furniture manuf. Brazilian Mahogany, African Mahogany
and Teak, Ramin
 - iv. merchants Brazilian Mahogany, Iroko, Utile,
- as for the other segments, there were no sufficient numbers of replies to draw any conclusions.

-II- Reasons for using specific species (Q.6): If we look on an overall basis (Table 5.2/6) we see that the most important reason for using any Tropical specie was customer's

Table 5.2/6. Reasons for using specific species

<u>Reasons</u>	<u>All</u>	<u>Main Contributive</u>		<u>M & C</u>	<u>Rating</u>
		<u>(M)</u>	<u>(C)</u>		
Traditionally used	29	9	20	29	19
Customer demand	69	45(1)	24	69(2)	57(1)
Property suitability	71	28(2)	43(1)	71(1)	50(2)
Price advantage	47	15(3)	32(2)	47(3)	31(3)
Guaranteed supplies	36	4	32(2)	36	20
Suitable to machinery	20	-	20	20	10
No answer	49	6	43	49	-
All	321*	107	214	321	

* The total is derived by 107 respondents at 3 rankings from each respondent = 321 (107 x 3).

demand, with the suitability of the specie properties second and price third. If we now turn to individual segments, we have that the reasons, in order of importance to each segment are:

- i. joiners - customer's demand, property suitability and price
- ii. shopfitters - customer's demand, property suitability and tradition
- iii. furniture manufacturers - property suitability, demand, price
- iv. D.I.Y. and merchants - customers demand is by far the predominant reason, this is not surprisingly if we consider the fact that those two segments are not manufacturers but provide service to those who manufacture, i.e. sell raw material and not finished products (although D.I.Y. firms have started selling pre-finished or semi-finished products)
- v. turners - property suitability and price come equal first and customers demand third.

As for the other segments, the replies did not provide any conclusive data.*1

-III- Important timber characteristics (Q.10):

Overall (Table 5.2/7) the most important property characteristic

Table 5.2/7. Important Timber Characteristics

	<u>First</u>	<u>Second Third</u>		<u>M & C</u>	<u>Rating</u>
	M	C			
1. Stability	33(1)	12	21(1)	66(1)	50(1)
2. Workability	19(3)	24(1)	7	50(3)	35(3)
3. Strength	4	7	7	18	11
4. Finishing	12	16(3)	20(2)	48*	30
5. Durability	3	13	8	24	14
6. Shrinkage	-	4	7	11	6
7. Colour	24(2)	20(2)	13(3)	57(2)	41(2)
8. Texture	-	2	6	8	4
9. Grain	4	1	7	12	8

*1 Taking the analysis a step further, the individual species

was stability, with colour second and workability third.

As for the individual end-use segments, in order of importance,

- i. joiners - stability, colour and finishing
- ii. shopfitters - stability, colour and workability
- iii. furniture manufacturers - stability, workability and colour
- iv. ship/boat builders - workability, stability and grain
- v. D.I.Y. - colour, finishing and stability
- vi. turners - workability, stability, and colour
- vii. merchants - stability, finishing and workability
- viii. pattern makers - stability, workability and shrinkage
- ix. box makers - workability, finishing and durability.

I must make it clear that stability, as a term, is a rather general one and I have found that some end-users describe as stable a specie which satisfies their needs in general, therefore any use of the above information should be very careful how it uses stability as a property concept.

-IV. Essential species (Q.11): It was interesting to see whether end-users believed that there are certain species which are absolutely essential to their operations. From Table 5.2/8, we see that only merchants of all the end-use segments, show a slight belief that there are such essential species, this is not surprising since they are stockists of species which are re-sold to manufacturers and therefore they have to stock a wider variety of species than the other segments. On the other hand, the fact that most of the respondents

*1 (continued) used by the respondents were analysed viz. the reasons for using such species. From Appendix 5.2/2 we can see the three main reasons for using each specie, the relative importance of the various use reasons is calculated on an overall segment basis and equal importances are noted.

Table 5.2/8. Essential species

Are there any essential species	All	End-use segments									No answer
		J	S	F	S/B	DIY	T	M	P	B	
Yes	52	17 (37)	5 (31)	13 (45)	1 (50)	3 (50)	2 (50)	9 (60)	2 (50)	-	-
No	74	29 (63)	11 (69)	16 (55)	1 (50)	3 (50)	2 (50)	6 (40)	2 (50)	4 (100)	-
No answer	-	-	-	-	-	-	-	-	-	-	-
All	126	46	16	29	2	6	4	15	4	4	-

did not believe in essential species can be interpreted as a certain degree of flexibility in choosing species for their operations. As for the species which were regarded as essential, we see (Appendix 5.2/3) that overall Brazilian Mahogany was thought as being the most essential one, with Teak second, Iroko and Afrormosia third and African Mahogany fifth in importance. Of the individual segments, there were sufficient replies only for joinery, furniture manufacturers and merchants, and the individual preferences followed the overall results.

It is also obvious, Table 5.2/9, that the present range

Table 5.2/9. End-use segments requirements and the available species

The requirements are met	All	End-use segments									No Answer
		J	S	F	S/B	DIY	T	M	P	B	
Very satisfactory	79	31	8	18	1	2	1	12	4	2	-
Average	34	11	7	6	1	4	1	3	-	1	-
Very unsatisfactory	3	1	-	1	-	-	1	-	-	-	-
No answer	10	3	1	4	-	-	1	-	-	1	-
All	126	46	16	29	2	6	4	15	4	4	-

of species is very sufficient in satisfying the needs of all the end-use segments. Which means that any problems with supplies are due to availability of specific species and not of any genuine lack of appropriate material.

5.2.2.5. Type of production (Q.8 and 9): Of all the respondents only furniture manufacturers correlated with standardised production, Table 5.2/10. Also if we allow for the small number of replies in the box makers segment we can say that this segment also shows some correlation with standardised production.

Table 5.2/10. Type of Production by end-use segments.

<u>Type of production</u>	<u>All</u>	End-use segments									<u>No answer</u>
		<u>J</u>	<u>S</u>	<u>F</u>	<u>S/B</u>	<u>DIY</u>	<u>T</u>	<u>M</u>	<u>P</u>	<u>B</u>	
Standardised	15	3	-	9	-	-	-	-	1	2	-
Specified	57	23	13	8	-	2	4	6	1	-	-
Both	50	20	3	10	2	4	-	7	2	2	-
No answer	4	-	-	2	-	-	-	2	-	-	-
All	126	46	16	29	2	6	4	15	4	4	-

On the other hand, there were no replies in the shop-fitting, ship/boat building, D.I.Y., turnery and merchants segments which stated that the entire production was only standardised. Further analysis showed that customers did not influence the choice of species when the production was standardised, while even for specified production the influence of the specifiers was not conclusive. From those who replied that their customers did have some influence on their choice of Tropical Hardwood species, it was expected to find that merchants were highly influenced by their customers (because

of the nature of their operations), as for the manufacturing segments an analysis of the main species used by the respondents proved that such firms were using high value species like Rosewood, Teak, etc.

As for the specifiers themselves, from Table 5.2/11. we see that architects were the most frequently mentioned specifiers, with designers second. The rather large number of

Table 5.2/11. The influence of specifiers on the choice of species

<u>The specifiers</u>	<u>All</u>	Degree of influence			
		<u>A lot</u>	<u>Sometimes</u>	<u>Very little</u>	<u>No answer</u>
Architects	45	15	24	6	-
Builders	7	-	3	4	-
Designers	15	4	7	4	-
Government/local authorities	6	-	3	3	-
Contractors	4	1	1	2	-
General Public	8	2	3	3	-
No answer	22	6	4	12	-
All	107	28	45	34	-

no answers does not affect the conclusions because it consists mainly of respondents who thought that their customers had only a very small influence in their choice of species.

It is also obvious that architects are the only specifiers with some influence on the choice of species.

5.2.2.6. The decision making unit(Q.12): As it has become apparent from previous questions, there is some difference between the manufacturing end-use segments and those which provide service(s). From Table 5.2/12, we see that

Table 5.2/12. The decision making unit of end-use segments

The decision making unit	All	End-use segments										No Answer	
		J (%)	S (%)	F (%)	S/B	DIY (%)	T	M (%)	P	B			
Deliberation of various departments	51	21 (46)	9 (56)	12 (41)	2	2 (13)	2	1	1	1	1	1	-
One manager	51	18 (39)	3 (19)	10 (34)	-	4 (67)	-	12	2	2	2	2	-
One technician	13	5 (11)	2 (12.5)	4 (14)	-	-	1	1	1	1	1	1	-
No answer	11	2	2	3	-	-	1	1	1	1	1	1	-
All	126	46	16	29	2	6	4	15	4	4	4	4	6

for the majority of D.I.Y. and merchants managers have been responsible for the purchases of Tropical Hardwoods, while for firms like joiners, shopfitters and furniture manufacturers the decision is more of a joint responsibility.

5.2.2.7. Number of suppliers (Q.13): One of the most revealing results came from the analysis of the question about the number of suppliers used by the respondents. From Table 5.2/13, we see that the majority of the respondents used more than four suppliers in order to purchase their raw

Table 5.2/13. Number of suppliers by end use segments

<u>Number of suppliers</u>	<u>All</u>	<u>J</u>	<u>S</u>	<u>F</u>	<u>S/B DIY</u>	<u>T</u>	<u>M</u>	<u>P</u>	<u>B</u>	<u>No Ans.</u>
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
Only one	5	4 (9)	-	1 (3)	- -	- -	- -	- -	- -	-
Only two	15	3 (6)	3 (19)	4 (14)	- 2 (33)	- -	- -	2 (50)	1	-
Only three	25	10 (22)	3 (19)	5 (17)	- -	1	3 (20)	1	2	-
Four & over	69	26 (57)	7 (44)	19 (66)	2 3 (50)	1	11 (75)	-	-	-
No answer	12	3	3	-	- 1	2	1	1	1	-
All	126	46	16	29	2 6	4	15	4	4	-

material, it appears that there is no real customer loyalty. A further analysis of those respondents who used only one supplier, proved that their operations were rather specialised dealing mainly with small quantities of high value species (mainly Rosewood). It was thought as interesting to examine the number of suppliers viz. the rank of importance given to the Tropical Hardwoods by the respondents, Table 5.2/14 shows that only those who ranked Tropical Hardwoods first showed a relative customer loyalty. (The above findings apply equally to all end-use segments, Appendix 5.2/4.)

Table 5.2/14. Overall importance of Tropical Hardwoods and number of suppliers

<u>Rank of Tropical Hardwood</u>	<u>All</u>	Number of suppliers				<u>No Answer</u>
		<u>1</u> (%)	<u>2</u> (%)	<u>3</u> (%)	<u>4+</u> (%)	
First [adj.%]	28	3 (50) [15]	3 (21) [15]	3 (15) [15]	11 (22) [55]	8
Second	21	1 [6]	3 (21) [18]	3 (15) [18]	10 (20) [58]	4
Third	23	-	3 (21) [13]	6 (30) [26]	14 (27) [61]	-
Minor	31	1 [3]	5 (37) [17]	8 (40) [27]	16 (31) [53]	1
No answer	4	1	-	-	-	3
All	107	6	14	20	51	16

5.2.2.8. Factors causing concern about their supplies (Q.14): On an overall basis (Table 5.2/15), the quality of the present supplies causes more concern to all

Table 5.2/15. Factors of concern

	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>M & C</u>	<u>Rating</u>
1. Dimension	19(2)	10	9	38(3)	29(3)
2. Grading	15(3)	19(1)	10(3)	44(2)	30(2)
3. M/C	8	14(3)	11(2)	33	21
4. Service	8	8	9	25	17
5. Quality	33(1)	17(2)	15(1)	65(1)	49(1)
6. Price	3	-	-	3	2
7. Machining	-	-	1	1	1
8. Shipping delays	-	2	-	2	1
9. No concern	6	-	-	6	6

the end-users, with grading second and availability of appropriate dimensions third. As for the individual segments, all the segments followed the overall results except for pattern makers who ranked moisture content first, with quality second and grading third and also furniture manufacturers instead of inappropriate dimensions as the third concern had moisture content in its place.

5.2.2.9. Level of contact(s) (Q.15 and 16): Two different levels of contact were examined.

-I- Within each segment (Q.15): It was obvious that the vast majority of the respondents did belong to a Trade Association or Federation (Table 5.2/16), only those in the D.I.Y. and turnery segments showed a negative ratio. Those of the

Table 5.2/16. End-use segments and membership rate

	<u>All</u>	<u>Yes</u>	<u>No</u>	<u>No answer</u>
Joinery	46	37 80%	7	2
Flooring	-	-	-	-
Shopfitters	16	11 69%	3	2
Furniture	29	23 79%	3	3
Ship/Boat	2	1 50%	1	-
D.I.Y.	6	2 33%	4	-
Turners	4	1 25%	3	-
Merchants	15	12 80%	2	1
Patterns	4	2 50%	1	1
Box	4	3 75%	1	-
All	126	92	25	9

respondents who belonged to an Association/Federation said that such a membership provided them with both information and opportunities to come into contact with others in the

same line of business (Tables 5.2/17, 5.2/18).

Table 5.2/17. End-use segments and provision of information by their respective memberships

	<u>All</u>	<u>Yes</u>	<u>NO</u>	<u>No answer</u>
Joinery	37	32 86%	5	-
Flooring	-	-	-	-
Shopfitters	11	8 73%	2	1
Furniture	23	21 91%	2	-
Ship/Boat	1	1 100%	-	-
D.I.Y.	2	2 100%	-	-
Turner	1	1 100%	-	-
Merchants	12	11 92%	1	-
Pattern	2	2 100%	-	-
Box	3	3 100%	-	-
No answer	-	-	-	-
All	92	81	10	1

Table 5.2/18. End-use segments and contact with people in their trade

	<u>All</u>	<u>Yes</u>	<u>No</u>	<u>No answer</u>
Joinery	37	31 84%	6	-
Flooring	-	-	-	-
Shopfitters	11	9 82%	2	-
Furniture	23	20 87%	3	-
Ship/Boat	1	-	1	-
D.I.Y.	2	1 50%	1	-
Turners	1	1 100%	-	-
Merchants	12	10 83%	2	-
Pattern	2	2 100%	-	-
Box	3	3 100%	-	-
No answer	-	-	-	-
All	92	77	15	-

-II. Magazine/Journal subscriptions (Q.16): Except for the pattern makers all the other respondents appeared to have a trade publication to which at least one member of their firm was a subscriber (Table 5.2/19.)

Table 5.2/19. End-use subscription rate

	<u>All</u>	<u>Yes</u>	<u>No</u>	<u>No answer</u>
Joinery	46	37 80%	7	2
Flooring	-	-	-	-
Shopfitters	16	10 63%	4	2
Furniture	29	22 76%	3	4
Ship/Boat	2	2 100%	-	-
D.I.Y.	6	4 66%	2	-
Turners	4	2 50%	1	1
Merchants	15	12 80%	2	1
Pattern	4	-	3	1
Box	4	3 75%	1	-
No answer	-	-	-	-
All	126	92	23	11

5.2.2.10. Policy for a price increase of a specie (Q.17): Of the alternatives presented in the questionnaire, Table 5.2/20 shows that most of the respondents would employ a policy of

Table 5.2/20. Policies to a Price increase

<u>Policies</u>	<u>No. of responses</u>	<u>Adj %</u> %
Wait and see	25	26
Purchase immediately	8	8
Start looking for another supplier	42	44
Switch to another specie	9	9
Buy at new price	11	16
No answer	12	-
All	107	100

"shopping around", with wait-and-see policy next and the remaining policies received an almost equal number of replies in third place. As for the different segments, it was found that there was an identical to the overall distribution preference for all the end-use segments irrespectively. It is interesting to note that the respondents did not seem ready to accept a price increase without first establishing whether it was a genuine one (that is, the result of increase in the price of the imported material) or the result of their suppliers revised pricing policy. A further analysis of the policy viz. the corresponding importance of Tropical Hardwoods was performed, Table 5.2/21; it is apparent that policies of wait-and-see and looking for another supplier come high with

Table 5.2/21. Policy to a Price increase and overall importance of Tropical Hardwoods.

<u>Policies</u>	Importance of Tropical Hardwoods					
	<u>All</u>	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Minor</u>	<u>No answer</u>
Wait and see	25	12	6	4	3	-
Purchase immediately	8	-	4	4	-	-
Look for other supplier	42	14	10	7	11	-
Switch to other specie	9	-	-	3	5	1
Buy at new price	11	-	-	4	7	-
No answer	12	2	1	1	5	3
All	107	28	21	23	31	4

respondents whose firms used Tropical Hardwoods as their main raw material (first or second), while policies of switching to another similar specie or buying at the new price correlate with low importance of Tropical Hardwoods.

These results help to draw some interesting conclusions,

i. the less important Tropical Hardwoods are to a firm's operations the more prepared the firm is to buy at the new price or/and to switch to another specie with similar properties, this indicates a degree of flexibility in the operations of such firms; unfortunately all the other possible cross tabulations did not provide any insight into the differences of those firms who will adopt a policy of buying at the new price and those who will switch to another specie,

ii. the more important Tropical Hardwoods are to the operations of a firm, the more sophisticated the response of such a firm will be to a price increase, one factor which is important is that such firms tend to stock more raw material than those who do not use as much Tropical Hardwoods, therefore they can afford to wait longer and examine the market situation before making another purchase. Finally their risk of making the wrong decision is higher than firms who do not use the same amount of the material.

Finally, the above policies were analysed viz. the number of supplies used by the respondents, it was found that ALL of the respondents who replied that their policy will be to start lookin for another supplier, purchased their Tropical Hardwoods from more than 4 suppliers.

5.2.2.11. Sources of information for new suppliers (Q.18):

In looking for a new supplier, Table 5.2/21, experience is the predominant factor which will lead to a decision, this applies for all the end-use segments irrespectively. When a further analysis was performed of sources of information and Trade membership, it was found that all the sources of information

did correlate to such membership except of experience, this was not surprising because experience is more of a personal than a professional group factor.

Table 5.2/22. Source of choosing a new supplier

<u>Source of information</u>	<u>Number of responses</u>	<u>Adj %</u>	<u>Total %</u>
Trade directories	24	22	16
Representatives	33	31	21
Magazines and journals	15	14	10
Exhibitions	3	3	2
Experience	78	73	51
No answer	-	-	-
All	153*	-	100

(the respondents were allowed to state more than one source used. Therefore the total does not agree with the overall total. Adj % = out of 107. Total % = out of 153.)

5.2.12. Services required (Q.19): Of the services asked to choose from, overall (Table 5.2/23) price competitiveness was found to be by far the most important one, with ability to meet delivery dates second, quality of supplies third, ease of contact with people in authority fourth and reputation/long standing of the supplier fifth. As for the individual segments, it was found that price competitiveness was ranked as first by all the segments, and that there was consistency with the overall results for the main reasons only some differences appeared in fourth and/or fifth ranking.

Table 5.2/23. Services Desirable.

	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>	<u>Fifth</u>	<u>M & C</u>	<u>Rating</u>
1. Price competitive	68(1)	17(2)	26(1)	16(1)	16(2)	143(1)	87(1)
2. Delivery date	15(2)	49(1)	18(2)	10(3)	6	98(2)	36(2)
3. Quotation	3	5	7	5	3	23	8
4. Advice	-	3	2	5	2	12	3
5. Ease of contact	3	3	12	10(3)	13	41(4)	13(4)
6. Discounts	-	-	2	-	2	4	1
7. After sale service	-	1	5	3	-	9	2
8. Replacement	-	1	3	7	5	16	4
9. Credit	-	3	8	6	4	21	5
10. Range of stock	-	-	1	3	2	6	1
11. Quality	14(3)	17(2)	16(3)	16(1)	16(2)	79(3)	30(3)
12. Reputation	3	7	3	8	18(1)	39(5)	12(5)

5.2.3. End-users and lesser-known species.

5.2.3.1. Rate of experience (Q.22): Of all the respondents, 48 (45%) had some experience with lesser-known species (species which they regarded as lesser-known), leaving 59 (55%) who did not try any such species in the past five years.

-I. The end-use segments and trial of lesser-known species:

For each of the segments (Table 5.2/24), it was found that none of them correlated strongly with trial of lesser-known species,

Table 5.2/24. End-use segments and trials of lesser-known species

	<u>All</u>	<u>Past experience</u> (%)	<u>No past experience</u> (%)
Joiners	46	20 (44)	26 (56)
Flooring	-	-	-
Shopfitters	16	7 (47)	9 (53)
Furniture	29	15 (54)	14 (46)
Ship/Boat	2	1 (50)	1 (50)
D.I.Y.	6	3 (50)	3 (50)
Turners	4	3 (75)	1 (25)
Merchants	15	7 (47)	8 (53)
Pattern	4	-	4 (100)
Box	4	1 (25)	3 (75)
No answer	-	-	-
All	126	57	69

the respondents of each segment were almost equally divided between those with experience and those without any past experience; the only exceptions were the pattern makers, none of whom had any past experience.

-II. Trial of lesser-known species and importance of Tropical Hardwoods to the operations of a firm: We see from Table 5.2/25 that those of the respondents who ranked Tropical Hardwoods high, were more likely to have tried a lesser-known

Table 5.2/25. Overall experience with lesser-known Tropical Hardwood species and importance of Tropical Hardwoods to the overall operations.

<u>Experience with lesser-known species</u>	<u>Importance of TRHD</u>					
	<u>All</u>	<u>First (%)</u>	<u>Second (%)</u>	<u>Third (%)</u>	<u>Minor (%)</u>	<u>No Answer</u>
Yes [%]	48	18 (64) [38]	11 (52) [23]	9 (39) [19]	9 (31) [19]	1
No %	59	10 (46) [17]	10 (48) [17]	14 (61) [24]	20 (69) [34]	5
No answer	-	-	-	-	-	-
All	107	28	21	23	29	6

specie. All the individual segments follow the above stated trend, Table 5.2/26.

-III. Trial of lesser-known species as proportion of the final product made out of Tropical Hardwoods: The above observations are strengthened if we look at the proportion of the final product which is made out of Tropical Hardwoods and the past experience of the respondents with lesser-known species. The larger (Table 5.2/27) the final proportion which is made out of Tropical Hardwoods, the greater the likelihood that a firm have had some experience with lesser-known species.

Table 5.2/26. End-use segment experience with lesser-known species and importance of Tropical Hardwoods to the overall operation

Enc-use segments	All	Y e s						N o					
		First	Second	Third	Minor	Major	answer	First	Second	Third	Minor	Major	answer
Joinery	46	7	6	2	5	-	-	6	7	6	7	-	-
Shopfitting	16	4	-	2	1	1	-	3	-	2	2	1	1
Furniture mf.	29	6	3	4	2	-	-	5	2	2	4	1	1
Ship/boat bld.	2	-	-	1	-	-	-	-	-	-	1	-	-
D.I.Y.	6	2	1	-	-	-	-	-	-	1	1	1	1
Turners	4	-	3	-	-	1	-	-	-	-	-	-	-
Merchants	15	1	3	1	2	-	-	-	2	3	3	-	-
Pattern mk.	4	-	-	-	-	-	-	-	1	1	2	-	-
Box mk.	4	1	-	-	-	1	-	-	-	1	1	-	-
No answer	-	-	-	-	-	-	-	-	-	-	-	-	-
All	126	21	16	10	10	3	-	14	12	16	21	3	3

Table 5.2/27. Past experience with lesser-known species and proportion of final product out of Tropical Hardwoods.

	<u>Less than 30%</u> Row Col.	<u>Between 30% and 60%</u> Row Col.	<u>Over 60%</u> Row Col.	<u>Total</u>
Past experience with lesser known species % total	27 56% 38%	12 25% 50%	9 19% 75%	48
No experience with lesser-known species % total	42 71% 59%	12 20% 50%	3 5% 25%	57+2* 59

* 2 missing from observation.

-IV- Trial of lesser-known species and whether there are essential species to the operations of a firm: Those of the respondents who believed that there are certain essential species to their operations (Table 5.2/28) showed a low degree of likelihood in trying a lesser-known specie, this is not surprising since such firms are more dependent on a very small number of species.

Table 5.2/28. Essential species and experience with lesser-known species.

	<u>Past experience</u>		<u>No past experience</u>	
		Row		Row
Essential Hardwoods	26	54%	17	31%
	col.	60%		40%
No essential Hardwoods	22	46%	37	69%
	col	37%		63%

5.2.3.2. Past experience with lesser-known species

-I- Lesser-known species tried (Q.23): Table 5.2/29 shows the species which the respondents mentioned as being the lesser-known species which they used/tried in the past 5 years. It is interesting to note that species like Iroko, Ramin, Idigbo, Keruing, Agba etc. were included in the list. These rather surprising inclusions of species which would not 'normally' be considered as lesser-known and which have been imported into the U.K. for some time now and in considerable quantities, raises the question of what constitutes a lesser-known specie. In the introduction of the text an attempt was made to define what this study regards as a lesser-known specie, but it is apparent from the present replies that the

Table 5.2/29. Lesser-known species tried.

Anyan (2) ^{a/}	Hyedua (1)	Padang (3)
Agba (2)		Padoule (3)
Antiroba (1)	Idigbo (3)	Pau Marfin (4)
	Iroko (2)	Punah (1)
Bahia (1)		
Berlinia (1)	Jelutong (1)	Quaruba (1)
Black Bean (92)		
Bagciacu (2)	Koto (4)	Ramin (1)
Bagtican (1)	Kauvula (3)	
Bongossi (1)	Kaudamu (1)	Swetinia (1)
Badi (1)	Keruing (1)	
		Tan Oak (1)
Cocobolo (1)	Lauan (3)	Taun (3)
Calophyllum (1)	Lignum (1)	Tulipwood (1)
	Lauro (2)	
Dahoma (1)	Limba (209)	Virola (6)
Danta (1)		
Dakua (1)	Malas (1)	Wenge (3)
Damanu (1)	Makore (2)	
Doussie (2)	Muminga (1)	Yang (1)
	Massaranduba (2)	
Freiso (7)	Mninga (1)	
Geronggang (2)	Niangon (1)	
Guarea (2)		
Grumixava (1)	Osea (1)	

^{a/} Number in brackets represents the number of mentionings

term involves far more complex problems of individual perception and information. It is obvious that the respondents between them had very different ideas about lesser-known species, what the replies indicate is that even those species which are regarded by one segment or firm as well established ones might be promoted as lesser-known species to other segments or individual end-users.

Unfortunately it was not possible to establish whether each of the species mentioned as lesser-known ones was regarded as a success or a failure by the end-users, although provision was made to state whether the specie is still used by the respondents, the answers could not be used as an absolute determinant of success or failure, they only provide some indications about the present rate of use of lesser-known species.

Of the species mentioned by the respondents, Freijo was the most frequently mentioned specie (7 respondents), the other frequently mentioned species were Virola by 6 respondents, Pau Marfin and Koto by 4 respondents, Wenge, Taun, Padang, Padouk, Lauan, Kauvula and Idigbo by 3 respondents, while the rest of the species were mentioned either by two or one respondent only. Of those species (Table 5.2/30), most of them originated from West Africa (19 of 54), then species from South America (14), then South-East Asia (12) and last the Pacific (9).

Table 5.2/30. Origin of the lesser-known species

<u>Producing Area</u>	<u>Number of Species</u>	<u>As a % of the total</u>
West Africa	19	35
South East Asia	12	22
The Pacific	9	17
South America	<u>14</u>	<u>26</u>
Total	54	100
	====	====

-II. Sources of information of lesser-known species

(Q.23-ii-): The most frequently mentioned source of information was "approaches by a merchant", Table 5.2/31, the only other source which received any considerable number of replies

Table 5.2/31. Sources of information about lesser-known
Tropical Hardwood species.

<u>Sources of information</u>	<u>No. of responses</u>	<u>Total %</u>
Approached by merchants	28	58
Own research unit	2	4
Recommended by trade association	-	-
Literature	2	4
Ads. in the Press	-	-
Competition	1	2
Approaching merchants because of problems	10	21
Specified	5	11
No answers	-	-
All	48	100

was "initiative of the end-users" themselves during periods of supply problems. What is important to note is that not one of the respondents mentioned recommendation from their trade association as the source of information, if we bear in mind the high membership rate of the respondents then it becomes obvious that such Trade Associations do not play an active part in the promotion of lesser-known species and even more they do not even inform their members about such introductions. Taking the analysis a step further we see that although most of the respondents said that their Trade membership allowed them to come into contact with other people in the same trade, only once competitors were mentioned as a source of information.

-III. Reasons for trying a lesser-known specie (Q.23-iii-):
Overall, (Table 5.2/32) the main reason for trying a lesser-known

Table 5.2/32. Reasons for trying a Lesser-known specie

	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>M & C</u>	<u>Rating</u>
1. Price advantage	16(1)	13(1)	4	33(1)	25(1)
2. Credibility	-	2	5(3)	7	4
3. Shortage	8(3)	6(3)	1	15	12
4. Suitability	12(2)	6(3)	7(2)	25(2)	19(2)
5. Trends/fashion	2	2	3	7	6
6. Size/form	1	4	3	8	5
7. Resemblance	1	9(2)	14(1)	24(3)	13(3)
8. New	-	-	-	-	-
9. Specified	1	-	1	2	2

specie was its price advantage over other established species with similar properties, job suitability was second in importance and resemblance to an established specie together with shortage of usual material third. The analysis clearly proved that price advantage and job suitability were the only really important reasons for trying a lesser-known specie and that resemblance to an established specie is a strong contributing factor. It is obvious that unless the price advantage is very considerable, any other incentive will be the result of a combination of perceived benefits from the lesser-known specie. A single reason advantage does not therefore guarantee that the end-user will try a lesser-known specie.

As for the individual segments, the three main reasons for trying a lesser-known specie were (in order of importance):

- (a) joiners: price advantage, resemblance to an established specie, shortage of usual material,
- (b) shopfitters: price advantage, resemblance to an established specie, suitability for a specific job,

(c) Furniture manufacturers: price advantage, suitability for a specific job, resemblance to an established specie,

(d) Turners: suitability for a specific job, resemblance to an established specie, shortage of usual material,

(e) non-importing merchants: price advantage, suitability for a specific job, shortage of usual material.

(As for the other segments the replies did not provide any meaningful conclusions.) It is interesting to note that only turners did not place price advantage among the important reasons for trying a lesser-known specie, instead they appeared to be more concerned with the property characteristics of any lesser-known specie. By looking back at the size, production etc. of the turners who replied to the questionnaire, we see that most of these firms employed less than 10 people, Tropical Hardwoods made less than 30% of their final product and all their production was specified; therefore, we can say that the more customer orientated and specialised a firm is the less important price becomes in its considerations about trying 'new' species.

(i) Reasons for trying a lesser-known specie and the decision making unit of a firm: When the reasons for trying a lesser-known specie were analysed viz the DMU of a firm the findings were,

(a) if the decision to try a lesser-known specie is a matter of deliberation between the various departments of a firm, then although resemblance to an established specie

received a larger number of replies (in absolute terms) than any other reason, when the replies were weighted the above reason came third in importance to both price and suitability for a specific job,

(b) when the decision is the responsibility of one manager, then price advantage is the most important reason, in fact it received both the larger number of replies and when the replies were weighted it came well ahead of suitability for a specific job and resemblance to an established specie (those two were of equal importance), and

(c) in the case of a technician being responsible, resemblance to an established specie was found to be the predominant reason, with price advantage second and suitability for a specific job third.

We can see from the above findings that the DMU could have a major importance in the design of a promotional strategy because the priorities of the different DMUs are different.

(ii) Reasons for trying a lesser-known specie and areas of concern about the state of supplies: It was regarded as important to establish the areas of the trade which cause more concern and the respective reasons for trying a lesser-known specie, it was assumed that efforts to look for and try lesser-known species are a direct result of factors of concern about the state of the trade. From the analysis we have,

(a) concern about unsuitable dimensions correlates equally with price advantage, suitability for a specific job and resemblance to an established specie, as reasons for trying a lesser-known specie,

(b) concern about grading standards, correlates strongly with price advantage, then with resemblance to an established specie and finally with suitability for a specific job,

(c) concern about the moisture content of the material supplied, correlates firstly with suitability for a specific job, and then with shortage of usual material and price advantage,

(d) concern about the services provided by the suppliers correlated with price advantage as the main reason for trying a lesser-known specie, then comes suitability for a specific job and third resemblance to an established specie, and,

(e) concern about the quality of the present supplies, correlates equally with price advantage and resemblance to an established specie.

(iii) Reasons for trying a lesser-known specie and the proportion of the final product made out of Tropical Hardwoods:

When those two questions were analysed together it was found that the three main reasons, irrespective of the proportion of Tropical Hardwoods in the final product, were again price advantage, suitability for a specific job and resemblance to an established specie. But it is interesting to note that the smaller the percent of the final product that is made out of Tropical Hardwoods, the greater the emphasis is on a single reason for trying a lesser-known specie and in this case it is price advantage. When the final product consists between 30 and 60% of Tropical Hardwoods then price advantage and suitability for a specific job are of equal importance and when the Tropical Hardwoods are the main material used (over 60%) then price advantage, suitability for a specific job and

resemblance to an established specie are all equally important.

It is expected that the smaller the percent of the product that is made out of Tropical Hardwoods the greater the flexibility of the firm to adapt its production to 'new' species, also the risks involved are smaller compared with a firm which mainly uses Tropical Hardwoods. Therefore, we can say that the more important that Tropical Hardwoods are to the production of the final product, the more factors will have to be considered before a decision is taken whether or not to try a lesser-known specie.

-IV. Samples and trial parcels (Q.23-iv-v-): Before a full order for a lesser-known specie was placed it was important to know whether the respondents had any experience with the properties of the specie.

(i) Samples (Q.23-iv-): Of those who tried a lesser-known specie, Table 5.2/33, most of them had some form of samples before placing a full order, most of the samples were

Table 5.2./33. Samples received before order and form of such sample.

<u>Whether received samples</u>	<u>Form of samples</u>				
	<u>All</u>	<u>Rough</u>	<u>Own form</u>	<u>Other Pre-fin.</u>	<u>No answer</u>
Yes	38	33	2	3	-
No	10	-	-	-	10
No answer	-	-	-	-	-
All	48	33	2	3	10

in the form of rough sawn timber. It is important to note that there were 10 respondents who said that they did not

receive any samples, the only explanation which I could give is that there must have been a great deal of confidence on the part of the end-users to their suppliers in order to place an order for material which they had never seen before. It is also noticeable that only a very small number of samples (2) were in the form in which the final product was going to be.

(ii) Trial parcels (Q.23-v-): As for trial parcels, Table 5.2/34, about twice as many respondents received such parcels, but most of them were at the price which they had to pay for a full order (only in 7 out of 33 cases the trial parcel was at reduced price). It was also found that of those

Table 5.2/34. Trial Parcels and price of such Parcels of Lesser-known Tropical Hardwood species.

<u>Whether received a trial Parcel</u>	<u>All</u>	<u>Price of Trial Parcel</u>		
		<u>Reduced price</u>	<u>Usual price</u>	<u>No answer</u>
Yes	33	7	26	-
No	15	-	-	15
No answer	-	-	-	-
All	48	7	26	15

who did have a trial parcel, 24 out of the 33 found that the subsequent material (full order) was of the same quality as the trial parcel. This ratio might be positive but surely is not a very satisfactory one if we consider that in every 2.5 introductions of lesser-known species the trial parcels are of different quality than the subsequent consignments (usually of inferior quality).

-V- Help, advice and information (Q.23-vi-vii-): During the initial states of trial there is need for accurate

information and fast provision of advice.

(i) Help and advice (Q.23-vi-): Overall, 14 of the 48 respondents were pleased with the amount and quality of advice and help which they received from the merchants who introduced the lesser-known specie to them. It is obvious that the rate is not satisfactory, at this particular time there should be maximum effort by the merchants to provide as much help and advice as possible. The credibility of such services should also be high.

(ii) Information (Q.23-vii-): As for overall information, 20 of the 48 respondents said that the available information was not adequate and it was also difficult to find the appropriate information.

If we now combine the answers given to both of the above questions, Table 5.2/35, we see that only 13 respondents said that they were pleased with every aspect of help and information at the same time, while on the other extreme 16 were not pleased on any of the above.

Table 5.2/35. Help, Advice and Information to those with lesser-known specie experience.

<u>Information</u>	<u>All</u>	<u>Help / Advice</u>		
		<u>Pleased with</u>	<u>Not pleased</u>	<u>No answer</u>
Available and accessible	28	13	15	-
Not available and accessible	20	1	16	3
No answer	-	-	-	-
All	48	14	31	3

5.2.3.3. No past experience with lesser-known species

-I- (Q.24): Of the reasons for not trying a lesser-known specie, Table 5.2/36., the most important one was that the usual material was at an ample supply and at reasonable price,

Table 5.2/36. Reasons for not trying any lesser-known species

	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>M & C</u>	<u>Rating</u>
1. Past experience	9	7	3	19	14
2. Ample supply	19(1)	9(2)	4	32(2)	26(1)
3. Wait-Policy	1	6	5	12	7
4. Customer resist	11(3)	6	11(2)	28(3)	20(3)
5. Not suitable	13(2)	8(3)	12(1)	33(1)	23(2)
6. No information	2	12(1)	10(3)	24	13

second in importance was that nothing suitable had been offered and third that there was resistance by the customers. If we look only at the main (first) reasons we see that ample supply of the usual material comes ahead of all other reasons, but what is interesting to note is the fact that insufficient information was mentioned often but was not ranked high enough to be one of the first three most important reasons. This reaffirms the finding (section 2.2.6.2.), that insufficient information is not a main reason but it is a serious contributing reason for not trying any lesser-known species.

As for the individual end-use segments, the reasons for not having tried a lesser-known specie were found to be (in order of relative importance to each segment),

(a) joiners: ample supply of usual material at reasonable price, nothing suitable had been offered, resistance by customers and insufficient information,

- (b) shopfitters: nothing suitable had been offered, ample supply of usual material at reasonable prices, past experience,
- (c) furniture manufacturers: ample supply of usual material at reasonable price, nothing suitable had been offered, customer resistance,
- (d) merchants: insufficient information, past experience, ample supply of usual material at reasonable prices, and,
- (e) pattern makers: of equal importance, ample supply of usual material at reasonable price and nothing suitable had been offered.

It is apparent that there is some difference between the manufacturing end-use segments (like furniture manufacturers, etc.) and the non-manufacturing ones (like merchants).

(i) Reasons for not trying lesser-known species and the decision making unit (DMU) of the firm: Depending on the DMU of the firm the reasons for not trying any lesser-known species were

(a) in the case of various departments deliberating before a decision was reached, nothing suitable was found to be the main reason, with ample supply at reasonable prices second and lack of sufficient information third,

(b) when the decision was the responsibility of one manager, then ample supply at reasonable prices was found to be the most important reason, with customer resistance second and experience third, and,

(c) when a technician was responsible, then the only reason which proved to be important was that nothing suitable had been offered.

It is interesting to note that customer resistance was more important for managers who also placed great importance on their past experience as a reason for not trying any lesser-known species. On the other other hand, technicians appeared to be more concerned with the property suitability of the lesser-known species. The above findings are not surprising in themselves but illustrate the need for a carefully designed promotional strategy which will take into account such factors.

(ii) Reasons for not having tried any lesser-known species and the proportion of the final product made out of Tropical Hardwoods: The first thing which was obvious was that all the respondents whose final product consisted of more than 60% from Tropical Hardwoods, did have some past experience with lesser-known species. Of the other respondents, the analysis showed that

i. when the proportion was less than 30% then, no suitable suggestions and ample supply of usual material were the most important reasons, with customer resistance third,

ii. when the proportion was between 30% and 60% then, ample supply of usual material was slightly more important than lack of any suitable suggestions, with past experience third,

If we look closer at the data we realise that all the reasons received the same number of replies, what therefore separates them is the intensity of preference or importance, i.e. the number of higher rankings. Which means that any attempt to change the attitudes of the end-users should be based on more than one factor, one which will be the main focal point and one or two which will supplement the main one.

(iii) Reasons for not having tried any lesser-known species and the aspects of the supply situation which cause most concern:

By examining the answers to those two questions together, it was found that all the aspects of concern correlated positively with the fact that nothing suitable had been offered to the respondents. This, I believe, shows that the respondents who did not try any lesser-known species might consider doing so in the future, given the 'right' circumstances. In other words it shows that the attitudes of the respondents were not 'negative' towards the concept of lesser-known species, but that they were 'sceptical' of the suitability of the offered species, their long-term potential and benefits to their operations.

-II- Reasons which might induce trial of lesser-known species in the future (Q.25): Of all the respondents, Table 5.2/37, price was the most frequently mentioned reason for trying a lesser-known specie in the future, with suitability

Table 5.2/37. Reasons which might induce trial of a Lesser-known Tropical Hardwood specie.

<u>Reason of trial</u>	<u>No. of replies</u>	<u>Adj. %</u> (of 59)	<u>Total adj. %</u> (141)
Price advantage	40	68	28
Credibility of supplier	9	15	6
Shortage of usual material	30	51	21
Good service	3	5	2
Suitability for a specific job	33	56	23
Market trends/fashion	4	7	3
Resemblance to an established specie	12	20	9
Size/form suitability	8	14	6
Specified	2	3	1
No answer	2	-	-
All	143	-	100

(The total does not agree with the overall total because the respondents were allowed to mention more than one reason.)

for a specific job second and shortage of usual material third. It is important to bear in mind that no order of preference was possible to be established. As for the individual end-use segments, it became obvious that price advantage, shortage of usual material and job suitability were all equally important reasons for all the segments of the market. It is also interesting to note the very low importance of reasons like credibility of the supplier and provision of good service. If we now sub-segment the end-users into manufacturers and non-manufacturers, we have that overall the first have placed job suitability and the second price advantage as the most important reason.

(i) Reasons inducing future trial and the DMU: For all the DMUs the three most important reasons for trying a lesser-known specie in the future, were price advantage, job suitability and shortage of usual material. The difference was on the relative importance placed on those three reasons, managers placed price advantage as first, technicians placed job suitability first and in the case of deliberation between the various departments of the firm job suitability was found to be the most important reason for trying a lesser-known specie in the future. It is obvious that the above findings are consistent with the respective answers of those respondents who had some experience with lesser-known species.

(ii) Reasons inducing future trial and the proportion of the final product made out of Tropical Hardwoods: As in the case of those who did have some experience with lesser-known species, we have that, the less important Tropical Hardwoods are to the final product the less important price becomes as an inducive factor and the more important the job suitability becomes (Table 5.2/38).

Table 5.2/38. Reasons which might induce future trial of Lesser-known species and the proportion of the final product which is made out of Tropical Hardwoods.

<u>Inducing reason</u>	<u>All</u>	<u>Proportion out of Tropical Hardwoods</u>			<u>No Answer</u>
		<u>Less than 30%</u>	<u>Between 30% & 60%</u>	<u>Over 60%</u>	
Price advantage	40	23	9	2	6
Credibility of supplier	9	8	1	-	-
Shortage of usual material	30	22	5	2	1
Good service	3	3	-	-	-
Suitability for a specific job	33	26	5	2	-
Market trends and fashion	4	4	-	-	-
Resemblance to an established specie	12	7	3	2	-
Size/form suitability	8	6	2	-	-
Specification	2	2	-	-	-
No answer	2	1	-	1	-
All	143	102	25	9	7

-III. Reasons for not having tried lesser-known species in the past and those which might induce trial in the future:

The analysis of the reasons which are expected to induce trial viz those which have deterred trial in the past provided some important indications of intentions. Even in the cases where customer resistance and a policy of wait-and-see were mentioned as the main reasons for not having tried any lesser-known species, still the respondents appeared prepared to try such species under the 'right' circumstances. It is also worth mentioning that specification by the customers did

not prove to be an important consideration in the decision to try a lesser-known specie, in fact it was very low in importance. All the reasons which deterred trial of lesser-known species in the past correlated positively with the three main inducive reasons (i.e. price advantage, shortage of usual material and job suitability); only insufficient information did not correlate with the three main reasons, instead it correlated strongly only with price advantage.

5.2.3.4. Lesser-known species and the future (Q.26,27, 28 and 29).

-I- Premium price for usual material (Q.26): On an overall basis most of the respondents replied that they were not prepared to pay a premium price for their usual material, Table 5.2/39. Even between those of the respondents who did not have any past experience with lesser-known species the majority (38 out of 59) said that they would be prepared to start looking for alternatives once their materials become too expensive (the problem though remains, what is "too expensive").

Anyway, of those who said that they preferred to pay premium price for their material than looking for alternative material, the majority were respondents without any experience with lesser-known species and the policy of such firms would be to start looking for other suppliers, what is implied is that they believe that such price increases are not the result of a genuine demand-supply situation but instead that they are the result of short term speculative policies by one of their suppliers (we should not forget that the vast majority of the respondents used more than one supplier).

Table 5.2/39. Premium prices, experience with lesser-known species and policies for price increases.

<u>Policy for</u> <u>Price increase</u>	<u>All</u>	<u>Pay premium price</u>		<u>Not pay premium price</u>	
		<u>Past</u> <u>experience</u>	<u>No past</u> <u>experience</u>	<u>Past</u> <u>experience</u>	<u>No past</u> <u>experience</u>
Wait and See	25	4	5	7	8
Purchase immediately	8	-	1	4	3
Looking for supplier	42	4	9	9	18
Switch specie	9	-	1	4	4
Buy at new price	11	4	-	3	2
No answer	12	4	1	3	3
<u>All</u>	<u>107</u>	<u>16--(33)---</u>	<u>--17</u>	<u>30--(68)---</u>	<u>---38</u>
			<u>4</u>		<u>2</u>

If we look at those with a buy-now policy, we see that only one was prepared to pay premium price for his usual material, this proves that there are end-users who see price increases as the start of more increases to come. The same applies to those with a switch-to-another-specie policy. What is important in those two response groups, is the fact that the replies show a very satisfactory degree of consistency.

As for the individual segments, Table 5.2/40, we have that most of the segments show an overall reluctance to pay

Table 5.2/40. Premium Price by end-use segment

Whether prepared to pay premium price	All	End-use segments										No ans.
		J	S	F	S/B	DIY	T	M	P	B		
Yes	43	16	3	10	-	3	1	8	2	-	-	
No	74	27	11	17	2	3	2	7	2	3	-	
No answer	9	3	2	2	-	-	1	-	-	1	-	
All	126	46	16	29	2	6	4	15	4	4	-	

premium price for their material. The only segment which showed only the slightest preference in paying premium price were the merchants, this is not surprising since the nature of their operations is to provide specific material and therefore must stock species which are demanded by their customers at any price.

(i) Premium price and the firms' DMU: It is apparent, Table 5.2/41, that managers were more reluctant to pay premium price for their material. Something that is the result of more confidence in their ability to find the same material at lower prices and the larger amount of information which

Table 5.2/41. Premium Price and the DMU

<u>Whether prepared to pay premium price</u>	<u>All</u>	<u>The D.M.U.</u>			
		<u>Various depts.</u>	<u>One manager</u>	<u>One technician</u>	<u>No answer</u>
Yes	33	18	6	4	5
No	68	20	39	5	4
No answer	6	2	2	2	-
All	107	40	47	11	9

they have of the market prices, compared to technicians, who because of lack of confidence in dealing with suppliers prefer a 'safer' approach of buying the material of which they are certain of its suitability at any price. This particular question makes clear the fact managers are more prepared to take risks than technicians or groups of people in the timber end-use trade.

(ii) Premium price and the importance of Tropical Hardwoods to the overall operations of the firm: From Table 5.2/42 the analysis of those two variables appears to give rather confusing results. There is no reason why only those of the

Table 5.2/42. Premium Price and importance of Tropical Hardwoods to the overall operation.

<u>Whether prepared to pay premium price</u>	<u>All</u>	<u>Importance of TRHD to the overall operation</u>				<u>No answer</u>
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Minor</u>	
Yes	33	8	12	6	7	-
No	68	20	9	17	22	-
No answer	6	-	-	-	2	4
All	107	28	21	23	31	4

respondents who ranked Tropical Hardwoods as second in importance to their operations should be more prepared to pay premium prices (a number of further cross tabulations did not provide any meaningful explanation). If we had to draw some conclusions, then we could say that as the importance of Tropical Hardwoods declines the less prepared (in relative terms) the respondents appeared to be to pay premium price for their usual material. This latter point illustrates once more the greater flexibility of those firms which do not rely exclusively on Tropical Hardwoods.

(iii) Premium price and the proportion of the final product made out of Tropical Hardwoods: Again, from Table 5.2/43 the lack of flexibility in the operations of those respondents whose product(s) is mainly out of Tropical Hardwoods, is apparent, the more important Tropical Hardwoods were to the final product, the more prepared (in relative terms) the respondents were to pay premium price for their supplies.

Table 5.2/43. Premium price and proportion of final product made out of Tropical Hardwoods.

<u>Whether prepared to pay premium price</u>	<u>All</u>	<u>Proportion out of TRHD</u>						
		<u>Less than 30%</u>		<u>Between 30% and 60%</u>		<u>Over 60%</u>		<u>No answer</u>
			<u>(Adj.%)</u>		<u>(Adj.%)</u>		<u>(Adj.%)</u>	
Yes	33	22	(32)	6	(28)	5	(42)	-
No	68	46	(68)	15	(72)	7	(58)	-
No answer	6	3		3		-		-
<u>All</u>	<u>107</u>	<u>71</u>		<u>24</u>		<u>12</u>		<u>-</u>

-II- Modification of the production methods (Q.27): It was very surprising to find such a large majority (69%) of the respondents who replied that their firm would be prepared

to modify its production methods, given certain conditions, Table 5.2/44. This proves once again that end-users do not have 'negative attitudes' towards lesser-known species (something which is the favourite excuse of the importers/merchants for the failure of many introductions), the real problem lies

Table 5.2/44. Modify Production (overall)

		Whether prepared to modify production		
		Yes	No	No answer
All	107	74	28	5

in overcoming the existing reluctance of the end-users. As for individual end-use segments, Table 5.2/45, most of them are equally prepared to modify their production, with D.I.Y. and merchants showing a greater readiness to do so because they are not manufacturers and therefore the only implications in their operations will be the mix of species stocked.

Table 5.2/45. Modify Production by end-use segments

Whether prepared to modify production	All	End-use segments									
		J	S	F	S/B	DIY	T	M	P	B	No ans.
Yes	89	34	10	18	1	5	3	13	2	3	-
No	28	9	4	9	1	1	-	2	2	-	-
No answer	9	3	2	2	-	-	1	-	-	1	-
All	126	46	16	29	2	6	4	15	4	4	-

(i) Modification of the production methods and the DMU of the firm: Table 4.2/46 shows that when managers are responsible for such decisions then they are more likely to

Table 5.2/46. Modify Production and the D.M.U.

<u>The D.M.U.</u>	<u>All</u>	Whether prepared to modify Production		
		Yes	No	No answer
Various departments	40	29	10	1
One manager	47	37	8	2
One technician	11	4	5	2
No answer	9	4	5	-
All	107	74	28	5

initiate such changes compared to technicians or joint responsibility groups. I believe that the underlying reason for the above finding is that managers are less production orientated than technicians and more cost-benefit orientated.

(ii) Modification of the production methods - importance of Tropical Hardwoods to the overall operations and the proportion used in the final product: As we see from Tables 5.2/47, 5.2/48, all the respondents showed an equal readiness in modifying their production irrespective of the importance of

Table 5.2/47. Modify Production and proportion of final product out of Tropical Hardwoods.

<u>Proportion of final product out of TRHD</u>	<u>All</u>	Whether prepared to modify production		
		Yes	No	No answer
Less than 30%	71	48	18	5
Between 30% and 60%	24	17	7	-
Over 60%	12	9	3	-
No answer	-	-	-	-
All	107	74	28	5

Tropical Hardwoods to their firms.

Table 5.2/48. Modify Production and importance of TRHD

to the overall operations

<u>Whether pre- pared to modify production</u>	<u>All</u>	<u>Importance of TRHD to overall operations</u>				
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Minor</u>	<u>No answer</u>
Yes	74	19	15	17	20	3
No	28	8	6	6	8	-
No answer	5	1	-	-	3	1
All	107	28	21	23	31	4

-III- Intentions of promoting lesser-known species to their customers (Q.28): Overall, Table 52/49, most (74%) of the respondents said that they would be prepared to promote a

Table 5.2/49. Promotion intentions (overall)

Whether prepared to promote Lesser-known species

	<u>Yes</u>	<u>No</u>	<u>No answer</u>
All	75 (Adj.%) 74	26 (Adj.%) 26	6

lesser-known specie to their customers as long as its suitability was assured. Of all the end-use segments furniture manufacturers were most prepared to promote lesser-known species to their customers (Table 5.2/50), while in relative terms D.I.Y.

Table 5.2/50. Promotion intention by end-use segments

<u>Whether pre- pared to promote lesser-known species</u>	<u>All</u>	<u>End-use segments</u>									<u>No Ans.</u>
		<u>J</u>	<u>S</u>	<u>F</u>	<u>S/B</u>	<u>DIY</u>	<u>T</u>	<u>M</u>	<u>P</u>	<u>B</u>	
Yes	83	28	10	23	1	3	3	9	3	3	-
No	34	15	4	4	1	3	-	6	1	-	-
No answer	9	3	2	2	-	-	1	-	-	1	-
All	126	46	16	29	2	6	4	15	4	4	-

and merchants were more reluctant in initiating any such efforts, the reasons are the difference in the nature of their operations. That is, the last two segments are suppliers to specific demands while the other segments are the manufacturers of a finished product.

(i) Promotion of lesser-known to customers and the firm's DMU: We can see from Table 5.2/51 that the more customer/market orientated the DMU of a firm is the more likely it is for the firm to promote a lesser-known specie to its customers. In the case of one manager being responsible for such decisions he would be more confident about carrying out an appropriate promotional programme than a technician would be, while a technician will place greater emphasis on quality and production and lesser-known species represent a great risk to such activities.

Table 5.2/51. Promotion intentions and the D.M.U.

<u>The D.M.U.</u>	<u>All</u>	Intention of promoting a lesser-known specie		
		Yes	No	No answer
Various departments	40	26	11	3
One manager	47	38	7	2
One technician	11	5	6	-
No answer	9	6	2	1
All	107	75	26	6

(ii) Promotion of a lesser-known specie to customers and the overall importance of Tropical Hardwoods to the firm: On the same lines as the corresponding analysis between paying premium price and overall importance of Tropical Hardwoods, we see from Table 5.2/52 that those of the respondents who

Table 5.2/52. Intention of Promoting Lesser-known specie and Importance of Tropical Hardwoods to the overall operations.

<u>Whether prepared to promote lesser-known species</u>	<u>All</u>	<u>Importance of TRHD to overall operation</u>				
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Minor</u>	<u>No answer</u>
Yes	75	21	14	17	20	3
No	26	6	7	6	7	-
No answer	6	1	-	-	4	1
All	107	28	21	23	31	4

ranked Tropical Hardwoods second in importance, showed a relative reluctance in promoting lesser-known species to their customers. The only explanation which I can give is that such firms do not have the overall production flexibility of those which use Tropical Hardwoods in smaller quantities and also do not possess the expertness of the firms who rely on Tropical Hardwoods to promote the species. The above explanation suffers from the fact that we do not really have any **measure** of relative importance of Tropical Hardwoods between the respondents (an attempt to do so, question 7, provided very unsatisfactory rate of response and rather confusing replies).

(iii) Promotion of a lesser-known specie to customers and the proportion of the final product made out of Tropical Hardwoods: It appears from Table 5.2/53 that the smaller the proportion of the final product which is made out of Tropical Hardwoods, the more prepared the respondents were to promote a lesser-known specie to their customers. The reason in my opinion is that the less the proportion is the less conspicuous the Tropical Hardwood specie which is used is, therefore

it becomes easier to replace one specie for another without much opposition.

Table 5.2/53. Promotion intentions and the Proportion of the final product made out of Tropical Hardwoods

<u>Proportion of final product out of TRHD</u>	<u>All</u>	<u>Intention of Promoting a lesser-known specie</u>		
		<u>Yes</u>	<u>No</u>	<u>No answer</u>
Less than 30%	71	51	14	6
Between 30-60%	24	17	7	-
Over 60%	12	7	5	-
No answer	-	-	-	-
All	107	75	26	6

-IV- Modification of the production and intentions of promoting a lesser-known specie to the customers: Here, the two above questions are analysed together, Table 5.2/54. The analysis is on a segment basis and it proves that most of the respondents were prepared to modify their production and at the same time promote a lesser-known specie to their customers. This is undeniable evidence that end-users are not as unprepared to try new species as the importers/merchants like to believe that they are. As for the individual segments, it is interesting to see that ^{all} of the turners and the box makers were prepared to modify their production and promote lesser-known species; it is also interesting to see that the two non-manufacturing segments (D.I.Y. and non-importing merchants) answered either positively or negatively on both of the questions. As for the main manufacturing segments, joiners appear more prepared than the others, but only slightly, to modify production and promote lesser-known species.

-V- Future plans about trying any more lesser-known species (Q.29): I do not believe that the replies to the last question of the questionnaire represent what is really going to happen in the short-term, the assumption behind all the answers was that things will remain as they are at the moment, something which nobody can guarantee. The replies provide some indication of intention but not of actual future action, therefore the results of the analysis of this question should be viewed as an extension of the respondents experiences with lesser-known species and not necessarily as their irrevocable future policies. Finally the analysis of this question is based on an overall basis because it was thought that an individual segment approach would only increase the already explained inherent bias of the responses.

From Table 5.2.55, we see that most of the respondents (79%) said that they were not prepared or planning to try any more lesser-known species in the near future.

Table 5.2/55. Future plans with lesser-known species

		Whether planning to try more lesser-known species			
		Yes	No	Not sure	No answer
		(Adj)	(Adj)	(Adj)	
All	107	14 (13%)	83 (79%)	8 (8%)	2

(i) Future plans about lesser-known species and the firms' DMU: Consistent with previous results, we have from Table 5.2/56, the firms whose DMU was mainly one manager (or a person with managerial responsibilities) they were more willing to try more lesser-known species in the near future.

Table 5.2/56. Future plans of trying lesser-known species and the firms' DMU

<u>The D.M.U.</u>	<u>All</u>	Future plans of trying lesser-known specie			
		<u>Yes</u>	<u>No</u>	<u>Not sure</u>	<u>No answer</u>
Various departments	40	4	34	2	-
One manager	47	9	32	4	2
One technician	11	1	8	2	-
No answer	9	-	9	-	-
All	107	14	83	8	2

(ii) Future plans about lesser-known species and the effect that past experience has: It was expected that past experience would correlate to future lesser-known specie trials, but what could not be determined was whether the past experience was favourable or not. In any case, from Table 5.2/57 we see that future plans to try lesser-known species are related to any past experience with such species, it is also expected that of those who said that they will try more species the majority had favourable experiences with other lesser-known species.

Table 5.2/57. Past experience with lesser-known species and plans for future trials

<u>Future trials</u>	<u>All</u>	Past experience		
		<u>Yes</u>	<u>No</u>	<u>No answer</u>
Yes	14	11	3	-
No	83	31	52	-
Not sure	8	4	4	-
No answer	2	2	-	-
All	107	48	59	-

(iii) Future plans about lesser-known species and the proportion of the final product out of Tropical Hardwoods: It is interesting to see from Table 5.2/58 that the smaller the proportion of the final product is made out of Tropical Hardwoods, the more prepared the respondents were to try more lesser-known species. I believe that this relative readiness to try more species is the result of the low degree of risk that such firms undertake compared to firms which rely exclusively on lesser-known species.

Table 5.2/58. Future plans of trying lesser-known species and proportion of final product made out of Tropical Hardwoods.

<u>Future plans about trying lesser-known species</u>	<u>All</u>	<u>Proportion of final product out of TRHD</u>			
		<u>Less than 30%</u>	<u>Between 30-60%</u>	<u>Over 60%</u>	<u>No answer</u>
Yes	14	7	5	2	-
No	83	57	16	10	-
Not sure	8	5	3	-	-
No answer	2	2	-	-	-
All	107	71	24	12	-

(iv) Future plans about lesser-known species and the overall importance of Tropical Hardwoods to the firm: From Table 5.2/59 it is obvious that the more important the Tropical Hardwoods are to the overall operations of a firm the more prepared the firm is to try more lesser-known species. These results seem to be contrary to those drawn in section 3.4.6.4., but as it has been explained before, the importance is a relative measure of the various materials used. That is, Tropical Hardwoods are the major material used but the

Table 5.2/59. Future plans of trying lesser-known species and importance of Tropical Hardwoods to the overall operation

<u>Whether plans to try lesser-known species</u>	<u>All</u>	<u>Importance of TRHD to the overall operation</u>				
		<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Minor</u>	<u>No answer</u>
Yes	14	7	2	4	1	-
No	83	20	16	17	27	3
Not sure	8	1	3	2	2	-
No answer	2	-	-	-	1	1
All	107	28	21	23	31	4

final product is made out of a wide variety of materials, each of which is not very significant but all together make the major proportion of the final product.

5.2.4. The end-use segments and their suppliers

In any promotional effort, the existing relationship between the parties involved will determine the appropriate strategy to be employed. The questions 20 was aimed at clarifying the opinions that end-users have about their suppliers. As an overall observation (Appendix 5.2/5), we can say that the majority of the respondents were satisfied (either slightly or strongly) with their suppliers, only very few said that they were not satisfied at all (strongly) with some aspect of the service they received.

Obviously, such statements have the inherent problem of not defining or explaining what the terms satisfactory, average and unsatisfactory mean, therefore each respondent might place a slightly different meaning to those words.

This presents difficulties in the interpretation of the results, especially of the replies in the average position of the grid. In order to overcome this problem certain pre-suppositions are made,

- i. when the ultimate aim is the successful introduction of a lesser-known specie, average positions on the grid are regarded as needing to be improved,
- ii. if the position on the grid representing very satisfactory opinions has received more replies than any other position, then the service is regarded as satisfactory (the reverse for unsatisfactory replies),
- iii. any service which has received 10% and over unsatisfactory replies needs special attention.

Based on the above, the four services which appeared to be regarded as being relatively unsatisfactory in the minds of the respondents, were: (a) provision for technical advice for problem solving, (b) technical after sales service, (c) replacement facilities, and (d) wide range of sizes and species stocked.

While those of the services which were regarded as satisfactory were: (a) ability to meet delivery dates, (b) prompt and comprehensive quotations, (c) easy of contact with a person in authority, (d) quality of supplies and (e) dealing with account.

It is important to consider the implications of the above findings in respect of lesser-known specie introductions. In relative terms those of the services which were not regarded as satisfactory are the ones which are more important during an introduction of a lesser-known specie.

It is expected that during such periods of promotion there will be no problems with delivery dates because the 'new' material is available in stock, the quality of the material is as good as possible and as for services like dealing with accounts, ease of contact with people in authority and prompt-comprehensive quotations are more important during every day transactions than during periods of promotion. If we turn our attention to those services which were not thought to be satisfactory, we realise that all of them are very essential to the promotion of lesser-known species, especially provision for technical advice for problem solving and technical after sales advice, while replacement facilities are essential in case the customer has serious problems with the new material and replacement is required urgently, finally the importance of a wide range of sizes has become obvious in the analysis of the merchants survey.

Therefore, it is apparent that the areas of interaction which are most associated with promotion and acceptance of lesser-known species are the ones which are regarded by the end-users as less satisfactory and therefore should be improved in order for the promotional efforts to have the desired outcome

5.2.5. General interest.

The three questions 21 were designed to test the relative opinions of end-users and importing merchants on three statements about trends in the trade (further analysis will take place in the final chapter of this paper), (Appendix 5.2/6).

5.2.5.1. Mechanical and technical advances: The majority of the respondents either believed that such advances

have enlarged the number of acceptable species or they were not certain (77%). At the same time, there are very few strong opinions about the statement (either negative or positive). I believe that this is due to a certain lack of information about such advances, because as it has been discussed in the literature section (section 4) such advances do exist and can help the wider use of Hardwood species.

5.2.5.2. Usage trends: Relatively few respondents disagreed strongly with the statement that there is a trend towards prepared material and away from solids. But the majority appeared to have either a slightly positive or negative opinion (55 out of 101) and in general the replies did not provide a definite conclusion. An attempt to analyse the position of the opinions viz. the end-use segment of the respondents proved fruitless.

5.2.5.3. Differences between material on offer: It is interesting to see that although the two extreme positions received an almost equal number of replies, the agree slightly position received twice as many replies as the corresponding disagree position. It is very difficult to establish the intensity of the opinions on the 'slightly' position of the grid, but if we accept that they represent a real reflection of opinion then we can say that there is no great difference between the material offered by the various Hardwood merchants. This was verified by the findings of the analysis performed with questions about the number of suppliers used and the position of the opinion, Table 5.2/60. The majority of those who believed (strongly or slightly) that there is no difference

Table 5.2/60. Perceived difference between the suppliers and the number of suppliers used

<u>Number of suppliers</u>	<u>All</u>	<u>Perceived no difference of suppliers</u>				
		<u>Agree</u> <u>Strongly</u> <u>Slightly</u>	<u>Not</u> <u>certain</u>	<u>Disagree</u> <u>Slightly</u> <u>Strongly</u>	<u>No</u> <u>answer</u>	
Only one	6	-	-	1	5	-
Only two	14	2	3	6	2	1
Only three	20	3	2	5	4	1
Four and over	51	15	2	3	4	4
No answer	16	2	-	1	6	-
<u>All</u>	<u>107</u>	<u>22</u>	<u>7</u>	<u>16</u>	<u>21</u>	<u>6</u>

between the material on offer by the various merchants,
purchase their material from four different suppliers, while
those who perceived some differences between suppliers are
more loyal to one or two suppliers only.

CHAPTER 6

THE SALES-STAFF SURVEY

Again the same process as in the two preceding chapters is followed.

6. SALES STAFF SURVEY

6.1. Findings:

The conclusions from the analysis of the replies to this survey, were :

(a) The physical and technological characteristics of any particular specie are not a matter of individual perception. There was almost uniform agreement between the respondents on such characteristics, furthermore their replies were identical to those stated by the various timber manuals. There was also strong agreement over the appropriate use(s)/ applications(s) of the species.

The above findings applied both for well-established and lesser-known species. .

(b) There was very little agreement over the advantages/disadvantages of lesser known species compared to well-established ones, neither there were uniform opinions about the reasons/objectives behind the introduction of such species. Even the outcome of the introductions appeared to be in doubt.

(c) Familiarity with the specie(s), through stocking it for long periods of time, eliminates or narrows-down the differences of opinions. The longer a specie is stocked, the more uniform the opinions were.

The particular value of the above findings will become apparent in the following section.

6.2 Aim:

This questionnaire was designed to establish whether the people involved in the promotion and/or selling of well-established and Lesser-known Tropical Hardwood species have uniform ideas/opinions about the nature of the product and the objectives to be achieved.

6.3 Design of the questionnaire:

The questionnaire was comprised of six questions about physical characteristics, reasons of introductions, market aimed at, comparison against existing specie, the eventual outcome of the introduction and finally the reasons behind the outcome. The species tested were Padang (Nyatoh), Braz. Mhy. and Kuvula, of those Braz. Mhy. was regarded as an established specie while Padang and Kuvula were judged to be lesser-known ones with which the respondents all had promotional experience at the time of introduction. In the section where individually were compared against an existing one, it was decided that for reasons of uniformity and comparability of the data it was better to assign a specific specie against which to compare the species under investigation. Therefore Padang v Meranti, Braz.Mhy. v Afr. Mhy, Kuvula v Ramin were the pairing, such a decision was the result of consultation with people involved in the initial decision of introduction. A reply-paid envelope was provided. Copy of the questionnaire is attached, Appendix 6/1.

6.4 Sample frame:

In order to derive meaningful answers it was felt that a sample from one Co. should be used, so that promotional activities will be uniform. Therefore the sample comprises of 13 individuals of which 2 were responsible for the decision to introduce such specie. 8 were desk salesmen of all the branches of the particular firm (covering the whole of UK) and 3 were travelling salesmen particularly responsible for introducing new species into the market.

6.5 Analysis of the sales staff survey

The data was processed manually. Individual questions answers were analysed and then tabulated.

6.5.1 Physical characteristics On

Colour	12 of 13 respondents agreed
Grain	12
Density	11
Drying	12
Machinability	12
Finishing	13

and furthermore the answers were compared against the ones given by the relevant literature, (Trada, 1978). It was found that like between the respondents the only areas with any significant deviation was Density, but I believe that this is a particularly undefined (or not universally defined the same)

area, therefore some degree of difference can be tolerated. Which means that there is both a high level of agreement between the respondents and in comparison to literature.

6.5.2. Reasons of introduction

The only consensus comes from the fact that Fashion and reasonable freight are regarded the least important reasons for all three species. But this is rather a negative statement, on the positive side there is no significant agreement over any of the reasons either on an overall or individual basis. Which could be interpreted as lack of a formulated marketing strategy.

6.5.3. End-users for whom the species were aimed

There is an overwhelming consensus about the markets that the species should be introduced or used into. This consensus is both between respondents and in regard to literature, (Trada, 1978).

6.5.4. Species comparisons

Now, looking into the comparison with a competing specie. There is a considerable degree of agreement about Braz. Why with all 13 agreeing on Price, Supply conditions and Shipping conditions; while 11 Work done before shipment, job suitability, properties and grading (what is notable is the fact that at no position three different opinions were recorded, that is it was either B & S or W & S answers in those cases of not an absolute agreement). While for Padang there was only one absolute agreement over Price with 12 agreeing on shipping conditions and 11 on work done before shipment in

all other cases no agreement was recorded since the opinions were more or less equally divided between B, S & W. Finally for Kauvula there were 12 agreeing on job suitability with the rest providing no agreement at all. In my opinion that scaling down of consensus is attributed to the level of familiarisation that the respondents had with each specie. That is, Braz. Mhy has been stocked by the particular firm for a longer period of time than Padang which in terms was dealt longer than Kauvula. This lack of agreement is obviously detrimental to an effective promotion of any specie since it does not provide the appropriate information of the selling strong-points of the specie. I believe that eventually, through feed-back from end-users the respondents crystallised a uniform idea about the specie (i.e. Braz. Mhy). Something that surely should be the reverse of what is happening (reverse flow of communication).

6.5.5. The eventual outcome

Again, looking at the level of the degree of agreement regarding the eventual outcome of the introduction we can see the relevance of the time factor. Regarding Braz. Mhy there was an absolute agreement while with Padang 7 to 5 for and 8 to 4 for Kauvula. This could be interpreted as lack of set goal figures about the performance of an introduction for every stage of the introduction.

6.5.6. Reasons contributions to the eventual outcome

From the reasons contributing to the eventual outcome we realise that the picture is again confused. On an overall basis (for all three species combined). Competing material seem to have a slightly higher importance than the rest, but looking at individual species there seems to be no consensus whatsoever (even for Braz. My), the main and contributing reasons are dispersed too widely amongst the various alternatives to present any reliable indication. Which means that corrective action is difficult to be decided.

6.5.7. Level of Agreement

Finally, although a number of cross tabulations were constructed and analysed it was not possible to find a degree of "agreement" between respondents above 32% ($42 \div 132 \times 100$) which could hardly be considered satisfactory.

CHAPTER 7

PROPOSALS FOR A MARKETING PLAN

In this chapter the implications of the findings from the surveys are used in order to make some suggestions about a marketing plan.

7. PROPOSALS FOR A MARKETING PLAN

There are two main findings of the present research which provide the foundations on which the proposed marketing plan has been based. These are :-

(1) The term or what constitutes a lesser-known specie is a matter of personal perception. Therefore, it is very close to the definition that Rogers & Shoemaker (1971) have given to what constitutes an innovation "An innovation is an idea, practice or object perceived as new by an individual, and therefore it is the individual's perception which matters, not whether the idea is objectively new or not."

(2) It became obvious that firms (merchants/importers) did not possess a structured form of procedures which were followed and there were no sets of goals and objectives which had to be fulfilled during the various stages of the introduction and promotion of lesser-known species.

The proposals are designed to provide a sequential plan of action which should be followed during the introduction of lesser-known species. The underlying factor is an attempt to control the marketing factors and take advantage of environmental opportunities rather than reacting to outside events, "Innovations" (in this case lesser-known species) are most readily adopted and implemented in times of organisational crisis..., a state of crisis though does not itself generate

good innovative ideas." (Shepard, 1967). That is to initiate change rather than reacting to it in a state of crisis.

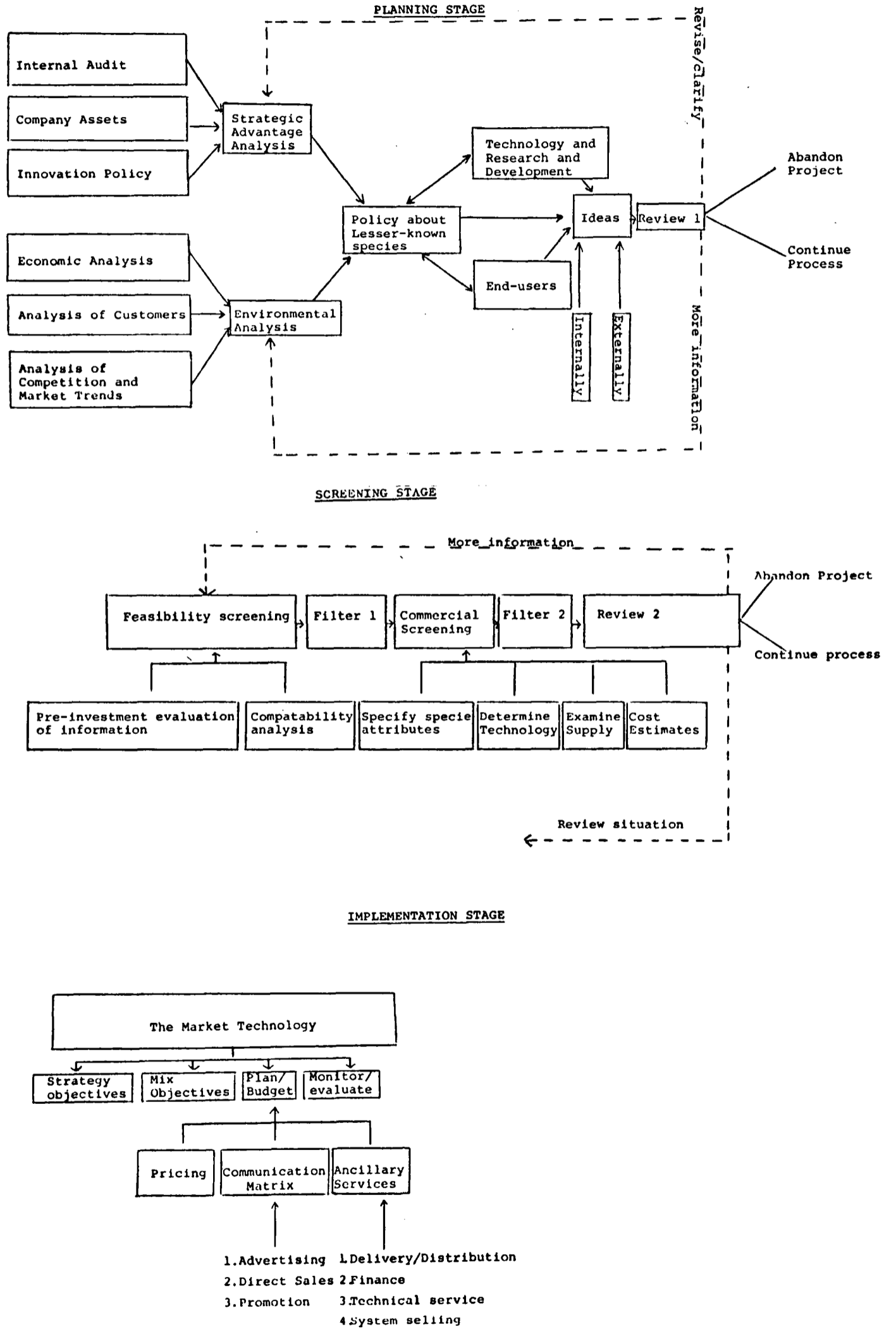
The whole marketing process is viewed from the point of view of the merchant. It is he who has to decide whether or not to promote any lesser-known species and which one(s) to promote. Furthermore, he has to persuade his customers to use the specie and in the long run become a well established and accepted specie. The text describes the various perceptions of lesser-known species, but the proposed marketing plan is specifically relevant to species new to both the particular merchant and his customers.

The proposed approach is diagrammatically presented in Figure 7/1. The three stages¹ are not independent of each other, on the contrary they are closely related and follow a sequential order. The results of each action will determine the best strategy to be followed in the next stage. The design of the plan is the outcome of the analysis of the three surveys carried out and some use of general marketing theory is made (King, 1973 and Boyd & Massy, 1972 and Fisher, 1976). Some might argue that an approach like the one proposed here will be time consuming and could not be applied for every case. But not all of the steps have to be performed every time a decision has to be taken. Once the basic criteria and guidelines are determined, then the only need is to monitor the performances and evaluate the progress over time. This will provide management with the opportunity to concentrate on creative planning on a pre-determined set of objectives.

¹ i.e. planning, screening and implementation.

Figure 7/1.

The Stages of the Marketing Plan



Let us now briefly examine the proposed stages of the marketing plan :

1) Planning Stage

This stage is designed to determine whether the organisational structure of a particular merchant/importer is capable of dealing with the problems involved in the promotion of lesser-known species.

It also proposes some ways of generating ideas about potentially successful species. In order to achieve those objectives certain steps are regarded as

necessary : - a - Analysis of the strategic advantages :

The firm has first to determine its own particular

advantages over its competitors. This can be done by,

- i - analysing its financial position (Company Assets),

-ii- examining the efficiency with which its marketing tools are currently employed, (Internal Audit), and

-iii- stating clearly its policy regarding new products (Innovation Policy).

-b- Analysis of the environmental factors : At any

particular point in time the firm should analyse those environmental factors which affect the outcome of the

introduction of lesser-known species. The more obvious

ones are, economic (Economic Analysis), customers

(Customer Analysis) and competition (Competition analysis & Market trends).

-c- The findings of the above analyses should then be combined with past experience of customer acceptance of lesser-known species (End Users) and the influence that technology might have on the acceptance of such species (Technology and Research & Development). The merchant

will now be in a position to set out a clearly defined policy about future introductions of lesser-known species. It should decide whether or not his firm is capable of dealing with such introductions and also determine the circumstances under which such introductions should take place.

-d- If the decision is to look for new species the merchant has two distinct alternatives. He can either do it through his own research department (Internally) or following approaches from outside sources (Externally)

-e- Once a number of potential species have been proposed the merchant should then review the state of the process before going any further (Review 1). Now depending on the findings of such a review, there are four alternative avenues of action, -i- to search for more information about the various environmental factors affecting the introduction, -ii- to go back and re-examine the proposed species whether the reasons of their choice are consistent with policies of the firm, -iii- to abandon the project altogether because no real possibilities of success are envisaged, or -iv- to continue the process.

2. Screening stage:

Now a number of lesser-known species is put forwards. This stage is designed to screen the potential of each one of the alternatives and derive the best one. The one with the highest likelihood of being accepted by the market. Again some distinctive steps have been identified : -a- Feasibility screening : Here some preliminary screening is performed in

order to eliminate those of the proposed species which are non-starters. This is done mainly through desk analysis (Pre-investment evaluation of information) and evaluation of the marked potential of each specie compatibility analysis.

-b- Commercial screening - Through further examination of the expected rate of return of each specie (Filter 1.) the most "attractive" alternatives are now examined against specific requirements. Such analysis must concentrate its attention on areas like, -i- the property characteristics of the species (Specify specie attributes), -ii- the need for technological changes or modifications of the production methods to accommodate the new specie (Determine Technology), -iii- the supply situation in the Tropics; that is occurrence in the tropical forests and the reliability of any processing done in the places of production (Examine Supply), and -iv- estimate any possible additional costs, production or/and administrative (Cost Estimates).

-c- The result of this analysis will be to determine the specie with the highest possibility of being accepted by the market. (Filter 2). There is always the possibility that a clearly superior specie will not be found. Then the executives should review the situation again (Review 2). There are four alternatives, -i- to accept the best of the alternative species and re-examine its potential by gathering more information about the specie, -ii- review the market trends, economic situation and Company policy, -iii- abandon the project before any

further losses occur, or, -iv- continue the process because because the chosen specie has all the crudentials of a possible success.

3. Implementation stage :

At this stage the decision has been taken to promote a specific lesser-known specie. The actions which should now take place depend entirely on the specie, its degree of newness, the target market etc., therefore there is no single approach. Nevertheless, some useful steps will be, -a- By examining the reasons of introduction some marketing objectives should be set and the strategy which will best achieve those objectives should be determined (Strategy/Objectives). -b- Then the objectives for each marketing activity which is to be employed should be set out. Such objectives must reflect the stage of the adoption process (Mix Objectives). -c- Based on those objectives, a marketing plan must then be designed and the allocation of resources to each element of the plan must be decided (Plan/Budget). Of the various marketing activities which were tested during this research, the ones which were found as more influencial were, -i- pricing of the new specie, -ii- the communication matrix, which in turn consists of advertising, direct sales and promotional activities and -iii- ancillary services, like delivery, finance, technical service, system selling etc. -d- Then the plan is put into operation. Once the marketing activities are set into operation a continous process of monitoring and evaluating their progress should take place. The criteria of such activity must be closely related to the original strategy and mix objectives. Finally, close examination of the market

and the technological changes should take place in order to establish any potential environmental opportunities or threats to the introduction of the specie.

The whole process has been found to be a ONE merchant ONE customer affair and it is also proposed that at any time there should be only one lesser-known specie promoted by a merchant. A more extensive analysis of the various stages and the reasons which lead me to propose those stages can be found in the following pages.

7.1 PLANNING STAGE (FIGURE 7/2)

7.1.1. STRATEGIC ADVANTAGE ANALYSIS

Through a careful examination of various factors each merchant should determine his particular advantages and strengths over his competitors. This means that as well as looking outward it is also wise to look inward. The analysis and examination of such factors will provide information on the determination of company objectives and on the formulation of marketing strategies. The following are just some of the most obvious areas of investigation.

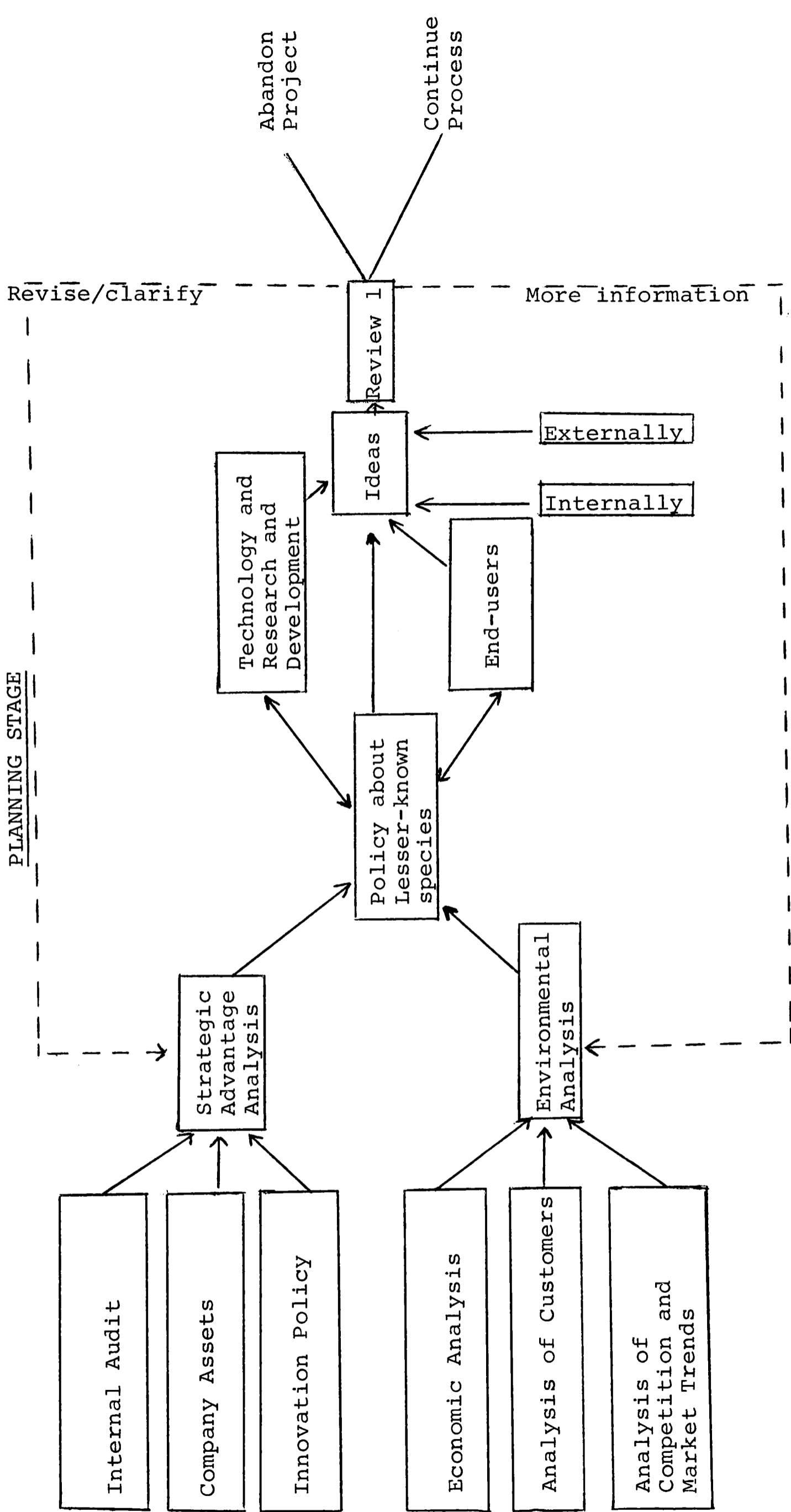
7.1.1.1. Company Assets

The aim is to determine whether the firm, at a particular time, is strong (or weak) financially which allows it to introduce (or prevents from introducing) any lesser-known species. A more detailed examination is now needed, -i- Finance/accounting factors : It is obvious that some degree of financial efficiency is required, but it also important to examine the efficiency of the accounting set-up of the company. The functions of the accounting staff is essential to produce detailed and accurate information about the return of the new specie and the effect which the specie might have on the overall profitability of the Hardwood department.¹

-ii- Organisation Structure Introductions of lesser-known species are activities which require a certain organisational structure by the promoting firm. There are certain questions which could help to determine the suitability of the organisation to promote of lesser-known species,

¹ A list of check points can be found in Glueck (1980) page 158.

Figure 7/2



(a) What kind of organisation are we managing ? A progressive or traditional one etc.

(b) What role do Tropical Hardwoods play ? It is important to determine whether they are the main or supporting product line (Sec. 4.2.2.2.-1-).

(c) What are we good at doing? That is, provide a wide variety of species or on providing a fast delivery service or on advising customers or obtaining high quality of material through exclusive suppliers etc.

(d) How does each of our strengths relate to market needs ? There are no answers to this question which apply to all merchants equally. Each merchant has to examine his particular customers and then evaluate his position in the light of this information.

-iii- Research and Development Capacity

By this I mean the capacity for researching market and supply opportunities and evaluating their potential. Those two areas were found to be of absolute importance in the introduction of lesser-known species (sec. 4.2.3.2.-II-III-).

-iv- Production capacity :

This is the capacity of log conversion, kilning etc. Past experience has showed that it is preferable to import the lesser-known specie in log form (sec. 4.2.3.I-II-) to avoid any problems of inappropriate processing. Therefore, the merchant should have sufficient production capacity to convert

the imported material into saleable form (this includes reprocessing of material which has arrived in poor quality). The question of new techniques and methods of processing together with the knowledge of the technical personnel should be examined.

-v- Corporate resources:

This is probably the most crucial area which needs to be considered. Advantages enhance the ability of a merchant to choose from more rather than less strategies. Disadvantages on the other hand limit the ability of a merchant to do so. Of the factors which were examined three stood out as very important :

(a) The size of the merchant was found to be important. The larger the merchant is the less risk he is running of achieving satisfactory results.

(b) The importance of Tropical Hardwoods to the overall operations of a merchant. A merchant who is primarily dealing in Tropical Hardwoods will have a better knowledge of the international market, the developments taking place and therefore will be able to take advantage of favourable situations (sec. 4.2.2.2.-I-)

(c) The nature of the material stocked and the origin of the Tropical species stocked. A wide range of species provides the necessary experience needed to overcome problems associated with

different end-use segments. The same is true for the origin of the species stocked. Familiarity with the areas new species will come from was found to be of major importance (sec.4.2.2.2.I-I-III- and 4.2.2.2.-II-).

7.1.1.2. Internal audit :

The internal audit is designed to examine the efficiency with which the current marketing tools are deployed by the firm. This makes it a very individual stage for each merchant. Nevertheless, some of the factors which this study found necessary to be examined are : -i- Marketing/Distribution factors : There are a large number of questions to be asked depending on the nature of the operations of the firm and the structure of the customers. The ones which were examined by the present study were

(a) Effective market research system : With emphasis on ability to research the overseas markets, visit the places of production in the Tropics etc. (sec. 4.2.3.2.-II-III-).

(b) Product/service mix : Whether customers require certain essential species, the number of species which the firm regards as optimum² etc. (sec.4.2.2.I-I-II- and 5.2.2.4.-I-IV-).

(c) Product/service line : The completeness of wood-based products on sale and the demand situation for each product line (sec. 2.2.)

²By optimum I mean a combination of ability to cope with a certain number of species and the species demanded by the particular customers of a merchant.

(d) Customer loyalty : There were conflicting findings about this factor. Merchants believed in a strong loyalty by their customers, while end-users were found to use a large number of suppliers at the same time (sec. 4.2.4.3. and 5.2.2.7.).

(e) Pricing policy : The various problems associated with price changes and competition on the one hand and the perception of the customers about the reasons of such price changes on the other. Those two areas were found to suffer from a certain degree of misunderstanding between the parties involved (sec.2.1.4. and 5.2.2.10.)

(f) Promotional activities : The various activities employed should be evaluated against specific objectives/goals.

(g) Channels of distribution : The changing nature of the Trade has created new patterns of distribution (sec. 2.1.3.) Special attention should be placed on two trends, the increased emphasis on processing (Moore and Cheslyn, 1975) and the vertical-horizontal integration of Timber firms (Mallinson, 1979).

(h) Sales force : It is important to have a capable sales force, but it is also essential to provide them with uniform information and instructions on their roles and reasons about their activities (sec.6.)

(i) Positive feelings about the firms products : It is essential to have such confidence. Not only from

the customers point of view. If the area of supply does not provide sufficient assurances, then there is no point in thinking of introducing species from that area, sometimes a sudden switch to another supply area can also create problems (sec. 4.2.2.1.-III- and 4.2.2.2.-II-). As Cyert & March (1973) stated "...the innovation behaviour of an organisation will differ depending upon whether it perceives its supplies with confidence or not."

-ii- Personnel

It is important to have sales force with well balanced functional experience and replacements trained and ready to take over. Especially with lesser-known species the understanding between all the levels of people involved is crucial. It is not so much the physical characteristics of Tropical species which generate confusion, it is the reason for various introductions of lesser-known species which are in doubt in the minds of the sales force. (sec. 6.5.2.). Time does even out those differences of opinion but with lesser-known species time is a crucial factor which should not be wasted with familiarisation, but instead should be used constructively in promoting the specie on a very specific basis of appeals.

7.1.1.3. INNOVATION POLICY

In this case a policy related to the introduction of lesser-known species. The existing differences between individual opinions of the various managers and the policy adopted by their company can only create confusion (sec. 4.2.5.) There were three main questions which were identified as essential in the formulation of an appropriate innovation policy (by this I mean whether

introduction of lesser-known specie should or should not be a policy which a merchant must pursue) -i- Why introduce lesser-known species at all ? Although some reasons have been presented (sec. 2.2.2.), unless the management of a Timber firm reaches a similar conclusion, based on their own interpretation of the trends, then there is no point in following a policy which does not agree with the perceived developments of the market. But at the same time the question can be rephrased slightly to provide a wider spectrum of alternatives. This will be "Why not achieve a better allocation of our existing species ?" Such a question is very relevant because of the diversity of opinions of what constitutes a lesser-known specie (sec. 5.2.3.2.I-).

-ii- What makes a successful lesser known species ?

There are two different approaches to this question. One is through the characteristics of a specie best suited to the U.K. market (sec. 2.2.4.3.). The other one is by analysing the particular requirements of specific end-user(s) and/or end-use segment(s). It is my opinion that the second of the above alternatives will provide better information because it takes into consideration the nature of the customers serviced by a particular merchant.

-iii- What is a lesser-known specie ?

In the introduction of the text certain accepted definitions of the term were given. But this study showed that the term is a far more complex one.

Overall, the merchants were found to have more clear ideas of what constitutes a lesser-known specie. The species which they

mentioned as lesser-known were all imported in quantities less than 1000m³ per year and the imports were of a spasmodic rather than a continuous nature. The only exception was Lauan. But what is important to remember is that many merchants were under the impression that they were the first to promote a certain specie, while others did so at about the same time (sec. 4.2.3.1.). As for the end-users, I was surprised to find species which undoubtedly are well established (e.g. Iroko, Keruing, Ramin etc.) being regarded as lesser-known. While a rather large number of other species (e.g. Agba, Jelutong, Makore etc.) were regarded as lesser-known by some respondents and well established by others (sec. 5.2.2.4.-I- and 5.2.3.2.I-). This in my opinion is indication that the above question must be answered in the light of an examination of the particular customers of a merchant rather than the market as a whole. Which means that promotion of lesser-known species is a very individual activity of one merchant to one customer of one specie at a particular point in time. A brief examination of Table 7/1 supports the above arguments.

The fact that such promotions of lesser-known species are very individual in their nature does not mean that there are no suitable guidelines in undertaking such a campaign. On the contrary, the complexity of the matter requires a marketing framework which will identify opportunities, determine appropriate actions and evaluate the results of the various activities.

There are four basic options open to a merchant (King, 1973):

- (a) To be a pioneer both in new species and areas of origin of such species. In this case the merchant

Lesser-known species to both merchants and end-users

Anyan	x	@	Lauan	x	@
Agba	x		Lignum	x	
Antiroba	x	@	Lauro Velmeho	x	@
			Limba	x	
Bahia	x		Lapacho		@
Berlinia	x		Lauan Light Red		@
Black Bean	x		Laurel Indian		@
Baguacu	x				
Bagtican	x		Malas	x	
Bongossi	x		Makore	x	
Badi	x		Muminga	x	
Balau		@	Meranti	x	
Bosrolocus		@	Massaranduba	x	@
Boxwood Indian		@	Mninga	x	
			Merbau		@
Cocobolo	x	@	Maccacauba		@
Calophyllum	x	@	Mandioqueira		@
Castanheira		@	Mahogany Braz.	x	@
Cedar Bolivian		@			
			Niangon	x	@
Dahoma	x		Nemesu		@
Danta	x		Nyatoh	x	@
Dakua	x				
Damanu	x		Ogea	x	
Doussie	x		Oak Tasmanian	x	
Freijo	x	@	Padouk	x	
Geronggang	x	@	Pau Marfin	x	@
Guarea	x		Punah	x	
Grumixava	x		Pometia		@
Gerutu		@	Para Para		@
Hyedua	x		Quaruba	x	@
Idigbo	x		Ramin	x	
Iroko	x				
Imbuya		@	Sepetir		@
			Seraya White		@
Jelutong	x				
			Taun	x	@
Koto	x	@	Tulipwood	x	
Kauvula	x	@	Tatajuba		@
Kaudamu	x		Tetraberlinia		@
Karuing	x				
			Virola	x	
			Vasa		@
			Wenge	x	@
			Walnut American		@
			Yang	x	

Where x End-users

@ Merchants

introduces a specie which is entirely new to all the U.K. merchants/importers and end-users.

(b) To be an improver. In this case the merchant can try to introduce a specie which was introduced in the past but proved unacceptable by the market because of problems associated with supply or transportation (an example will be Tasmanian Oak which was introduced just after the Second World War but proved unacceptable, a more recent effort based on selective shipping from very reliable sources has produced very good results). Another alternative in this policy category will be to improve the quality of the species stocked on a regular basis by ensuring better shipping conditions, placing contracts with more reliable shippers etc.

(c) To be a segmenter. The merchant in this case chooses to enter end-use segments which he did not service in the past or introduces well established species to end-user(s) and/or end-use segment(s) which did not have any past experience with those particular species.

(d) Finally, a "me-too" policy might be followed. In this case the merchant will choose to keep a close watch on the species introduced in the market and their progress. In the event that any of the new species proves to be a success then he quickly enters

the market. This has proved to be the favourite policy followed (sec. 4.2.5.3.) Such a policy can only be successful if the merchant has easy and quick access to the various channels of supply.

There are two major problems which must be considered when a policy decision is taken. The first is the apparent lack of reliable information about the species introduced into the market at any time, and the second is the wrongly assumed high customer loyalty (sec. 4.2.3.1.-I- and 4.2.4.3. and 5.2.2.7.) Those two findings can have conflicting results because a merchant might believe that he is the first to introduce a specific lesser-known specie to a customer of his. But the end-user might have in the meanwhile tried the specie through another of his suppliers. I believe that in this case the second merchant will invariably be at a disadvantage because the market at this stage is not large enough to support large quantities of lesser-known species.

7.1.2. ENVIRONMENTAL ANALYSIS

The examination of those factors should be done at a very initial stage of the life of a merchant. Once it is performed then only occasional revisions need to be taken into consideration. The main areas are :

7.1.2.1. Economic Factors :

Although such analysis is outside the scope of the present study, it is nevertheless obvious that such factors play an important role in the formulation of a lesser-known specie policy. Such factors can be an opportunity or a threat and therefore need to be analysed.

(a) Stage of the business cycle

The market can be classified as being in a depression, recession, recovery or prosperity. What is important to remember is that the business cycle together with the outlook of the particular merchant determines his approach. It is usually considered that it is easier to introduce a lesser-known specie during periods of high demand, but such species have been also found to be successful during times of low demand. The crucial point was their price, because during times of low demand end-users were found to be more concerned with price than any other factor. Therefore, the stage of the trade cycle is not so much a factor which eliminates introductions but limits the alternatives which might be

successfully introduced.

(b) Inflationary or deflationary trends in prices

On the same principles as above, during times of rapid inflation the more popular of the species will experience a proportionately higher price increase. Therefore, since price is a major factor in the decision process of the end-users, such periods can be used to promote lesser-known species with success.

(c) Interest rates/Currency fluctuations :

These two monetary factors are both detrimental in their effects on promotion of lesser-known species. Interest rates (high ones) will put additional pressure on stock holdings and cash flow while low rates do not necessarily increase stocks. At the same time we have seen that lesser-known species should be stocked at a full size range and at some reasonable quantities

(sec. 4.2.3.2-I-)

Currency fluctuations could also add to the cost of the lesser-known specie and thus reduce profit margins and/or increase their price to the point where they are not seen as attractive alternatives to established species.

7.1.2.2. - Market/Competitive factors

There are three separate such groups

(a) Primary demand factors

Some of these factors have already been discussed (sec. 2.2.1. and 2.2.2.). This study has concluded that there is a need for a wider utilisation of more species. But each merchant should examine his own position. By examining the species which he stocks on a regular basis he can determine the availability and growth potential of each one. His examination should be based on two principles, first on a per-specie basis and second on a usage-specie analysis.

(b) Competition : This area has already been examined (sec. 2.1.4.2)

(c) Suppliers/Technological factors

It is obvious that cost and availability of all the factors of supply must be examined. These will determine the degree of power of the supplier(s) and the availability and cost of materials. This is closely related to changes in technology affecting the raw material, the production methods and process overseas.

7.1.2.3. Customer Analysis

It is hoped that this study has provided some useful information in this area (Chapter 5). And therefore there is no need to repeat myself. But certain interesting findings must be stressed. There are some areas where the opinions of end-users and merchants are conflicting and misconceptions present problems, there are very few differences between end-use segments overall but individual end-users can have very diverse needs/opinions. Therefore, each merchant should perform an analysis of his own customers on -

- usage rate
- main species sold to each customer
- lesser-known species tried in the past
- the nature of the decision-making-unit.

The aim of the analysis is that the merchant seeks to identify the basic opportunities, threats and constraints. The customers who are more innovative are identified and the marketing activities most suited to them are established.

7.1.3. POLICY ABOUT LESSER-KNOWN SPECIES

At this stage the company executives will have to decide on a policy which not only relates to lesser-known species but to their whole marketing plan. This study has made use of the matrix proposed by Johnson & Jones (1957). Some modifications were necessary. The two product objective dimensions are, increasing market newness and increasing specie newness (in place of the original dimension of increasing technological newness). This is illustrated in Figure 7/3. Although this matrix dates back to 1975 it still provides a very useful framework for analysing innovations and developing suitable marketing strategies.

Let us now examine the choices open to a merchant :

- i- No change at all (or as Chisnall, 1977, calls it "masterly inactivity").
- ii- Stay in the same market but endeavour to improve market share by a policy of reformulation or replacement.
- iii- Stimulate demand for established species in existing markets by remerchandising, planned improvement and widening the line of products offered.
- iv- Identify and expand into new end-use segments. Such a policy will perhaps involve specie modification and/or diversification.

The decision about which alternative to follow together with the market share objectives set by the firm will provide information

Figure 7/3

a)

Lesser-known specie policies

← (Increasing specie newness) →

Product Objectives	(No new species) ^{b)}	(Improve present range of species)	(New species)
No market change		Reformulation (To achieve an optimum balance of species/sizes/forms stocked)	Replacement (To seek new species which existing customers will use)
Strengthened market (To exploit more fully the existing end-use segments for the present range of species stocked)	Remerchandising (To increase sales of current species to end-users already buying from them)	Improve product (To improve the quality of the stock)	Product line extension (To broaden the line of species which will be used by existing customers)
New markets (To increase the end-use segments using existing species)	New use (To find new end-users who will use the stocked species)	Market extension (To reach new end-users/end-use segments by modifying present stock)	Diversification (To add new end-users/end-use segments by new specie introductions)

Increasing market newness

- a) From a merchants/importers point of view
- b) Text in brackets represents additions/modifications to the original text matrix.

Source : Johnson & Jones (1957)

about the future actions. Merchants who have adopted a building strategy aim to be industry leaders. We have already examined the implications of adopting such a policy (sec. 4.2.5.1.) and it has become obvious that unless there is an aggressive intention by the merchant, it will be better not to attempt any promotion of lesser-known species. Half-hearted attempts and doubts about the decision to promote lesser-known species can only lead to failures. The PIMS¹ study proposed that firms with such aggressive intentions should be prepared to answer two main questions before undertaking any such activities.

(a) Are there adequate financial resources ?

This has already been discussed in the section on Company assets.

(b) If the drive for market share is not successful, will the company remain viable?

To put it into a more positive way, how can a merchant ensure that the impact of an unsuccessful introduction will be minimum.

I believe that three factors can minimise this risk :

-i- Stock certain species which ARE (not just regarded) essential to the Trade and enjoy a high demand by the end-users (sec 4.2.2.1-II and 5.2.2.4-I-IV-). It is obvious that at this point in time Brazilian Mahogany will be such a specie. It is important to understand that the merchant will have to consider the state of the Trade at a particular time and stock some of the species which have a high demand at that time. This means that

¹PIMS Profit impact of marketing strategy. The subject was analysed in Buzzell et.al (1975)

some species will have be "harvested" and others been increased in quantities, the aim is to achieve a balance in the risk of holding various species.

-ii- Examine carefully the availability of other species with similar properties to the lesser-known specie (sec.4.2.3.2-V-). Introductions of lesser-known species do not mean that NO other species with similar properties exist².

All of the past introductions were designed to complement existing species. Therefore, the merchant MUST have comparable stocks (i.e. dices, form etc.) of the established and new species. In the event that the customer(s) who agreed to try the lesser-known specie is not satisfied or faces serious production problems then the merchant MUST be able to replace the order with material familiar and acceptable to the end-user(s). This way the merchant does not lose the order, an atmosphere of good-will is created and the element of risk is diminished in the mind of the end-user(s).

-iii- Establish whether the market targets can be achieved within the constraints imposed. Any such strategy has a "limiting factor". The term has been defined by Barnard (1938) as "The one whose control in the right form, at the right

place and time will establish a new system or set of conditions which meets the purpose."

This limiting factor is different for each merchant and therefore it is impossible to analyse every one here.

Some merchants prefer a less adventurous programme, they follow a wait-and-see policy (this was found to be the most popular policy). Such strategies are common not only in the Timber Trade but in most other markets. As Levitt (1974) stated "Imitation is not only more abundant than innovation, but actually a much more prevalent road to business growth and profits." Such a policy may well associate with a "holding marketing share strategy". This appears to be true in the Timber Trade, because none of the merchants who introduced any lesser-known species in the past did so in order to increase their market share (sec. 4.2.5.3.). Introductions have taken place because of problems associated with particular species and by such lesser-known species the merchants aimed at holding their market share rather than expanding it. We have also established that some merchants are seeking to expand their market opportunities through acquisitions of firms with complementary product ranges or possessing knowledge of special markets (e.g. DIY, Double Glazing etc.)³

² If we look at the reasons for introduction (sec.4.2.3.2-IV) we see that lesser-known species which were introduced in the belief that there was an unsatisfied demand in the market all proved to be failures.

³ For a complete discussion see sec. 2.1.3.

The strategy which should be followed by an individual merchant can not be presented like a set of rules. Several alternatives are open to careful evaluation. Each merchant has to decide, taking into consideration his own position in the Trade. Something which will be helpful to remember is that "The most feasible solution may not necessarily be the ideal one, but at least it should have the virtue of realism" (Chisnall, 1977)

7.1.4. TECHNOLOGY AND RESEARCH AND DEVELOPMENT

The role and impact of technology has already been discussed in the chapter on Literature (sec. 3.4.). The surveys showed that both the merchants and the end-users believed that technology has made acceptable to the trade some species which were not so before (sec. 4.2.4.2. and 5.2.5.1.) But most of the respondents did not have any strong views. I believe that this uncertainty is because such technological advances have not been used extensively, the respondents were aware that there 'something' but have not applied the advances.

I would like to mention the findings of Berridge (1977) which are shown in Figure 7/4. We see that lumber and furniture for the U.K. (represented as xLF in the table) represent the lowest rate of expenditure on Research and Development as a percentage of net output and growth index. What is alarming is the comparison with "exogenous" competitive materials. Therefore, it is obvious that there is little effort put into Research and Development. I believe that a more intensive technological approach will lead to a degree of flexibility in the use of material, it will reduce costs and improve efficiency overall.

The merchants should keep themselves informed of any technological change and progress, because sometimes such developments can make acceptable species which were regarded as unsuitable in the past. An additional reason is that such developments can also make accessible forest areas which were not in the past, and which include species which are well established but in short supply.

It has been determined that end-users very rarely provide any ideas about lesser-known species (sec 5.2.3.2-II-). But it was also established that in many cases they approach their suppliers to ask for possible alternative species and advice.

There are two particular aspects which I would like to emphasise here. The merchant should examine past reactions of his customers towards lesser-known specie introductions. This way he could determine a rate of acceptance by his customers. It is very important to realise that although the research has shown that, overall, end-users are not negatively predisposed to lesser-known species, it is the nature of individual customers of a specific merchant which will determine their "readiness" to try such species. Also if it is possible the merchant should try and involve the end-users into the process of choosing the lesser-known specie to be introduced. This way there will be less resistance.

Speed of diffusion¹ of a lesser-known specie introduction : We have already seen that for successful introductions the time of acceptance or sale of the first consignment is less than 6 months (sec. 4.2.3.2-II-) But although this is a useful indicator, it is my opinion that merchants will face different time spans. By examining the formula

¹ Mansfield (1968) , whose contribution has dominated this area of research, conceives a three-way definition:

Inter-firm diffusion refers to the spread of a new process from firm to firm within any industry.
Intra-firm diffusion refers to the spread within individual firms
Overall diffusion refers to the industry as a whole

proposed by Davis (1979),

2

$$b = \frac{1}{6 D_j} = \frac{(\Psi + \beta \delta)_j}{(\beta^2 6^2 + 6^2)^{\frac{1}{2}}_j}$$

we realise that there are two broad groups of influences,

- i- The nature of the end-users, and
- ii- The intra-firm structure

This really reaffirms what has been said up to now, that introductions of lesser-known species should be based on an individual merchant to specific end-user(s) basis.

Some further conclusions from the formula are that the diffusion of the introduction of the lesser-known specie -j- will be faster : (a) The larger δ_j is : Therefore, it will be advisable to introduce lesser-known species to segments which are as large as possible (sec.5.2.3.1-I-).

(b) The larger that Ψ_j is : which in turn will be larger :

- 1) The more substantial the technology improvements are to overcome problems which are traditionally associated with lesser-known species.
- 2) The more productive is information search by potential users (sec.5.2.3.2-V- has shown that major improvements are needed in the communications area)

² See Appendix 7/1 for explanation of the terms used

3) The smaller are firm inequalities
(σ_{sj}^2) of the end-users.

4) The smaller is the inter-firm differences
in expected profitability (σ_j^2).

The statement of a company's policy about lesser-known species should set up boundaries within which the company searches out new specie ideas. In considering lesser-known species it must always be carefully kept in mind that the term can mean a number of things to different merchants and end-users, from an entirely new specie to the U.K. market on a whole to a simple addition of a size or form to the existing range. Naturally, the relative importance of the various sources employed will vary depending on the particular merchant and his objectives.

Sources of lesser-known specie ideas : Of the various sources examined two sub-groups emerged (sec.4.2.3.2-II)

-i- Internally generated ideas

Some of those will be species found through own research unit, past experience etc.

-ii- Externally found ideas :

Like approached by U.K. timber agents, information from overseas markets, visits by overseas producers etc.

It has been found that internally generated ideas provide a greater number of successful introductions. But when individual species were examined against the above breakdown, it was found that all of the outside generated ideas produced species which were lesser-known to both

merchants and end-users. While, consistant with the previous discussion, internally generated ideas produced many successful suggestions for market extension, new uses of established species etc.

This generation of ideas (or better search for species) must be carefully constructed. It is my opinion that such activities should follow some form of pre-arranged meetings where a number of such species are put forward and discussed. In this way the process of introduction of lesser-known species will take the form of a structured proceudre and not a hit and miss activity. Of course this does not exclude the possibility of considering a specie which has in the meanwhile come to the attention of the executives. The more specie names that are generated in this stage, the better will be.

7.1.7. REVIEW 1

At this point a number of alternative lesser-known species have been put forward. Each one of those must now be examined against the policy about such species. The species which are consistent with such a policy are accepted as possible future introductions.

The executives have four alternatives at this point :

- i- To review the proposed species against the objectives and policies of the company because they are not clear about certain points.
- ii- To go back and gather some more information about market trends, customer behaviour etc.
- iii- Abandon the search because of unsatisfactory proposals or resistance from customers or financial pressures etc.
- iv- Continue the process and screen the alternatives proposed.

7.2. SCREENING STAGE (FIGURE 7/5)

At this stage a number of potentially suitable species have been identified by the merchant(s). The next step will be to decide on a single lesser-known specie. It is my opinion that at any point in time a merchant should promote actively one ONE lesser-known specie. There are a number of reasons, some of them are :

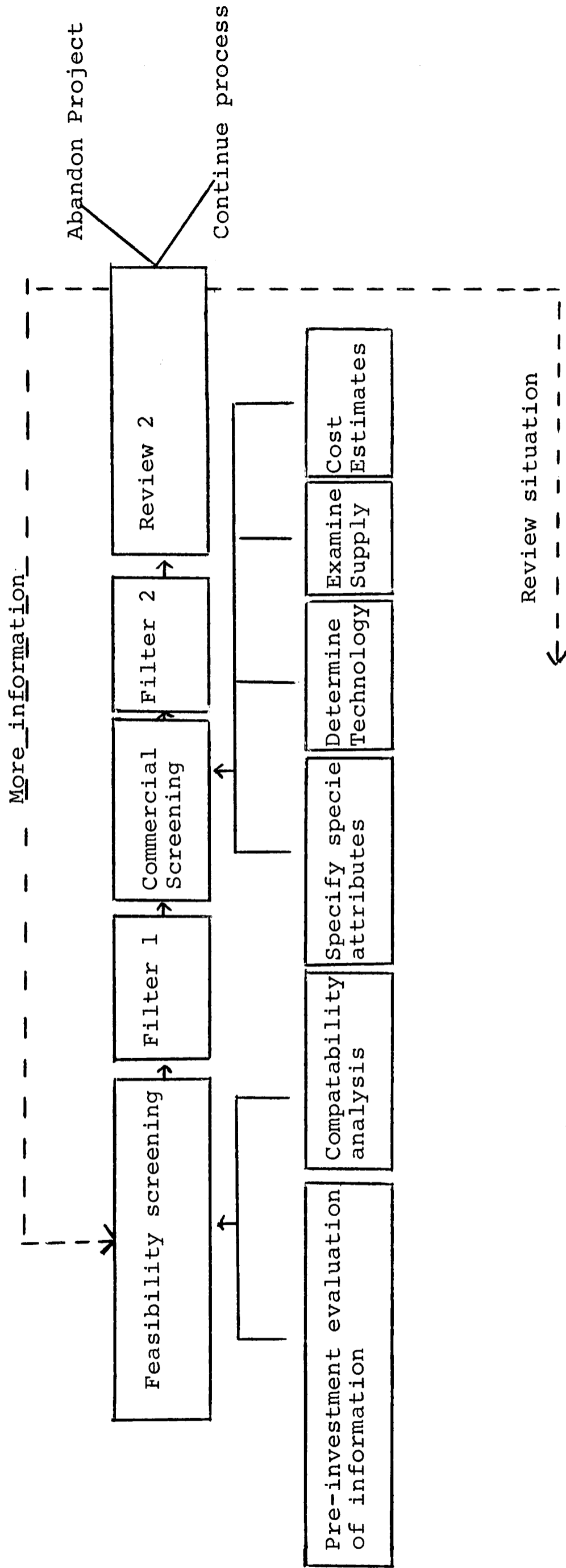
-i- In order to avoid the frequently established misconception about who is the first merchant to introduce a specific specie into the U.K. market (sec. 4.2.3.1-I).

-ii- Depending on past results the reactions to new introductions of lesser-known species will be different. In both end-users and merchants surveys it was found that past experience determines future actions (sec.4.2.5. and 5.2.3.4-V-). Therefore, it will be essential to assess the situation before any further attempts are made and the marketing actions are designed to overcome past short-comings. This way the marketing plan can properly be evaluated and corrective action can be taken.

-iii- In the case of unsuccessful introductions the material could stay in stock for periods over twelve months long (sec.4.2.3.2-I-) and such accumulations of "unwanted" stock could create serious problems.

Figure 7/5

SCREENING STAGE



7.2.1.1. Pre investment information

A brief and inexpensive review should first be performed in order to eliminate species which are non-starters. This can be done by examining three main areas of information, all of equal importance (sec.4.2.3.4-II-):

- i- occurrence of each specie in the tropics,
- ii- physical and mechanical properties, and
- iii- technological and processing characteristics.

Literature and some telephone enquiries could provide basic information on those questions. This information must then be examined against the minimum requirements acceptable. Those of the species which do not fulfil those requirements are rejected.

7.2.1. Compatibility screening

The species which have survived the pre investment screening are now submitted to a compatibility screening. The areas¹ which must be examined are :

- i- the species market potential,
- ii- the extent to which the company can exploit this market potential,
- iii- the cost associated with such an effort,
- and -iv- the rewards to be obtained if successful (the risks if unsuccessful should also be considered.

¹ For a more comprehensive analysis see Pessemier (1966)

The first step should involve some form of a sales forecast for each specie and the market in which it is aimed. We have seen, that on an overall basis the joinery segment has the highest Tropical Hardwood consumption coefficient (sec. 2.1.4.1.) and also that joinery represents a major end-use segment. Therefore this segment should provide the best market potential. This is supported by the findings in the end-users survey (sec. 4.2.3.2-III-). Another factor which must be examined in relation to the target market is the timing of the introduction, by this I mean the position of the traditionally used species by the target market. It has been found (sec.4.2.3.2-V-) that many introductions have failed simply because they were ill-timed.

This forecasting of potential sales is not a futile exercise as many merchants believe. They argue that it is impossible to estimate market penetration because there are no such statistics available. But this can easily be overcome. This study believes that the introduction of lesser-known species should be made to existing customers of a merchant, therefore he can calculate their overall purchases for the past, let us say 12 months. A further break down to species purchased can also be estimated for each customer. Having those figures a penetration rate can be estimated for the species which the lesser-known one is meant to compete against.

The next two steps are intertwined. The share of the market that the new specie can obtain will depend on the behaviour of the customers, the structure of the target market and the efforts to market the specie. I believe that introductions of such lesser-known species should be aimed at the existing customers of a merchant/importer. The problems associated with trying to persuade an end-user who had not previous dealings with a particular merchant, not only to change his source of supply but at the same time his traditionally used material will prove unsuccessful. The structure of the trade is such that it will be very difficult to overcome the inherent scepticism of the end-users (sec.5.2.3.3.-III-). The emphasis that such people place on their past experience will make this task even more difficult (sec.5.2.2.II).

Furthermore, by concentrating on the existing customers the already formulated structure of the sales force and distribution methods will be utilised at maximum efficiency. The overall marketing costs will also be kept under control since there will be past figures to provide some form of comparison. Any costs related to additions or modifications to the existing plant/machinery should be added to those marketing costs to provide an overall estimate. The total estimated cost, can then be compared against the expected (forecasted) sales volume and the "profit/loss" can then be aggregated over the time period being considered. The resulting rate of return can then be compared against that

of alternative proposals and with general company criteria/objectives.

This means that a merchant will be better-off if he can chose from a number of alternative species rather than having to evaluate just one specie.

Now, the species which are really non-starters have been determined and eliminated from further analysis.

Furthermore, of the remaining those which are not expected to provide an acceptable rate of return have also been rejected. The difference between the two classifications of rejected species is that with non-starters there is no point in ever again considering the specie(s) while those which have been rejected on a purely rate-of-return basis should be "referred" in case none of the remaining species passes all the required criteria. In that case re-appraisal will take place (see Filter 2.)

In any case, the specie(s) which satisfy the feasibility screening criteria will go on to the next stage of commercial screening.

At this stage it will be of vital importance to visit the producing countries of the species having reached this point and to examine the prevailing conditions at the point of production. This is even more important if the material is processed before it is shipped. We have established that the rate of success does increase with such visits (sec. 4.2.3.2-II-).

Certain tasks should be performed at this stage :

7.2.3.1. Specify specie attributes,

and by this I mean physical and marketing attributes.

This task is very important for three main reasons

(a) It determines whether the specie really possesses those attributes which are associated with successful introductions.

(b) It determines the end-use segment or individual end-users to whom the specie should be introduced, and

(c) It will provide guidelines on the appropriate communication approach which should eventually be employed.

It is often necessary to make a rapid appraisal of the physical properties of a specie before any decision is taken, and it is not always possible to obtain the required information in the literature. Therefore, it will be advisable to use the testing methods proposed by Kauman & Kloot (1968). Such a method consists of a "...few

relatively simple field observations and tests designed to provide a maximum of information in a minimum of time". Once those physical properties have not only been established but also verified by field research, than a comparison with the requirements of particular end-users/end-use segments should be performed. I believe that the merchant should use his own past records when the introduction is meant for a very selective number of end-users while when it is to be introduced to a whole segment, then papers like Webster's (1978) should be used. Anyway, by ensuring the compatibility of end-use requirements and specie properties the merchant can promote the specie to the most appropriate customers.

7.2.3.2. Determine technology

It has been found that end-users will be prepared to modify their production methods to suit the properties of species about which they are certain of their suitability (sec. 5.2.3.4-II-IV-). Therefore, the necessary modifications should be considered in order to determine whether they are feasible and economical from the end-users point of view.

Other factors which should be considered at this stage are shipping conditions, use of wood preservatives etc. Such factors will determine the quality of the material when it arrives in the U.K. and although their importance to the eventual outcome was found to be not very significant

they should still satisfy certain minimum requirements.

7.2.3.3. Examine supply

This has been found to be of major importance. Therefore, as Cooper (1979) has stated, the merchant should make sure that there is sufficient supply for at least a period of 5 years. Of course, this will depend on a number of factors apart from occurrence in the forests. Some of those additional factors are expected demand, overseas markets (e.g. U.S.A., Japan etc.)

7.2.3.4. Cost estimates.

Whether additional costs will be required because of the new specie. Such costs could be operational (kilning, storage space etc.) and/or marketing (additional sales staff, promotional material etc.).

Now that all the necessary information has been gathered, subjective judgement should be applied on those crucial points mentioned. Particular emphasis should be placed on comparisons with the specie(s) with which the lesser-known one is to compete. The present research has made use of such comparisons (sec.4.2.3.2-V-) and they were found to provide valid answers. Such analysis, if it is performed for a period of time, will provide guidelines and minimum acceptance levels (Appendix 4.2/6)². I believe that such an approach is more realistic than comparing the prospective

² The weights given in this study are by no means the ones that should always be used. They are simply indications of how to apply the technique proposed. Each merchant should draw his own points and then estimate his own weights according to the nature of his particular customers.

new specie against the profile of the specie best suited to be introduced into the U.K.Market (sec.2.2.4.3.)

The most important point is that the manager(s) making such comparisons should be objective in their estimates otherwise the analysis will provide very unreliable results. Not only for the specie in question but for all the subsequent introductions.

The above proposed analysis will provide an overall evaluation of each possible alternative. In the case where one specie has been evaluated as being very superior, then the choice/decision is obvious. At the same time the merchant has obtained a great deal of information on a number of other lesser-known species. This might be useful in the case that circumstances dictate a change of specie to be promoted (such circumstances could be a ban on exports by a Government of a producing country).

In the case where a clearly superior specie is not found then the merchant should go back and re-examine the basic advantages of the proposed introduction against species of similar properties. The specie which provides the best overall comparison should then be preferred/promoted.

Finally, if none of the species has passed all the tests/criteria then the merchant has three alternatives,

- i- to review the situation,
- ii- to chose the best of the existing alternatives, or
- iii- to go back and bring into examination those of the species which were "referred" (see Filter 1). Alternatives -i- and -ii- will be examined in Review 2 stage. As for

the alternative of going back, those species which failed the feasibility screening just because of unsatisfactory expected rate of return can be re-examined as long as they show a positive rate of return. Therefore, he can decide whether to pass any of those through the commercial screening stage. If yes then such species will have to undergo the same screening as the one already described. If no then the next stage is Review 2.

At this point the merchant is faced with either a single specie (the one which was proved as the best of the alternatives) or with the fact that none of the proposed species were found as being potentially successful introductions. In this case he has four alternative courses of action :

- i- To abandon the project altogether
- ii- To seek more information about the species already assessed.
- iii- To review his basic objectives associated with lesser-known specie introductions and also review the prevailing market conditions in case there are basic changes.
- iv- To continue the process because the indications are favourable.

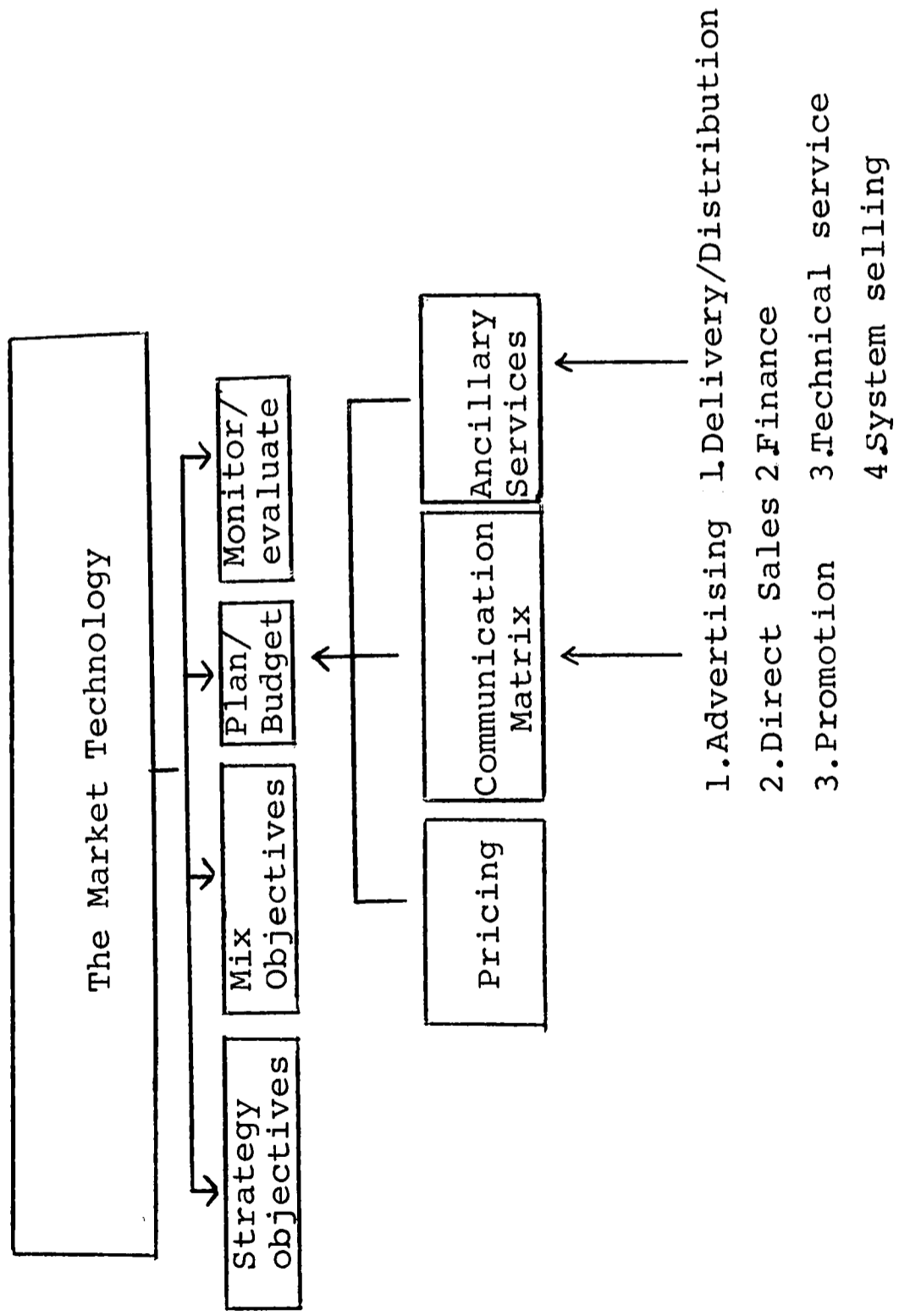
The appropriate action to be taken will be determined by a large number of market environmental and corporate factors. Each case is unique. What I would like to emphasize is the need to examine each of the alternatives before the decision is taken.

At this point the merchant has decided on a specific lesser-known specie. The difference between the approach proposed here and what usually takes place is that merchants start at this point rather than going through a sequential process. In other words the introduction is not the result of a well thought out and analysed process but an attempt to find out whether the specie will be accepted by the market. Such tactics have caused the introduction of a number of unsuitable species and have created the existing atmosphere of reluctance and scepticism from the end-users.

Unlike other industrial and consumer markets, the Timber Trade does not have the option of performing test marketing. There can be no prototypes of specie because it is after all a raw material. Furthermore there is no point in circulating samples of material which is not stocked. The time element is crucial in two ways, first that the lapse between placing an order with a shipper and actually receiving the material can be considerable, and second the introductions of lesser-known species should be timed so as to take advantage of cyclical fluctuations in the supply situation of other material. No marketing action is meaningful before the arrival of the first consignment of the lesser-known specie.

Figure 7/6

IMPLEMENTATION STAGE



Nevertheless, there are still some distinctive phases through which the introduction of the specie has to go before it is either adopted or rejected by the market. The mental process is presented in Figure 7/7. It must be clear that rejection can take place at any stage of the adoption process. Therefore, a set of objectives and a detailed plan for each stage should be established.

The first decision is to determine the type of introduction that the lesser-known specie represents. There are three main alternatives¹:

-i- Continuous innovation

Where it is a case of adding an established specie to the existing range. The specie is well established in the market as a whole but has not been stocked by the merchant in the past. In this category are additions of sizes, forms of material etc.

-ii- Dynamically continuous:

An established, to the merchant specie is introduced to new markets or individual end-user(s). Such innovation presents more problems than the continuous one.

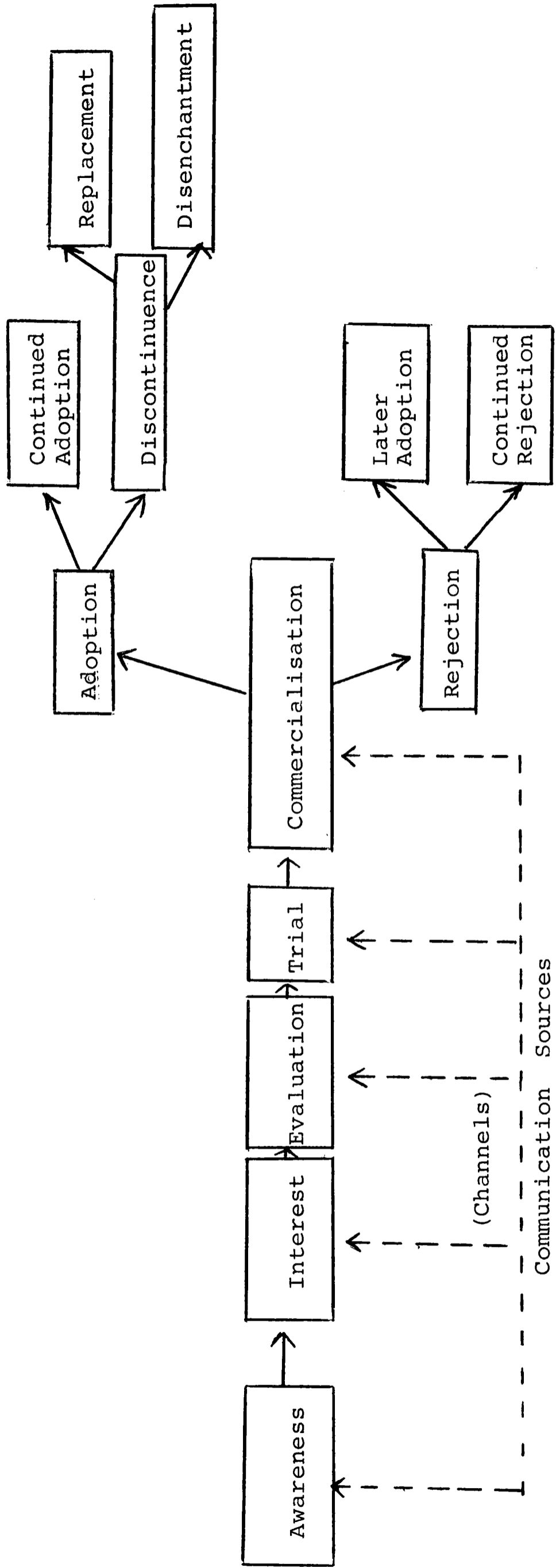
-iii- Discontinuous innovation

Such species create the most serious problems and include species new to both merchants and end-users as a whole.

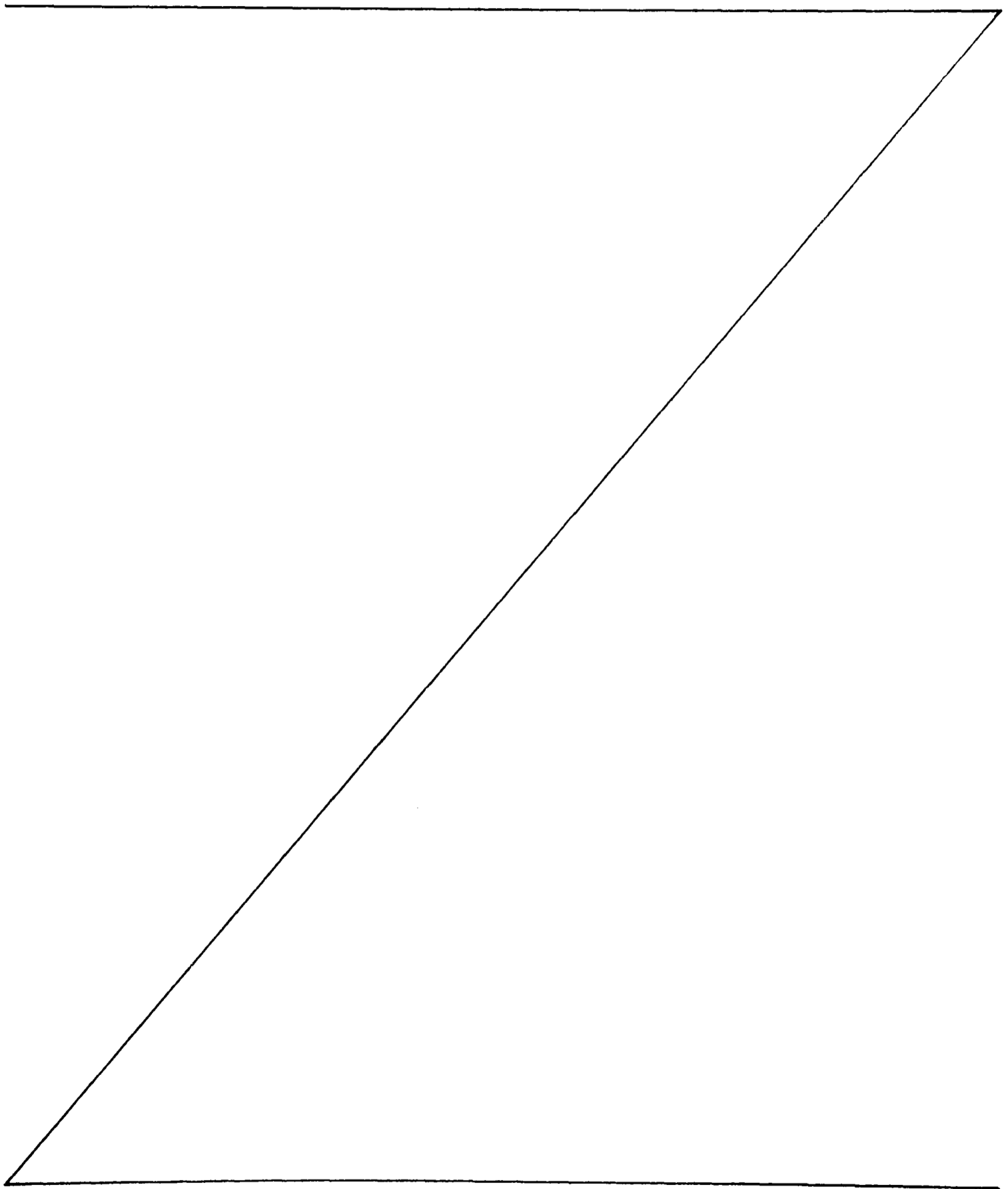
¹ The classification used can be found in Engel, Kollat and Blackwell (1978)

Figure 7/7

THE ADOPTION PROCESS



The distinctions are not just superficial ones but will determine all the subsequent marketing actions and objectives. This paper, as stated before, deals mainly with discontinuous innovations or species lesser-known to both merchants and his customers.



The next step will be to place an order for a first consignment. The survey has provided some useful data on the composition of the first consignment (sec. 4.2.3.2.-I).

(a) If it is possible the material should be imported in log form.

(b) The quantity should be at least 20m³ and preferably 50m³.

(c) The quality should be as representative of the rest of the material as possible.

(d) A full range of sizes should be stocked.

At the same time, the desired strategy and the objectives must be formulated. The strategy should take into consideration the stage of the adoption process. As for the objectives, they should serve two main purposes (Drucker 1968) :

-i- To fit the efforts of all people involved to produce a whole-without gaps, without frictions, without unnecessary duplication of efforts, and

-ii- To measure the performance and the results of the strategy against the goals set.

This study cannot provide specific answers to such problems, each merchant has to decide for himself and take into account the corporate policies of his firm and the structure of the management.

Now once the first consignment has arrived and checked against the specifications then the marketing plan can be put into operation.

7.3.1.

MIX OBJECTIVES

The objectives for each of the marketing activities employed by the merchant in his attempt to promote a lesser-known specie should be designed to reflect the stages of the adoption process (Figure 7/7). Serious consideration should also be given to the target market. The research has looked into two types of prospective users of lesser-known species, those with past experience with such species and those without any such experience. Overall, little difference was detected between those two groups as far as their needs, service requirements, species used etc. The only major difference was their attitudes toward trial of lesser-known species in the future (sec.5.2.3.4-V-) It can be said that those with past experience are more prepared to try such species in the future. Therefore, the merchant should focus his efforts on those of his customers who have not tried any lesser-known species in the past. At the same time revise and re-examine those elements of his past efforts with customers who in the past had tried at least one lesser-known specie.

The marketing activities which are mentioned in the following chapter are by no means all that should be considered. They are simply used as a very basic framework around which a merchant might base his marketing plan.

A final point which I would like to make is that, in setting objectives the merchant should aim at overcoming

the mental attitudes and scepticism of the end-users rather than aiming at capturing a certain market share. As Rich (1979) has stated " ... the correlation between market share and profitability is not as strong in the timber/forest products industry as it is in other markets."

7.3.2. Communication matrix

However suitable the specie, however excellent the technical service, the market will remain indifferent until these advantages are brought to its attention. Furthermore, this must be done in a way to create an atmosphere of desirability and illustrate the benefits from adopting the specie.

1. Objectives : The campaign should first of all be directed toward those making the decisions (DMU). There are two areas of objectives :

- i- Short term : These are usually designed to evaluate the awareness created by the initial messages and to generate some interest about the lesser-known specie.
- ii- Long term : Such objectives can take a variety of forms; from inducing trial and educating customers to correcting false ideas/impressions and widening markets and applications. It is really the particular specie characteristics which will determine

the exact long term objectives.

Once the objectives have been established then an effective communication matrix can be designed to suit them. The following are just some proposals.

2. The target audience : There are two separate target audiences. One is the end-user(s) or end-use segment(s) chosen to promote the specie and the other one is the people who are best suited to receive the message. We have seen that the various segments have different speeds of diffusion (or acceptance/rejection) (sec. 7.1.5.) but at the same time a more detailed approach is needed. This should be focused on specific customers who use material similar in properties to the lesser-known specie (sec. 4.2.3.2-VI-) and further attention should be given to their DMU (sec.5.2.3.2-III- and 5.2.3.3-I-). This approach is the same for customers who have had some experience with lesser-known species and those who have not.

3. The message : The message should be designed in order to reflect the stage of adoption (see Figure 7/7)

-i- Awareness : AT this stage the end-user(s) who are regarded as more likely to be interested are contacted and very brief information is provided about the lesser-known

specie. The research has shown that there is some pur-positiveness by end-users to look for alternative species ^{*1} (sec. 5.2.3.2.-II-). Therefore, unless there is a problem to be solved by the new specie such attempts will generate very little awareness. The customers should be encouraged to seek more information.

-ii- Interest : This stage in many respects will provide some preliminary information about the likelihood of success of the new specie. The end-users who are interested will contact for more information and in this way some indication of the suitability of the new specie to the target market will be determined. It is important to remember that different individuals seek information in different ways and also interpret such information differently (Rogers,1962) Therefore, the merchant must be ready to respond to such request by providing fast accurate and relevant information.

Here I would like to draw attention to the findings of the Sales-staff survey (Chapter 6) The differences of opinion about the reasons of introduction of lesser-known species by the sales staff of a merchant MUST be eliminated, otherwise the prospective customer will both

¹This finding is in accordance with the arguments put forward by Hassinger (1959)

receive conflicting information and will be unable to evaluate the suitability of the specie to his particular needs.

The following factors play an important role at this stage (Engel, Kollat and Blackwell, 1978) :

(a) The decision making unit : It must have become apparent that the same principles apply to customers with and without past experience with lesser-known species (sec.5.2.3.2.-III- and 5.2.3.3-I-II-). But it was also clear that the structure of the DMU will determine the emphasis of the information provided.

(b) Perceived risk : This was found to correlate with two factors,

-i- The importance of Tropical Hardwoods to the overall operation of a firm, and

-ii- The proportion of the final product which is made out of Tropical Hardwoods. There has been a great deal of research into the subject of word-of-mouth influence in reducing much perceived risks associated with innovations (lesser-known species in this case), but it was found in the research that such factors do not play a major role in the Timber Trade (sec. 5.2.3.2-II-).

(c) Stage of market development : We have already established that lesser-known species

can be species which are entirely new or well-established. Therefore, depending on the specie there will be different amounts of information in the market; very little or none for entirely new species, to detailed information for well established ones. It is obvious that in the latter case it will prove easier to generate interest.

(d) Types of information : it is obvious that different sources of information will be sought for matters related to technical problems than availability etc.

It has been found that such information provision MUST be improved and become more accessible to end-users (sec.5.2.3.2-V-).

4. Evaluation : Once the end-user has gathered the necessary information he will evaluate (mentally) the impact that the lesser-known specie might have on his operations. Therefore, two basic factors determine his evaluation criteria :

-i- past experience and available information and,

-ii- his attitudes and motives behind the use of lesser-known species.

Those two factors are dealt with in some detail all through the end-users survey. For the attitudes of end-

users, contrary to what merchants believe, are not "negatively" predispositioned to lesser-known species (sec.5.2.3.3.-I-) but they are "sceptical" about their suitability.

Therefore at this stage certain actions are needed by the merchants in order to persuade their target audience(s) :

(a) Information on the criteria used to chose a specific specie : This could be in the form of compatible information to species currently used by the end-users. We have seen that there are two overall market segmentations which could provide guidelines to the approach, Manufacturers and non-manufacturers (sec. 5.2.2.4-I)

This segmentations together with the species which each segment regards as essential (sec. 5.2.2.4-I) can be used in designing the different information messages.

(b) Saliency to the needs : By this I mean timber characteristics. The merchant should establish such needs for his particular customers rather than rely on general books. This is because there is a very extensive segmentation in the needs of various end-users that no textbook can provide all the answers. Therefore the merchant has to examine his own customers (sec.5.2.2.4-III-).

(c) Reduce concern : The research has showed that this is one area where end-users with past experience with lesser-known species differ in their opinions from those without any experience (sec.5.2.3.2-III and 5.2.3.3.-I-). Therefore, different approaches are needed. For those with past experience a more specific message will be needed, emphasis should be placed on specific points (advantages) of the new specie; while for those without any past experience, a more broad approach, one covering most of the aspects of the introduction, is recommended.

5. Trial : The next consideration of an end-user will be whether or not to try the lesser-known specie. The main function at this stage is to demonstrate that the specie can indeed provide answers to areas of concern or problem areas. This is often influenced by the ability to try the specie on a small scale, i.e. trial order. Although this practice is often followed, it was also found that such orders were often at a different quality than the consequently full order (sec.5.2.3.2-IV-). Furthermore, it was found that technical advice and after sales service were only considered as average. Clearly those two points (i.e. uniformity of quality and high service must be improved).

6. Commercialisation : The end-user has now decided to place a full order. The problems of after sales

service and quality variations have already been discussed. But there are two further points which the merchant should bear in mind (Rogers & Shoemaker, 1973)

- :
- i- The later the adopter is, the more likely it is that he will discontinue using the specie
 - ii- The more integrated the lesser-known specie becomes to the operations of an end-user, the less likely he is to discontinue its use (e.g. if machinery modifications are performed to accommodate the new specie etc.)

This stage does not represent just the first full order placed by the end-user(s). It is a longer period during which the end-user becomes familiar with the properties of the specie and evaluates clearly its potential and suitability. The result will be either adoption (use on regular basis) or rejection. (I have found that feedback from the usage of some lesser-known species can take a very long time. A firm used Koto some years ago to manufacture doors for Banks (the weight of such doors is considerable because they are strengthened with metal. Problems started appearing only recently because the timber cannot withstand the pressures of the weight. Therefore, although the specie originally satisfied all the technical and mechanical requirements it eventually created problems which could not be detected during the trial period.)

Such events must be taken into consideration so as to avoid disenchantment by the customers. Therefore, provision must be made to stock at least some of the popular species and the tried specie(s) which the lesser-known one has substituted. We have seen that end-users can easily use an alternative specie (sec 5.2.2.7), therefore, by providing the tried and accepted alternative the customer is not lost and mutual trust is generated.

During this stage some effort should be made to reaffirm the end-user that he has taken the correct decision to try the lesser-known specie. This can be done by emphasising the benefits (advantages) of the lesser-known specie against the well established specie which is meant to compete. I believe that at this stage only one or two points should be emphasised.

7. Presentation of the message : I believe that many of the approaches have made the mistake stated by Fisher (1976) "If ignorance gives a zero score, existing predispositions can sometimes justify negative scores." This has happened because merchants have not yet realised that end-users do not have negative attitudes towards lesser-known species but are sceptical of the benefits that such species can provide.

This means that in some cases, having become aware, perhaps only somewhat vaguely, of the specie and of what it offers, end-users may have over-rated the problems and difficulties of the specie. Therefore, the message which is desired to be communicated should be done so in a direct way stating exactly those benefits salient to the particular

prospective customer. The three main reasons which should be mentioned are found to be :

- i- Price advantage over similar species,
- ii- Resemblance to established species, and
- iii- Suitability to a specific job. By combining the findings of various questions, (sec. 5.2.2.5. and 5.2.3.2-III-) it was found that customer demand was not a major factor but was "artificially" mentioned. This was found to hold for all end-use segments.

8. Channels of communication : The survey has shown that there are three main communication channels :

- i- Personal communications (from sales force)
- ii- Direct advertising (leaflets etc.) and
- iii- Background effects (image, good-will etc.)

It is very important that the image of the merchant will be such as to provide confidence (sec.5.2.2.11). The provision of information (direct advertising) on a supplier to customer basis, rather than advertising in magazines, will also be crucial in the willingness of an end-user to try a lesser-known specie. Finally, the personal communication by the sales force should capitalise on the impact of the above mentioned efforts and persuade the end-user to try the specie.

There is one point that I would like to make about the sales force. Their persuasiveness has been found to correlate directly with the image of their company and the presentation of their arguments (Cox, 1976). The order of performing the various tasks and their timing are very important. While the frequency of the message has very little effect (could even have negative results), the timing is absolutely crucial. It was found that many of the attempts to introduce lesser-known species were ill-timed to the effect that they were competing against other lesser-known species. (sec. 4.2.3.2-V-). Therefore, it is essential to perform some preliminary market research in order to establish whether a competitor has been promoting a similar specie at the same time as your firm is considering doing so. The TTF might be used as a source of information if all the major importers agree to provide such information.

9. Promotional activities : It is necessary to support any introduction by some promotional activities. But it is also important to understand that a single activity approach will prove unsuccessful. It must be clear that price cannot overcome on its own other major deficiencies of the lesser-known specie. A quite extensive analysis of the effect of different promotional activities can be found in the merchants survey (sec. 4.2.3.2-V1-).

One of the areas where the two main surveys (i.e. merchants and end-users) produced interesting results was the effect that price has on lesser-known specie introductions.

In the merchants survey it was found that price advantage did not guarantee success (sec.4.2.3.2-IV-) while, the end-users survey showed that price advantage and price competitiveness was of the highest importance (sec.5.2.2.12, 5.2.3.2-III- and 5.2.3.3-II-). There are two main reasons for those answers :

(a) Too many lesser-known species based their competitive appeal entirely on the price element and at the same time their physical and technological properties were very much inferior to established species in the market, and,

(b) Price must be attractive in the minds of the end-users and not simply in the opinion of the merchants.

End-users attitudes : End-users showed that they are not only very "sensitive" to price changes of individual species but also that they are prepared to "shop around" for more competitive prices (sec.5.2.2.10). This applies equally to all end-use segments. When the reluctance to pay a premium price was analysed further, it was found that the size of the end-using firm, the importance of Tropical

Hardwoods to the operations of the firm and the structure of the decision making unit play a major role in the formulation of such attitudes towards price increases (sec.5.2.3.4.)

Pricing Methods : As has already been explained (sec. 2.1.4), pricing is very much cost-dominated and is influenced very little by other marketing policies.² And the role of special prices has been defined as one of no real significance to marketing objectives.

Turning now to the question of actually pricing a lesser-known specie, certain contributing factors must first be stated :

(a) There will be no price competition from other merchants as a direct result of the introduction of the "new" specie. The same will apply for the established species which the "new" specie is meant to compete with. There are two reasons for this, first that competitors do not usually employ such tactics to safeguard their market shares, and second because competitors are not always aware of particular lesser-known specie introduction.

(b) The price of a lesser-known specie should be seen as "...the latest arrival in a competitive field and hence its price will

²This is in line with the findings of Atkins & Skinner (1975)

have two related meanings to the potential customer, one of which is the cost to him and the other an indication of its quality." (Gabor & Granger, 1965).

(c) The perceived cheapness or dearness of the lesser-known specie will be a function of its price against the prices being charged for species with similar properties and uses. (Emery, 1962).

In combining the above together, there are certain rules which should be followed in defining a pricing strategy through the various stages of the specie diffusion :

Rule 1 : Target audiences more receptive to price inducements are decision making units consisting of people with managerial responsibilities rather than technicians.

Rule 2 : Price inducements should be aimed at customers who do not use Tropical Hardwoods as their main raw material. Ideally, second or third importance overall.

Rule 3 : There is no point in introducing a lesser-known specie unless the merchant can offer a really competitive price. This advantage must be evident to end-users and should be against species with similar uses and properties.

Rule 4 : If system selling (see Ancillary services) is employed, then the merchant should try to incorporate the "new" specie into his product mix. This way the price could be made more attractive (by being "subsidised" from other more established products in the mix) and gain acceptance easier (as we have seen in sec.2.1.4.4. overall price lists of various merchants are different).

Rule 5 : A "market penetration" (Dean, 1950) approach should be employed during the initial stages of the introduction. (Although the reasons in this instance are different from those given by Dean, it will still be advisable to charge the lowest possible price at this stage).

Now, that the initial price has been set the strategy should follow the progress of the species acceptance/rejection in the market. Starting at a low price with end-users who do not use Tropical Hardwoods as their main material, the specie could achieve a high ratio of trial (although a low rate of usage). This will provide information to managers on the potential acceptance of the specie and its best applications. Once the specie has been accepted and the end-use segment most favourably

disposed has been established, then the merchant should try to introduce the specie to his customers who mainly use Tropical Hardwoods with similar properties. He should also introduce the lesser-known specie to those who use the most expensive (in money terms) of the alternative species. This introduction to new customers should be made at an increased price, closer to the price they pay for their current material.

The price can further be increased to match that of other similar species as soon as the latest of the target markets has accepted the specie, there is little fear of losing such customers (once they have accepted the lesser-known specie) because the research has found that they are more prepared to pay a premium price for material that they regard as suitable to their operations.

By charging a low price initially (this does not mean at a loss, it just means at a very small profit or at a break-even level) it will prove easier to sell the specie even if it will not prove successful. This approach will be better than the one which is often employed at the moment, that is the price is dropped once the merchant has realised that the specie has not been accepted. The advantages of the proposed strategy are :

- (a) The merchant/importer minimises the risk associated with long stock holdings of a specie which has a non-existent demand.
- (b) By not trying to maximise short-term returns the long-term future of a specie can be established without endangering its potential.

These services are not the core of the plan but of a supplementary nature whereby the benefits provided by the product are enlarged and made effective. Some of the more important ones are (sec.4.2.4.3. and 5.2.4. and 5.2.2.12).

1. Delivery/Distribution

It is essential to establish prompt quotations followed by speedy delivery at the desired date and in the form of material required. There are no major problems associated with the existing distribution structure of the main merchants. Furthermore, the observed emphasis on forward integration can only provide more opportunities of promoting lesser-known species. (Rich, 1980-b-).

2. Finance :

This mainly includes dealings with accounts and credit facilities. The research has shown that this is of secondary importance in the opinion of the end-users, nevertheless they are satisfied with the present service which is provided.

3. Application service :

This is the case of highly complex provision of advice, We have seen that overall advice is not regarded as satisfactory, therefore it is my opinion that such advice

should be given by specialised technicians who are employed by the merchants for this precise purpose. In this way the sales force will be able to concentrate on its primary task rather than trying to solve technical queries about which it has very little knowledge.

4. System Selling

In the case where the merchant can offer a whole range of wood based products (sec. 4.2.4.3.) and overall services (sec. 5.2.2.12), then a system selling¹ approach can be adopted. This way the risk is reduced for both the merchant and the end-user because the lesser-known species represents only a small part of an otherwise familiar mix of materials. At the same time the merchant can create a degree of product differentiation based on the provision of a complete service (Mattsson, 1973)

1

Definition (Fisher, 1976) : System selling seeks to perform a complete function for the customer and provide everything necessary to perform that function.

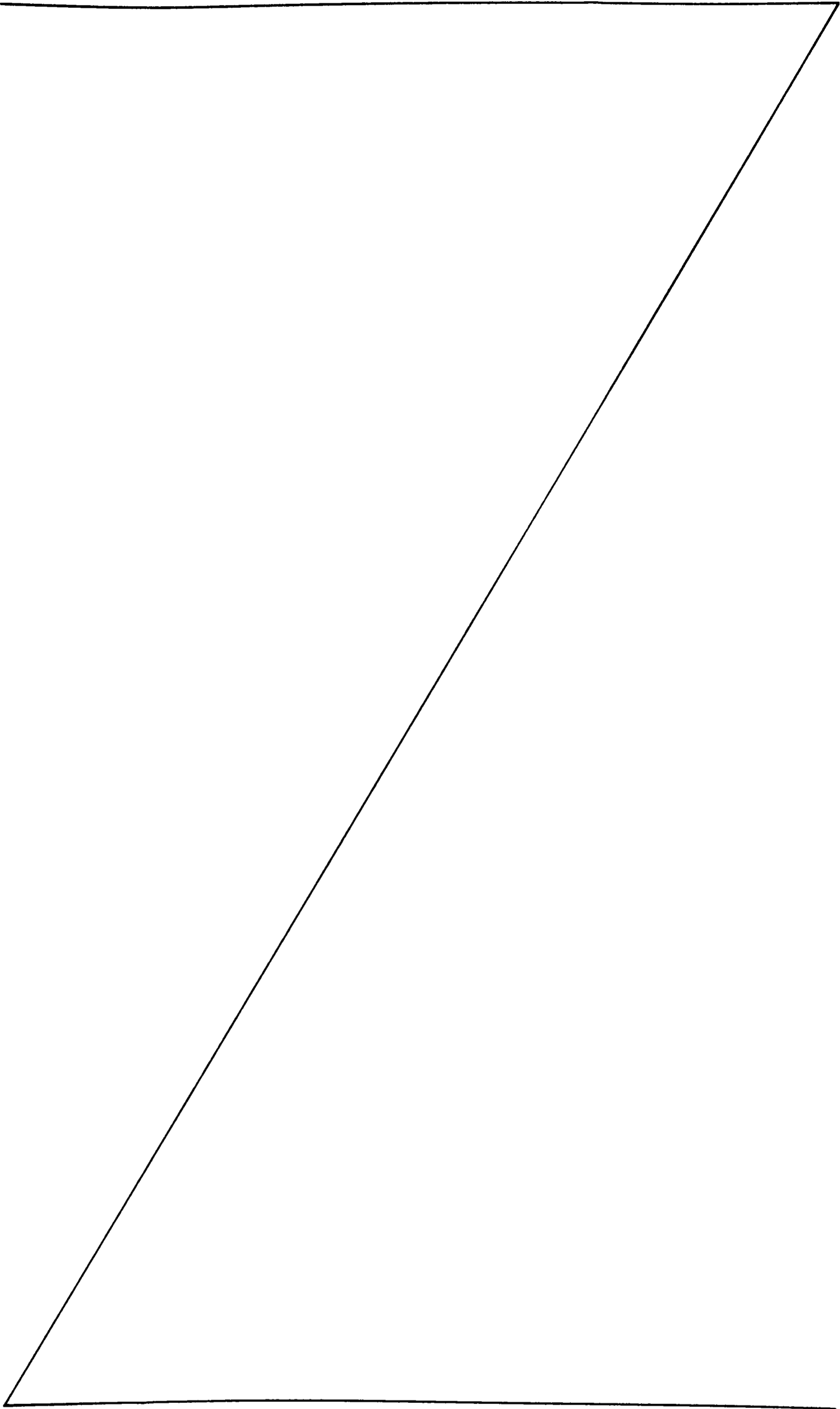
As has been made clear during this study, monitoring must take place at every stage of the process. Each intermediary result and deviation must be examined against the objectives and goals in order to take corrective action.

At some stage (about six months after the campaign has started) an overall evaluation of what has been achieved will be necessary. The aim will be to examine whether the particular specie should either

- i- Be added to the stock list on a regular basis, the specie has become accepted by the market (success).

- ii- Be left unsupported by any further marketing efforts in the belief that gradually it will be sold, no further contracts are placed and the specie is regarded as a failure,

- iii- Continue the present course of action or modify/extend the marketing efforts because the time span is not long enough to provide conclusive indications.



CHAPTER 8

CONCLUSIONS AND FURTHER RESEARCH

Finally, in this chapter some conclusions about the research as a whole are stated and qualifications about the usefulness of the findings are given. Further research is also suggested.

If we go back to the beginning of the text and remind ourselves of the objectives of this study I hope that will become clear that the research has achieved in giving answers to all of them. I also appreciate that the analysis of the surveys is somewhat very detailed and exceeds the immediate scope of this study. Nevertheless, I believe that the findings which are presented throughout the text could be useful in other similar research and could also be applied in cases of a more broad marketing plan which does not deal only with lesser-known Tropical Hardwood species.

But it is interesting to note certain findings which came to light unexpectedly and could prove very useful in the understanding of the problems involved in the promotion of lesser-known species :

-i- There is an overall misunderstanding from the merchants side on some beliefs/opinions of their customers, -a- they believe that end-users have negative attitudes towards lesser-known species, while this study found that end-users are sceptical about the suitability of such species but will, nevertheless be prepared to try such species.

-b- merchants believe that there is strong customer loyalty while it is

found that end-users employ more than three suppliers for their Hardwood materia.

-c- they also believe that end-users have all the information which they need in order to evaluate the potential of lesser-known species and overcome any problems, whereas it was found that end-users were not satisfied with the amount and the accessibility of such information. No doubt, there are many other such areas of conflict which this study did not examine.

-ii- There is a very wide range of species which can be classified as lesser-known. It is the past experience of individual merchants and end-users which dictates which are regarded as lesser-known to each one of them.

-iii- There is not a single end-use segment which is more or less innovative (ready to accept lesser-known species) than others. It depends entirely on a particular end-users' past experience and his trust in his supplier(s).

-iv- Most of the merchants who have introduced lesser-known species in the past have tried to shorten the necessary process of deciding on a suitable specie by placing an order for the specie before a closer examination of its potential has been performed.

The above findings were combined with the ones on particular marketing efforts and it was thought essential to have a complete marketing plan if a successful introduction of lesser-known species is to take place. Unless the firm who is introducing the new specie is geared to deal with the financial and marketing problems associated with such introductions, it will be better to leave such activities to other merchants. To design a marketing strategy which could be applied to all the possible cases was found to be unrealistic, instead it was found that there were certain guidelines which were equally true for all the marketing alternatives. Therefore, a total marketing plan was proposed. Such a plan should be based on a very selective promotional effort to only certain customers of a merchant. Only one lesser-known specie should be promoted at any period of time, but the selection of the specie should be done following an examination/evaluation of a number of alternative species. Therefore, it is important to search the market continuously so as to have as many alternative species as possible. Finally, the marketing strategy which the merchant decides- on must take into consideration the stage of the diffisuion process.

One of the major problems which the study had to overcome was the lack of any similar previous work. Particularly on buying behaviour. Therefore, much of the research had to be devoted to establishing attitudes, beliefs, buying behaviour etc. But it must be clear that such research was not the main objective of the study and therefore not enough time was devoted to such factors.

I also believe that further research on the marketing of Tropical Hardwoods should be closely related to marketing of other wood-based products as well. Some of the areas which might be of interest will be :

- i- Identification of the particular characteristics and 'values' which are associated with individual species and differences between various wood-based products.
- ii- Psychological aspects related to timber and timber products by the general public and the specifiers,
- iii- Reasons of preference between suppliers
- iv- Factors affecting buying behaviour, in terms of the purchasing problem, the buyer and the buying environment.

These are just some of the areas which will provide more information. But probably the most important factor which

needs to be investigated is the way that such information could be communicated in a manner so as to be used to the benefit of the Trade as a whole.

As a final comment, I would like to say that during my investigations I realised that the Timber Trade is very much a one merchant one customer market. This characteristic gives the Trade a very complex and individual nature which provides many research opportunities and makes the analysis of the market very attractive as a subject of study.

NOTE

The numbering of the Tables, Appendices, Figures and Graphs in this study follow the numbers of the section to which they are referred. Therefore, they are not in an absolute numerical order.

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APPENDIX 1.1/1

Countries considered as Tropical

(A) Africa

Angola	Guinea	Rwanda
Botswana	Ivory Coast	Senegal
Burundi	Kenya	Sierra Leone
Cameroun	Liberia	Somali Republic
Central African Republic	Madagascar	South West Africa
Chad	Malawi	Sudan
Congo Brazzaville	Mali	Tanzania
Dahomey	Mauritania	Togo
Equatorial Guinea	Mozambique	Uganda
Ethiopia	Niger	Upper Volta
Gabon	Nigeria	Zaire
Gambia	Portuguese Guinea	Zambia
Ghana	Zimbabwe	

(B) Asia/Pacific

American Samoa	India	Sabah
Bangladesh	Indonesia	Sarawak
British Solomon Islands	Laos	Singapore
Brunei	New Caledonia	Sri Lanka
Burma	New Hebrides	Thailand
Cook Islands	Norfolk Islands	Timor
Cambodia	Pakistan	Viet Nam
Fiji	Papua New Guinea	West Malaysia
French Polynesia	Philippines	Western Samoa

(C) Latin America

Bolivia	French Guiana	Nicaragua
Brazil	Guadaloupe	Panama
British Honduras	Guatemala	Paraguay
Colombia	Guyana	Peru
Costa Rica	Haiti	Puerto Rico
Cuba	Honduras	Surinam
Dominican Republic	Jamaica	Trinidad & Tobago
Ecuador	Martinique	Venezuela
El Salvador	Mexico	

APPENDIX 2.1/1

TTF membership breakdown keys:

Divisions

Importers	I
Agents	II
International	III
Merchants	IV
National Sawmilling Association	V

Sections

National Softwood Importers	1
National Hardwood Importers	2
Panel products importer	3
National veneer	4
Sleeper and pole	5
Softwood agents and brokers	6
Hardwood agents and brokers	7
Panel products agents and brokers	8

Area organisations

Bristol Channel Timber Trades Association	A
East Anglia " " "	B
East Midlands " " "	C
Grimsby & Immingham Timber Importers Association	D
Hants and Dorset Timber Trades Association	E
Humber District " " "	F
Irish Timber Importers Association	G
London Area Timber Trades Association	J
North West " " "	K
North East Coast " " "	L
Northern Ireland Timber Importers Association	M
Scottish Timber Trades Association	N
South East " " "	O
Western Counties " " "	Q
West Midlands Area Association of the Timber Trade Federation	S
West Riding of Yorkshire Timber Trades Association	T

Source: T.T.F. Yearbook 1980/81

Appendix 2.2/1

Species analysed as Lumber

Afrormosia	Mahogany - Afridan
Abura	" - Brazilian
Afzelia	Meranti
Agba	Makore
Antiaris	Mansonia
Avodire	Mengulang
Ayan	Merbau
Balau	Niangon
Berlinia	Nyatoh
Bubinga	Obeche
Ceiba	Okan
Cordia	Okoume
Dahoma	Opepe
Danta	Omu
Ekki	Padauk
Gredu Nohor	Pterygota
Geronggang	Punah
Gerutu	Ramin
Greenheart	Sapele
Guarea	Sepetir
Iroko	Teak
Idigbo	Utile
Ilomba	Virola
Jelutong	African Walnut
Keruing	Yang
Kapur	Yellow Meranti
Kempas	
Limba	
Lauan	

Appendix 2.2/2.

Species analysed as Logs

Afrormosia	Obeche
Abura	Okoume
Afzelia	Omu
Agba	
Antiaris	Pterygota
Ayan	
	Sapele
Berlinia	
Bubinga	Utile
Ceiba	African Walnut
Cordia	
Danta	
Ekki	
Gedu Nohor	
Greenheart	
Guarea	
Iroko	
Idigbo	
Ilomba	
Limba	
Mahogany - African	
Makore	
Moabi	
Niangon	

Appendix 2.2/3

According to Erfurth and Rusch (1976)

Symbols used

Density:	L = low	up to 0.50 gr/cm ³
	M = medium	0.50 to 0.65 gr/cm ³
	U = upper	0.65 to 0.80 gr/cm ³
	H = high	0.80 and up gr/cm ³

WORK	= Workability)	
SHR	= Shrinkage)	A = good
FIN	= Finishing)	
STR	= Strength)	B = medium
DUR	= Durability)	
LOGF	= Log form)	C = bad
OCC	= Occurrence)	
COL	= Colour)	
TEX	= Texture)	
GR	= Grain)	str = straight int = interlocked

Colour Yellowish includes whitish and yellow

Reddish/brown includes yellow brown, brown, reddish brown

Reddish includes dark red, red, light red.

Appendix 2.2/4

The species which Erfurth & Rusche (1976) regarded as lesser-known all satisfied four basic criteria:

- (a) were produced in quantities below 1000m³ during the year of reference,
- (b) were botanically related to already commercially used species,
- (c) their log form and diameter were not below grade -B-, and
- (d) the average of all use-properties was not below grade -B-.

APPENDIX 4.1/1.

The final design of the merchants questionnaire
can be found in the pocket at the end of the
thesis.

APPENDICES 4.2/1 & 4.2/2

4.2/1

Species which regarded as essential
to every stockist.

<u>Species</u>	<u>Supplying Area</u>		
	<u>Africa</u>	<u>S.E. Asia & Pacific</u>	<u>S. America</u>
Brazilian Mahogany			24 ^{a/}
Lauan		13	
Iroko	8		
Keruing		6	
Ramin		5	
African Mahogany	5		
Sapele	3		
Teak		2	
Utile	1		
Meranti		1	
Kempas		1	

^{a/} Number of times mentioned as essential by different respondents.

4.2/2

Average number of species stocked
by area of supply

<u>Species Stocked</u>	<u>Supplying area</u>						
	<u>West Africa</u>	<u>Africa else-where</u>	<u>Europe</u>	<u>Pacific</u>	<u>South East Asia</u>	<u>North America</u>	<u>South America</u>
Average number	6	1	2	2	4	2	2

APPENDIX 4.2/3

Lesser-known species mentioned

by the merchants

Anyan (1) ^{a/}	Massaranduba (1)
Antiroba (2)	Merbau (1)
	Maccacauba (1)
Balau (3)	Mandioaueira (2)
Bosrolocus (1)	Mahogany Brazilian (2)
Boxwood Indian (1)	
	Niangon (1)
Cocobolo (1)	Nemesu (1)
Calophyllum (4)	Nyatoh (1)
Castanheira (2)	
Cedar Bolivian (1)	Pau Marfin (2)
	Pometia (1)
Freijo (2)	Para Para (1)
Geronggang (1)	Quaruba (2)
Gerutu (1)	
	Sepetir (1)
Imbuya (1)	Seraya Light (1)
Koto (2)	Taun (7)
Kauvula (2)	Tatajuba (3)
	Tetraberlinia (1)
Lauan (3)	
Lauro Velmeho (1)	Vasa (1)
Lapacho (1)	
Lauan Light Red (1)	Wenge (1)
Laurel Indian (1)	Walnut American (non-tropical) (1)

^{a/} Number in brackets represents mentionings by different respondents

APPENDIX 4.2/4

General Reasons for Introduction/Success/Failure

<u>General Reasons</u>	<u>Number of species introduced</u>			<u>Success</u>			<u>Failure</u>			<u>Introduced</u>				
	<u>Main Reason</u>	<u>Contributing</u>	<u>M & L Rating</u>	<u>Main Reason</u>	<u>Contributing</u>	<u>M & L Rating</u>	<u>Main Reason</u>	<u>Contributing</u>	<u>M & L Rating</u>	<u>Main Reason</u>	<u>Contributing</u>	<u>M & L Rating</u>		
Suitability for a job	6(1)*	4	10(2)	8(1)			1	6(3)	7	4	7	10	17	12
Substitute for a fading	2	8(1)	10(2)	6(3)			6(1)	4	10(3)	8(3)		15(2)	23(2)	15.5(2)
Fill a gap in the market	3(3)	1	4	3.5			5(2)	9(1)	14(1)	9.5(1)		11(3)	21(3)	15.5(2)
A good opportunity	1	1	2	1.5			2	5	7	4.5		7	12	8.5
Price advantage	4(2)	8(1)	12(1)	8(1)			5(2)	7(2)	12(2)	8,5(2)		18(1)	30(1)	21(1)
Ample occurrence	1	6(2)	7	4			-	1	1	0.5		8	9	5
Fashion	-	-	-	-			1	1	2	1.5		1	2	1.5
Reasonable freights-		2	2	1			-	1	1	0.5		3	3	1.5
Reliable source	2	6(2)	8	5			-	2	2	1		10	12	7

* Number in parentheses indicate rank in each column

** The rating score is a weighted average of the frequency (percent) of main and contributing reasons. Main reasons are scored 1.0 and contributing reasons scored 0.5 to yield a rating of 0-100%.

APPENDIX 4.2/5

Species which the lesser-known species
were to supplement and the eventual outcome

<u>Well-established species</u>	<u>All</u>	<u>Success</u>	<u>Outcome</u>	
			<u>Failure</u>	<u>Too early</u>
Lauan	9 ^{a/}	2	6	1
Meranti	6	4	1	1
African Mahogany	6	2	3	1
Ramin	4	-	4	-
Obeche	3	2	1	-
Sapele	3	1	2	-
Keruing	3	1	2	-
Iroko	3	2	1	-
Greenhart	1	1	-	-
Ekki	1	1	-	-
Rosewood	1	1	-	-
European Walnut	1	1	-	-
Dib tou	1	-	1	-
Ash	1	-	-	1
Abura	1	-	1	-

a/ The figures represent the paired-comparison position between a specific established specie and the lesser-known which was introduced in order to supplement the uses of the established specie - (see C.12 viii & xiii).

APPENDIX 4.2/6.

Total scores and eventual outcomes

The following technique was applied only on successful introductions (i.e. 14 different species).

We have the ratings given to each reason of introduction (Appendix 4.2/4), and by adding those we have a total rating factor. Now, by dividing each rating of individual reasons of introduction by the total rating factor, we obtain a weight factor for each reason of introduction. These weights are specifically calculated to provide indication about the likelihood of the lesser-known specie being successful.

<u>Reason of introduction</u>	<u>Rating (total average)</u>	<u>Weight (individual % to the total of the rating)</u>
Price advantage	8.0	0.29
Occurrence in the tropics	4.0	0.15
Reliable source of supply	5.0	0.18
Suitability for a specific job	8.0	0.29
Reasonable freights	1.0	0.04
Good opportunity	<u>1.5</u>	<u>0.05</u>
	27.5	1.00
	=====	=====

APPENDIX 4.2/7

The outcome of lesser-known specie introduction
and comparisons against established species

<u>Eventual outcome and comparison</u>	<u>Areas of comparisons</u>					
	<u>Price</u>	<u>supply condi- tions</u>	<u>Work before shipment</u>	<u>Job suita- bility</u>	<u>Shipping conti- tions</u>	<u>Grading</u>
Success						
Better	13 ^{a/}	8	5	7	4	6
Same	4	10	11	11	14	12
Worse	2	1	1	1	1	1
Failure						
Better	16	2	1	1	-	2
Same	3	8	12	6	10	10
Worse	-	8	7	12	9	7

^{a/} The figures represent the paired-comparison position between a specific established specie and the lesser-known which was introduced in order to supplement the uses of the established specie - (see C.12 viii & xiii).

APPENDIX 4.2/8

Promotional activities and the outcome

<u>Promotional activities employed</u>	Outcome			
	<u>All</u>	<u>Success</u>	<u>Failure</u>	<u>Too early</u>
Only price inducements	-	-	-	-
" adverts. in specialised press	-	-	-	-
Only educating customers	10	3	5	2
" sales force intensification	-	-	-	-
Other activities	2	1	1	-
Price and sales force	4	1	3	-
Price and education	7	3	2	2
Price, education and sales force	2	-	1	1
Education and sales force	6	6	-	-
Adverts. and education	7	-	1	-
Adverts. education and sales force	1	1	-	-

APPENDIX 5.1/1

Trade Associations.

1. Association of Musical Instrument Industries
62 Park View, Hatch End,
Pinner, Middx.
01-428 4700
2. Furniture Industry Research Association
Maxwell Road,
Stevenage, Herts.
0438-3433
3. British Toy Manufacturers Association Ltd.
Regent House, 89 Kingsway,
London W.C. 2.
01-701 7271
4. British Woodwork Manufacturers Association - renamed
British Woodworking Federation
82 Cavendish Street,
London W1M 8AD.
01-580 5588
5. Fencing Contractors Association
c/o Binder Hamlyn,
Carolyn House,
Dingwall Road,
Croydon CR9 2PI
01-681 3521
6. Hardwood Flooring Manufacturers Association
Clareville House,
Oxendon St., London SW.1.
01-839 3381
7. National Association of Shopfitters
Lenning House,
Masons Avenue,
Croydon, Surrey.
Upper Warlingham 820-4961
8. National Caravan Council Ltd.
43-45 High Street,
Weybridge, Surrey. KT3 8BB.
Weybridge - 97-51376.
9. National Federation of Building Trade Employers
82 Cavendish Street,
London W1M 8AD.
01-580 4041.
10. National Society of Master Patternmakers
c/o E. W. Smith,
139-143 Deylin Avenue,
Witton, Birmingham B6 7B6.
021-327 4698

- | | |
|---|--|
| 11. Piano Manufacturers Association Ltd. | c/o Ramsdens, 22 Beach Rd., Lowestoft, Suffolk. NR32 1AE. 0502-62819. |
| 12. Ship & Boatbuilders National Federation | Boating Ind. House, Vale Road, Oatlands, Weybridge, Surrey. KT13 9NS. 97-54511 |
| 13 Association of British Ply & Veneer Manufacturers | 25/35 City Road, London, E.C. 1. 01-724 5801 |
| 14. British Furniture Manufacturers Federation Association | 17 Berners Street, London, W. 1. 01-724 0854 |
| 15. Dock & Harbour Authorities ⁸ Association | 18 Queen Anne's Gate, Westminster, London S.W. 1. |
| 16. Federation of Master Builders | 33 John Street, Holborn, London S.W. 1. 01-242 7583 |
| 17. Inland Waterways Association Ltd. | 114 Regents Park Road, London N.W. 1. |
| 18. Society of Motor Manufacturers & Traders | Forbes House, Halkin Street, London S.W. 1. |
| 19. Timber Building Manufacturers Association of Great Britain, Now: Prefabricated Building Manuf. Ass. of Great Britain. | Westgate House, Chalk Lane, Epsom, Surrey. 78-40044. |
| 20. Timber Container Confederation | Epworth House, 25/35 City Road, London, E.C. 1. |
| 21. TRADA | Hughenden Valley, High Wycombe, Bucks. HP14 4ND. 0240-24 3091 |

22. T.T.F.

Clareville House,
Whitcomb Street,
London W.C. 2.
01-839 1891

23. Masters Carvers Association

c/o D.W. Roberts,
16 Hinton Road,
London SW24 0HJ.
01-733 5340.

Source: 1) Millard (1979)

Trade Association and Professional Bodies of the U.K.

2) Hyman (1979)

Directory of British Associations

APPENDIX 5.1/2.

The final design of the end-users questionnaire
can be found in the pocket at the end of the
thesis.

APPENDIX 5.2/1

Species used on a regular basis

Brazilian Mahogany	(49) ^{a/}
Iroko	(39)
Afrormosia	(36)
African Mahogany	(35)
Lauan	(31)
Teak	(29)
Meranti	(21)
Utile	(20)
Ramin	(17)
Oak (all)	(16)
Keruing	(15)
Ash	(11)
Agba	(8)
Idigbo	(7)
Beech (all)	(6)
Sapele	(5)
Rosewood	(4)
Dibetou	(3)
Kauvula	(3)
Obeche	(3)
Abura	(2)
Jelutong	(2)
Makore	(2)
Danta	(1)
Doussie	(1)
Emeri	(1)
Kapur	(1)
Virola	(1)
Koto	(1)

a/ Figures in brackets represent the number of mentionings irrespective of importance.

APPENDIX 5.2/2.

Reasons for using specific Tropical species

<u>Species</u>	<u>Tradi- tionally used</u>	<u>Custo- mers demand</u>	<u>Proper- ties suita- bility</u>	<u>Price Advan- tage</u>	<u>Guaran- teed Supplies</u>	<u>Suitable to machines</u>
Agba		1	2		3	3
Afrormosia		1	2	3		
Abura			3	1	2	3
Danta		1	2			2
Dibetou	3	1	1	3		
Doussie		1	2		2	
Emeri	2	1		2		
Iroko		2	1	3		
Idigbo		1	2	3		
Jelutong			1	2		
Kapuer			1	2	2	
Keruing		2	1	3		
Kauvula		1	1		1	
Koto			2	1	2	
Lauan		1	2		3	
Makore		1		1		3
Meranti		1	3	2		
Braz. Mahogany		1	2		3	
Afr. "	3	1	2	3		
Obeche	2		1	2		
Ramin		2	1	3		
Rosewood	2	1	3			
Sapele		1		1	1	
Teak		2	1	3		
Virola						1
Utile	3	1	2			

(The figures represent the overall order of preference)

APPENDIX 5.2/3

Species which were regarded as essential

Brazilian Mahogany	(19) ^{a/}
Teak	(12)
Afrormosia	(11)
Iroko	(11)
African Mahogany	(10)
Lauan	(9)
Meranti	(7)
Utile	(6)
Ramin	(4)
Oak (all)	(4)
Agba	(3)
Dibetou	(3)
Keruing	(3)
Rosewood	(2)
Sapele	(2)
Ash	(1)
Danta	(1)
Daussie	(1)
Jdutong	(1)

a/ Number in brackets represents tht total number of mentionings irrespective of the importance.

APPENDIX 5.2/4.

Number of suppliers by end-use segment

<u>End-use segment</u>	Number of suppliers					
	<u>All</u>	<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four+</u>	<u>No answer</u>
Joiners	46	4	3	10	26	3
Flooring Manuf.	-	-	-	-	-	-
Shopfitters	16	-	3	3	7	3
Furniture Manuf.	29	1	4	5	10	9
Ship/boat builders	2	-	-	-	2	-
D.I.Y.	6	-	2	-	3	1
Transport	-	-	-	-	-	-
Turners	4	-	-	1	1	2
Timber merchants	15	-	-	3	11	1
Pattern makers	4	-	2	1	-	1
Box makers	4	-	1	2	-	1
All	126	5	15	25	60	21

APPENDIX 5.2/5

	<u>Satisfactory</u>		<u>Average</u>	<u>Unsatisfactory</u>		<u>No answer</u>
	<u>very</u>	<u>slightly</u>		<u>slightly</u>	<u>very</u>	
Ability to meet delivery dates	50	17	31	1	-	8
Prompt and comprehensive quotation	61	17	19	2	-	8
Provision for technical advice for problem solving	10	10	49	13	12	13
Ease of contact with a person in authority	50	22	25	2	-	8
Technical after sales service	8	13	50	14	8	14
Replacement facilities	22	17	33	18	4	13
Stock a wide range of materials and sizes	29	22	32	10	4	10
Quality of supplies	41	31	27	-	-	8
Dealings with your account	43	20	31	3	1	9

APPENDIX 5.2/6

	Agree		Not certain	Disagree	
	<u>Strongly Slightly</u>	42		<u>Slightly Strongly</u>	<u>No answer</u>
Mechanical and technical advances have made acceptable to the trade species that were not before	9	42	40	8	4
The current trend is towards prepared materials and away from solids	19	28	18	27	9
There is no real difference between the products on offer between the various Hardwood merchants	22	35	7	16	21

APPENDIX 5.2/7

By using two different fractions from the sections which comprised the sample frame, it meant that in strict terms the replies should be weighted according to the section they came from. Therefore, it was considered necessary to examine the results given by a weighted data-set; the weights were calculated on the basis of the response rate from each section (see End-users survey, response rate, K5-5), and were, for section 25= $191/116=1.65$ and for section 26= $690/105=6.57$. These weights provided a total number of firms using Tropical Hardwoods among those in the sample frame, those were 425 out of 881, and the total number of end-use segments increased to 490 (see Table 5.2/7/1).

A number of shortcomings were detected in the use of such weighted data:

- (a) in the case of minor end-use segments, it provided the opportunity of drawing conclusions in areas where the raw data was not sufficient, but such conclusions could be very misleading, especially in the cases where the increase in replies to the particular segment was entirely due to one reply weighted by 6.51,
- (b) in most of the results there was very little difference between the two methods of analysis, from Table 5.2/7/2 we see that all the major segments provided almost identical results, only some of the minor segments (i.e. ship/boat builders, D.I.Y., and pattern makers) showed some differences. Such differences were due to the distortion of the overall number of replies created by the use of weights,

- (c) the interpretation of the raw (unweighted) data is more realistic, it presents a better feel for the respondents and their behaviour,
- (d) the use of weights complicates the interpretation of the results, the analysis has to take into consideration exaggerated results due to the weights; the interrelation of the questions becomes difficult to be analysed and even more important the very important questions about specific species used and lesser-known species tried in the past cannot be weighted and therefore the interpretation becomes misleading to a certain extent, and,
- (e) finally, the aim of this study is not quantitative but qualitative, if the study was designed to provide answers to question about the size of the Tropical Hardwood trade then the use of weights would have been essential, but here the aim is to establish behavioural variables which affect decisions in the trade and the questionnaire is designed to answer such questions, therefore the nature of the questions is not suitable to the use of weights.

For all these reasons, it was decided that the main tabulations used in this study and referred to in the main text should be based on the unweighted data.

5.2/7/1

End-users breakdown

<u>End-use segments</u>	Raw		Weighted	
	<u>data</u>	<u>% of 126</u>	<u>Data</u>	<u>% of 490</u>
Joiners	46	37	149	30
Flooring manufacturers	-	-	-	-
Shopfitters	16	13	90	18.5
Furniture manufacturers	29	23	150	31
Ship/Boat builders	2	1	8	2
D.I.Y.	6	5	15	3
Transport	-	-	-	-
Turners	4	3	7	15
Timber Merchants	15	12	49	10
Pattern makers	4	3	11	2
Box makers	4	3	11	2
All	126	100	490	100

5.2/7/2

Essential species by end-use segments

End-use segments	Yes		No		No answer	
	Raw data No. % (Adj)	Weighted No. %	Raw data No. %	Weighted No. %	Raw data No. %	Weighted No. %
Joiners	17 37	57 38	29 63	92 62	-	-
Shopfitters	5 31	28 31	11 69	62 69	-	-
Furniture manufacturers	13 45	74 49	16 55	76 51	-	-
Ship/Boat builders	1 50	6 75	1 50	2 25	-	-
D.I.Y.	3 50	5 33	3 50	10 67	-	-
Turners	2 50	3 43	2 50	4 57	-	-
Timber merchants	9 60	29 59	6 40	20 41	-	-
Pattern makers	2 50	3 27	2 50	8 63	-	-
Box makers	-	-	4 100	11 100	-	-
No answer	-	-	-	-	-	-
	52 41	205 42	74 59	285 58	-	-

APPENDIX 6.1/1.

The final design of the sales-staff questionnaire
can be found in the pocket at the end of the thesis.

APPENDIX 7/1

Definition of the terms used :

δ = End-use segment size

ψ = Reflects the rate of increase
over time in the expected
profitability of adoption

β = A scale parameter reflecting
the net influence of firm size
on profitability

b = Speed of diffusion

Source : Davis (1979)

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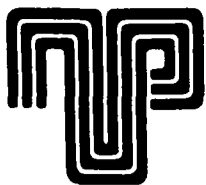
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SURVEY OF LESSER-KNOWN HARDWOOD SPECIES / MERCHANTS

Dear

I am a Research Student for a Masters Degree (MPhil) and I am investigating the Marketing of Hardwoods in the U.K. market. The aim of my research is to suggest possible strategies for the future successful marketing of lesser-known Hardwood species, and by this I mean, marketing strategies that will be of help in the profitable introduction both in volume and money terms of Hardwood species that have not previously been Commercially used to any great extent.

Your firm has been approached on the basis of turnover and involvement in the Timber Trade as a whole and I would be most grateful if you could complete this questionnaire and return it to me as soon as possible*(a self-addressed stamped envelope is enclosed). The completion of this questionnaire will not take much of your time and it will be of immense value and help to my research.

I would like to make it absolutely clear that any information given to me will be treated in the strictest confidence, the details are immediately put into coded form and cannot be disclosed to anyone in such a way that it could identify you personally.

Finally I would like to thank you in advance and express my gratitude for your co-operation and assistance in my studies.

Yours sincerely,

S. Kalafatis

P.S. If you wish to receive an extract of the findings of this survey, please complete the appropriate form at the end of the questionnaire.

* in the event that your firm does not use Hardwoods at all could you please return the questionnaire uncompleted.

THIS SECTION TO BE COMPLETED BY ALL RESPONDENTS

SECTION A

1. Which of the following do you stock? (Please tick each one stocked) and then rank them in order of importance (in volume terms M3) to the operations of your firm (mark as 1 the most important etc.).

	Stock Rank	
Tropical Hardwoods	<input type="checkbox"/>	<input type="checkbox"/>
Imported Softwoods	<input type="checkbox"/>	<input type="checkbox"/>
British (Hardwoods and Softwoods)	<input type="checkbox"/>	<input type="checkbox"/>
Plywood	<input type="checkbox"/>	<input type="checkbox"/>
Particleboards	<input type="checkbox"/>	<input type="checkbox"/>
Veneers	<input type="checkbox"/>	<input type="checkbox"/>
Others - specify	<input type="text"/>	

2. What is roughly the number of Tropical Hardwood species that you stock at any given time (irrespective of volume)?

3. Please specify the 5 largest, in volume terms, (M3) (in order of importance).

4. Would you now list the 5 largest, in value terms, (£) (again in order of importance)

5. Do you believe that your stock of Hardwood species is:

- a) more than the optimum number
- b) the optimum number
- c) less than the optimum number

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

6. How many imported Hardwood species of your current stock come from:
(enter no. of species)

West Africa	
Africa - elsewhere	
Europe	
Pacific	
East Asia	
North America	
South America	
Elsewhere - specify	

7. In your opinion, are there any Hardwood species that every merchant should stock at the present?

YES NO

IF YES, which species do you think it is most important for merchants to stock?

8. Could you rank, in order of supply potential, the areas where you believe that the future Hardwood supplies to the U.K. will come from:

West Africa	
Other Parts of Africa	
Europe	
Pacific	
East Asia	
North America	
South America	
Elsewhere - specify	

From time to time species are introduced to the market which have not been previously commercially available. The next section of this questionnaire is concerned with such lesser-known species.

9. Have you introduced any lesser-known species during the last 5 years (since 1976)?

YES NO

IF YES GO TO SECTION B

IF NO GO TO SECTION C

THIS SECTION TO BE COMPLETED BY ANYBODY WHO HAS INTRODUCED AT LEAST ONE LESSER-KNOWN SPECIES DURING THE LAST 5 YEARS

SECTION B

10. Please list in date order the lesser-known Tropical Hardwood species that you have introduced during the last 5 years (since 1976).

Empty table with 5 rows for listing species.

11. Here are three areas in which it would be useful to have information on before investing in a lesser-known specie. Can you tell me which of these you would regard as most important and which is least important?

Most Important (tick one) Least Important (tick one)

- a) occurrence in the tropics
b) physical & mechanical properties
c) technological & processing characteristics

Two columns of checkboxes for importance ratings.

The questions on the next four pages relate to specific Hardwood species introduced in the last 5 years. Please complete all the questions regarding one specie before moving to the next. If you have introduced more than three species, please choose the tree more recent introductions.

12. Information about specific lesser-known Hardwood species

- i) Name under which it was marketed
Date of introduction (approx year)
Sold as lumber and/or logs
Quantity of first consignment
Quality of first consignment
Sizes stocked during introduction
Moisture content when arrived
Colour
Grain
Density
Durability

Three vertical columns of empty boxes for data entry.

Turn to next page

Turn to next page

Turn to next page

Less-Known specie
(Please repeat name here)

ii) How did you first learn about the specie?
(tick only one)

a) approached by Agent

b) own research unit

c) information from overseas markets

d) approached by producing countries

e) literature

f) other sources - specify

iii) Did you or your representative
visit the producing area before
deciding to invest in the
species

 Y N Y N Y N

if YES, was it

a) your own initiative

b) by invitation

iv) Were you able to obtain the
information you needed on the
specie before investing.

 Y N YES Y N Y N

v) Specify the end-users section
that the specie was mainly
intended to be used by

vi) Please rank the three most
important reasons that induced you
to introduce this particular specie
into the U.K. market:

a) suitability for a specific job

b) substitute for a fading old favourite

c) fill a gap in the market needs

d) a good opportunity

e) price advantage

f) ample occurrence in the Tropics

g) fashion

h) reasonable freights

i) reliable source of supply

j) other reasons - specify

vii) Do you still stock this specie

 Y N Y N Y N

Please turn to
next page

Please turn to
next page

Please turn to
next page

Less-known species
(Please repeat name here)

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viii) At the time of introduction, was there another specie already accepted by the trade and having similar properties to the lesser-known one you were introducing

<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
---	---	---

Please specify the established specie that the new specie was expected to supplement

--	--	--

How did the lesser-known specie compare with the established on on the following attributes

Was the lesser-known specie Better (B), Worse (W) or about the Same (S).

- a) price
- b) supply conditions
- c) if sawn, work done before shipment
- d) job suitability/properties
- e) shipping conditions
- f) grading

	B	S	W		B	S	W		B	S	W
a)											
b)											
c)											
d)											
e)											
f)											

ix) Did you undertake any processing on your premises?

<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
---	---	---

if YES, was it:

- a) log mill conversion
- b) kilning
- c) other - specify

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x) When introducing the specie did you undertake any special promotional activities?

<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> YES <input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> NO <input type="checkbox"/> Y <input type="checkbox"/> N
---	--	---

IF YES, what form did they take

- a) price inducements/special offer
- b) adverts at specialist press
- c) educating customers
- d) intensification sales force activities
- e) others - specify

Turn to next page

Turn to next page

Turn to next page

Lesser-known species
(Please repeat the name here)

--	--	--

xi) Was it sold on:

- a) forward contract basis
- b) ex stock

IF ex stock, how long did it take you to sell the entire volume of the first consignment:

- a) less than 6 months
- b) between 6 months and 1 year
- c) more than 1 year

xii) 1) Was the lesser-known specie introduced to:
(tick only one)

- a) all your customers irrespective of material used
- b) the whole range of your customers using material of similar colour
- c) the whole range of your customers using material with similar properties
- d) selected customers using material with similar properties
- e) if none of the above, please specify

2) Did you send a trial parcel before the customer placed an order

<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
---	---	---

3) Was the parcel at a reduced price or not?

<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N	<input type="checkbox"/> Y <input type="checkbox"/> N
---	---	---

xiii) Did this specie prove to be:

- Success
- Failure
- Too early to decide

Please go to page 3

Please go to page 3

13. Do you intend to introduce any more lesser known species into the U.K. market during the next 6 months

YES	DONT KNOW	NO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION C

Finally, I would be grateful for your opinion on a few matters of general interest connected with the Timber Trade.

Please tick the Position on the scale that best represents your beliefs in relation to each statement.

	Agree		Not		Disagree
	Strongly	Slightly	Certain	Slightly	Strongly

- | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 14. The best strategy about lesser-known Hardwood species, is to leave their introduction to other merchants and by monitoring the developments closely be ready to follow quickly if and when the specie becomes accepted by the Trade | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. The market developments during the last 5 years have altered the traditional Agent-Merchant-End user structure of the Timber Trade | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Mechanical and technical advances have made acceptable to the trade species that were not before | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Fewer species than 10 years ago constitute the bulk of the Hardwood imports to the U.K. today | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. The decline of West Africa as the major supplier to the U.K. Trade has resulted in the search for new species | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 19. Failure to satisfy the whole range of customers requirements (in species and size) results in the loss of the customers business | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 20. The current market trend is towards prepared material and away from solids. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 21. Wood preservatives have done little to improve the quality and value of timber | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 22. There is no customer loyalty in the Timber Trade | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 23. Grouping species on the basis of similar properties is an unsatisfactory way of selling | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

	Agree		Not	Disagree	
	Strongly	Slightly	Certain	Slightly	Strongly
24. End-Users have been very conservative in their attitudes towards any changes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Forward Contracts are an uneconomical way of selling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. The introduction and acceptance by the end-users of lesser-known Hardwood species is the only way of satisfying future demand.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. The only viable future open to the Timber Trade is specialisation, i.e. stocking os felective species	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. The U.K. Timber Trade will have to accept lower quality material if it is to maintain and/or increase the current levels of consumption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Closer links andcco-operation between Merchants is desirable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. The future of the Hardwood Trade looks optimistic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

THANK YOU ONCE AGAIN FOR YOUR HELP IN MY RESEARCH. IF THERE ARE ANY FURTHER COMMENTS YOU WOULD CARE TO MAKE (ON THE SUBJECT OF THE INTRODUCTION OF LESSER-KNOWN TROPICAL HARDWOOD SPECIES) WHICH MIGHT CONTRIBUTE TO THIS STUDY. PLEASE WRITE THEM HERE

Order form for results of research (available in about 6 months time)

Name

Company & Address

.....

Position held

Telephone No.



Thames
Polytechnic

Your ref
Our ref DK/SK/LE
Ext
Date April, 1981.

Wellington Street London SE18 6PF
Telephone 01-854 2030

SCHOOL OF BUSINESS ADMINISTRATION

Riverside House
Beresford Street
London SE18 6BU

Head of School G K Randall MA

SURVEY OF LESSER KNOWN HARDWOOD SPECIES

Dear Sir,

I am a research student for a Masters Degree (M.Phil) and I am investigating the U.K. Market for Hardwoods. The aim of my research is to suggest possible lesser-known Hardwood species that will be acceptable to the end-users (by lesser-known species I mean species that have not been commercially used until now).

I will be grateful if you complete this questionnaire and return it to me as early as possible,* (self-addressed stamped envelope included). The completion of this questionnaire will not take much of your time and it will be of immense value and help to my research.

I would like to make it absolutely clear that any information given to me will be treated in the strictest confidence, the details are immediately put into coded forms and cannot be disclosed to anyone in such a way that it could identify you personally.

Finally I would like to thank you in advance and express my gratitude for your co-operation and assistance in my studies.

Yours faithfully,

S. Kalafatis

P.S. If you wish to receive an extract of the findings of this survey, complete the appropriate form at the end of the questionnaire.

* in the event that your firm does not use Hardwoods at all could you please return the questionnaire uncompleted.

PLEASE COMPLETE ALL SECTIONS OF THIS QUESTIONNAIRE

SECTION A

1. How would you define your firm as an end-user of timber
(Please tick the box that represents the bulk of your production)

Joinery	<input type="checkbox"/>
Flooring manuf.	<input type="checkbox"/>
Shopfitters	<input type="checkbox"/>
Furniture manuf.	<input type="checkbox"/>
Ship/boat builders	<input type="checkbox"/>
D.I.Y.	<input type="checkbox"/>
Transport	<input type="checkbox"/>
Timber Merchants	<input type="checkbox"/>
Pattern makers	<input type="checkbox"/>
Other - specify	<input type="checkbox"/>

2. How many people do you employ in connection with timber work?

less than 10	<input type="checkbox"/>
between 10 and 50	<input type="checkbox"/>
between 50 and 100	<input type="checkbox"/>
more than 100	<input type="checkbox"/>

3. What proportion of your final product(s) (on an overall average) is made out of Tropical Hardwoods?

less than 30%	<input type="checkbox"/>
between 30% and 60%	<input type="checkbox"/>
over 60%	<input type="checkbox"/>

4. Please rank in order of volume. (m³) the material you require
(1 for the most important, etc.)

Tropical Hardwoods	<input type="checkbox"/>
Softwoods	<input type="checkbox"/>
British (Softwood & Hardwood)	<input type="checkbox"/>
Plywood	<input type="checkbox"/>
Particle boards	<input type="checkbox"/>
Veneers	<input type="checkbox"/>
Others - specify	<input type="checkbox"/>

10. Please rank the three most important characteristics of Tropical Hardwoods that you consider essential to your end-use sector. (1 for the most important etc)

stability	
workability	
strength	
finishing	
durability	
shrinkage	
colour/appearance	
texture	
grain	
others - specify	

11. (i) Are there any Tropical Hardwood species that your regard as absolutely essential to your operations

YES NO

IF YES, please specify those species in order of importance to your firm

(ii)

(ii) How well are your firms requirements met by the currently available tropical Hardwoods?

very satisfactory	
average	
not satisfactory	

PLEASE GO TO SECTION B

5. Please specify the 5 main (in volume terms M3) Tropical Hardwoods that you used during the last 12 months.
(Place them in order of volume importance)

6. Please rank the three most important reasons that you have been using those species
(1 for the most important etc.)

- Traditionally used
- Customers demand
- Properties suitability
- Price advantage
- Guaranteed supplies
- Suitable to your machinery
- Other - specify

7. Roughly, what is the total volume of wood-based products that your firm purchases during a 12 month period (in M3)

--

What percentage of that total is made out of Tropical Hardwoods

--

8. Is your production

- Standardised
- Follows specification
- Both

IF it follows specifications, please state who the specifiers usually are

9. How much does your customer's knowledge influence your choice of Hardwood species

- A lot
- Sometimes
- Very little

SECTION B

12. In your firm, are the decisions involving purchases of wood-based-products and their supplier(s)

- a) the responsibility of one person
- b) the outcome of deliberation between the various departments involved in your production

IF (a), is that person

- a) of a managerial position
- b) one involved exclusively in the production/manufacturing side of the firm

13. Please specify the number of Tropical Hardwood suppliers that your firm purchases from at any period of time

- only one
- two
- three
- four and over

14. Please rank the three most important factors that cause you concern about the present state of Tropical Hardwood supplies

- unsuitable dimensions
- grading
- moisture content
- overall service from suppliers
- quality
- Other - specify

15. Does your firm belong to a trade association or federation

- YES
- NO

IF YES, does your membership provide your firm with

- data and information about changes and developments in your trade YES NO
- the opportunity to come into contact both in managerial and technical level with other members of the same trade YES NO

16. Is anyone in your firm a subscriber of any trade journal or magazine?

- YES
- NO

17. If the supplier of a Hardwood specie, increases the price of the specific specie, do you:
(tick only one)

- wait and see
- purchase immediately before further price increases
- start looking around for another supplier
- switch to another species with similar properties
- non/ of the above specify action

18. In the event that your firm has to look for a new timber supplier, what sources do you use in coming to a decision

- trade directories
- merchants representatives
- magazines and journals
- exhibitions
- experience
- other - specify

19. Please rank the five most important service factors that your firm requires its supplier(s) to fulfill:
(1 for the most important etc.)

- price competitiveness
- ability to meet delivery dates
- prompt & comprehensive quotations
- provision for technical advice for problem solving
- ease of contact with a person in authority
- discount provision on list prices
- technical after-sales service
- replacement facilities
- extended credit facilities
- stock a wide range of materials and sizes
- high quality of supplies
- reputation and long standing in the market
- other - specify

In the following questions, please tick the position that best represents your own opinion

20. i) Could you please specify how your major tropical Hardwood supplier fairs on such matters as:

	Satisfactory		Average	Unsatisfactory	
	very	slightly		slightly	very
a) ability to meet delivery dates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) prompt & comprehensive quotation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) provision for technical advice for problem solving	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) ease of contact with a person in authority	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) technical after sales service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) replacement facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) stock a wide range of materials and sizes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) quality of supplies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) dealings with your account	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Agree		Not	Disagree	
	Strongly	Slightly	Certain	Slightly	Strongly
21. i) Mechanical and technical advances have made acceptable to the trade species that were not before	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii) The current trend is towards prepared materials and away from solids	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) There is no real difference between the products on offer between the various Hardwood merchants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

PLEASE GO TO SECTION C

SECTION C

From time to time, merchants introduce Tropical Hardwood species that end-users have not used before.

22. Have you had any experience with lesser known Tropical Hardwood during the last 5 years (since 1976)

YES NO

IF YES, PLEASE GO TO QUESTION 23

IF NO, PLEASE GO TO QUESTION 24

23. (i) Please specify those lesser-known Hardwoods that you have tried and tick after the names if you still use them

(ii) How did you come to know about most of the above species (tick only one)

approached by merchants	<input type="checkbox"/>
own research unit	<input type="checkbox"/>
recommended by your association	<input type="checkbox"/>
from literature	<input type="checkbox"/>
ads in the press	<input type="checkbox"/>
from competitors	<input type="checkbox"/>
you approached merchants because of problems with price/supplies	<input type="checkbox"/>
otherwise-specify	<input type="text"/>

(iii) Please rank the three most prominent reasons for trying lesser-known Hardwood species

price advantage over other established species	<input type="checkbox"/>
credibility of supplier	<input type="checkbox"/>
shortage of usual material	<input type="checkbox"/>
suitability for a specific job	<input type="checkbox"/>
market trends / fashion	<input type="checkbox"/>
size/form suitability	<input type="checkbox"/>
resemblance to an established specie	<input type="checkbox"/>
other - specify	<input type="text"/>

(iv) Did you have any samples before placing an order

YES NO

IF YES, were the samples in the form of

rough sawn timber
in the form of your own product
Other form - specify

(v) Did you have a trial parcel

YES NO

IF YES,

(a) was the parcel at reduced price YES NO

(b) did the subsequent material match the quality of the trial parcel YES NO

(vi) Were you pleased with the help and advice you received, from the suppliers about the properties of the lesser-known species.

YES NO

(vii) Did you find that, overall, information about lesser-known Hardwood species is generally readily available and accessible

YES NO

PLEASE GO TO QUESTION 26

24. Please rank the three most important reasons for not having tried a lesser known Hardwood specie during the last 5 years, because: (1 the most important etc.)

of past experience with other lesser known species
of ample supply & reasonable prices of usual material
your policy is to wait until the specie is tried and accepted by others
of resistance by your customers to any thing they do not know
nothing suitable has been offered
of insufficient information about the properties of such species
others - specify

25. Which of the following reasons might persuade your firm to try a lesser-known specie in the future

price advantage	<input type="checkbox"/>
credibility of supplier	<input type="checkbox"/>
shortage of usual material	<input type="checkbox"/>
good service (information, help from salesman etc.)	<input type="checkbox"/>
suitability for a specific job	<input type="checkbox"/>
market trends/fashion	<input type="checkbox"/>
resemblance to an established specie	<input type="checkbox"/>
size/form suitability	<input type="checkbox"/>
Other - specify	<input type="text"/>

26. Are you prepared to pay a premium price for your usual material rather than look for alternatives

YES NO

27. If you are assured of the suitability and continuity of supply of a lesser-known Hardwood specie would you be prepared to modify your production methods so as to suit the specie

YES NO

28. Would your firm

a) be prepared to promote a lesser known specie to your customers if you were absolutely sure about its suitability

b) prefer to wait until there is a demand for it

29. Do you plan to try a lesser known Hardwood specie in the next 6 months.

YES NO

THANK YOU ONCE AGAIN FOR YOUR HELP IN MY RESEARCH. IF THERE ARE ANY FURTHER COMMENTS YOU WOULD CARE TO MAKE (ON THE SUBJECT OF THE INTRODUCTION OF LESSER-KNOWN TROPICAL HARDWOOD SPECIES) WHICH MIGHT CONTRIBUTE TO THIS STUDY. PLEASE WRITE THEM HERE.

Order Form for results of research (available in about 6 months time)

Name

Company & Address

.....

Position held Telephone No.

Dear

I would like to thank you in advance for agreeing to complete this questionnaire. Your answers will be of immense help to my research for a Masters Degree (" Marketing of lesser-known Hardwood species").

I have tried to design the questionnaire to be as short as possible so as not to take much of your time.

Finally, I would like to make it absolutely clear to you that your answers will be treated in the strictest confidence and you are under no obligation to answer any of the questions that you might regard inappropriate.

Thank you in advance for your help.

Yours Sincerely,

S.KALAFATIS

please mail your reply in the envelope provided.

S.KALAFATIS

31, DURY ROAD

BARNET, HERTS

EN5 5PU

