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TO THE COUNCIL, THE EUROPEAN PARLIAMENT,
THE ECONOMIC AND SOCIAL COMMITTEE
AND THE COMMITTEE OF THE REGIONS

**THE STATE OF THE COMPETITIVENESS OF
THE EU FOREST-BASED AND RELATED INDUSTRIES**

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Communication to the Council, the European Parliament,
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TABLE OF CONTENTS

	<u>Page</u>
0. INTRODUCTION	1
1. KEY FEATURES AND COMPETITIVENESS FACTORS OF THE FOREST-BASED AND RELATED INDUSTRIES (FB-IND)	2
1.1 KEY FEATURES	2
1.2 COMPETITIVENESS FACTORS OF THE EU FB-IND	5
▪ TANGIBLE FACTORS	5
▪ INTANGIBLE FACTORS	7
2. THE MAIN CHALLENGES AND AREAS OF ACTION FOR THE EU FOREST-BASED AND RELATED INDUSTRIES	7
2.1 THE GROWING IMPACT OF GLOBALISATION	8
2.2 THE ENLARGEMENT OF THE EU	9
2.3 AN INCREASED SENSITIVITY TOWARDS ENVIRONMENT AND ENERGY	9
2.4 THE ACCELERATED TECHNOLOGICAL EVOLUTION AND ITS IMPLICATIONS ON THE HUMAN RESOURCES	11
▪ TECHNOLOGY, INNOVATION AND R & T D	
▪ DEVELOPMENT OF HUMAN RESOURCES	
2.5 THE EVOLVING INTERNATIONAL AND EU REGULATORY AND ECONOMIC FRAMEWORK	13
2.6 THE GROWING IMPORTANCE OF COMMUNICATING A GOOD IMAGE TO SOCIETY	14
3. CONCLUSIONS	15
Annex:	
Summary of the results of the 'SWOT' evaluation carried out in collaboration within dependent experts and representatives of the FB-IND	
References and Sources	

0. INTRODUCTION

The adhesion of Austria, Finland and Sweden to the European Union (EU) in 1995 considerably affected the structure and the importance of the EU Forest Based and Related Industries (FB-IND), which is now one of the largest industrial sectors in the EU. EU exploitable forest resources doubled, pulp production tripled, paper and board production increased by 50%, mechanical woodworking output went up by 30% and the printing and publishing industries expanded by 10-15%. Nonetheless, the FB-IND activities are not concentrated in certain areas of the European Union but are present in all the EU Member States.

While these industries generally maintain a good competitive position in relation to their main international trading partners/competitors, they increasingly face important challenges in different areas (amongst others, globalisation of markets and technologies, environmental sensitivity, competition from other materials and media). Unless these challenges are dealt with successfully, the medium to long-term future of the EU FB-IND might look less positive.

The socio-economic importance of the EU FB-IND and the presence of these competitive challenges have prompted, for the first time in 15 years, a rather comprehensive analysis by the Commission Services and the preparation of this communication. It involved a wide exchange of views with independent experts, the main representatives of the EU FB-IND and other stakeholders.

The FB-IND regroup a diverse range of activities, but their common and renewable raw material, wood, as well as their close inter-sectoral links through semi-finished and finished products, wood residues and the recycling and recovery activities, justify a common approach for the EU FB-IND. This communication focuses on the common features shared by these sectors, thus leaving the detailed and specific analyses outside its scope. Equally, forest and forestry-related issues are not covered since they were included in the recent Communication on a Forestry strategy for the European Union.¹ The Council of the EU has acknowledged the benefits of such a strategy through the Council Resolution of 15 December 1998 on a Forestry Strategy for the European Union (OJ C56 of 26.2.1999) and has emphasized the importance of the multifunctional role of forests and SFM based on their social, economic, environmental, ecological and cultural functions for the development of society and, in particular rural areas.

The objective of this communication is to propose a set of actions to be undertaken and/or pursued by the main stakeholders of these industries, in order to strengthen the global and sustainable competitiveness of FB-IND in the EU (ref. Articles 2, 6, 157 and 174 of the EC Treaty). It follows the integration process launched at the Cardiff European Council, as well as the conclusions of the last Industry Council of 29 April 1999, which promote an integrated approach to sustainable development, taking into account the objectives of environmental protection, competitive economic development and social development. For this purpose, the communication:

- describes the key socio-economic features of these industries in the EU (Chapter 1.1);
- analyses the main factors (tangible and intangible) affecting their competitiveness in relation to their principal international competitors (Chapter 1.2 and Annex 1);
- identifies the key challenges for the EU FB-IND and the areas of actions which could contribute to their sustainable development taking equally into account their economic competitiveness, as well as environment, employment and social welfare considerations (Chapter 2).

This communication, in the preparation of which the main elements were discussed in a Conference open to all stakeholders that took place in Helsinki on July 1999, has to be considered as the first step towards an open dialogue. This dialogue should be pursued in the framework of the Forum proposed in Chapter 3, in order to deepen the analysis of some of the less well-known issues, to define the priorities for the proposed or newly identified actions and to follow-up their implementation.

1. KEY FEATURES AND COMPETITIVENESS FACTORS OF THE EU FB-IND

1.1 KEY FEATURES

SCOPE AND USES

The EU FB-IND comprise five main sectors: woodworking; pulp, paper & board production; paper and board converting and packaging; printing; and publishing. They are interlinked through their use of common raw materials and the employment of similar product recovery and recycling processes.

Woodworking industries supply basic products such as sawn goods, wood-based panels and builders' carpentry for construction, internal decoration and furniture. Wooden packaging is used for transport, while in many cases sports equipment, musical instruments and artistic products have wood as their raw material.

The pulp, paper and board manufacturing and converting industries form another important sector meeting demand from individuals and society. Paper is a necessity for almost all forms of activity, such as in communications and advertising (newspapers, magazines, directories), education (books, writing paper, etc.), business (security papers, forms, labels, copy paper), commerce (bank notes, cheques, postage stamps), culture (photography, art-work), hygiene (kitchen rolls, napkins, diapers), medicine (dressings, swabs), food and beverage packaging (coffee filters, paper crockery & cutlery, liquid carton board, folding box-board), transport and protection (tachographs, bags, sacks, paperboard packaging).

The printing and publishing industries are end-users of paper & board industries' products. They are among the largest consumers of paper products and serve all sectors of the economy including public authorities, financial services, distributive services and manufacturing industry. Their products range from newspapers, magazines, books, catalogues and packaging to a variety of other products, e.g. postcards, calendars, maps, banknotes and security printing products, programmes and tickets. Printing and publishing are therefore relevant from both goods and services perspectives.

MAIN SOCIO-ECONOMIC PARAMETERS

The EU FB-IND constitutes one of the largest industrial sectors in the EU. In 1997, it had a production value of 319 Billion Euro (B€), a value added of 112 B€ and directly employed 2.4 million people. It represented 10% of production, added value and employment of the EU manufacturing industries.²

In 1998, according to EU statistics (see table overleaf), the EU FB-IND accounted for a total of around 63.000 companies³, ranging from a considerable number of SMEs to a small number of large global corporations. The biggest companies of the EU/FB-IND are to be found in the pulp, paper & board and publishing sectors in which there is the greatest concentration of activity. In these sectors, the 20 largest companies account for 60% of the total turnover.⁴ It is worth mentioning that tens of thousands of SMEs with fewer than 20 employees in the FB-IND are not included in the above figures, leading to a significant underestimation of the socio-economic importance of the sector in the EU. The EU FB-IND is, furthermore, supplied by 12 million private EU forest owners.

The FB-IND are not only found in certain areas of the European Union but are present throughout the Member States. FB-IND are not only present in high population density areas but also are often situated in remote areas, close to their raw material source, contributing to maintaining economic activity, employment and infrastructure, as well as sustaining living conditions in these remote areas of the EU. Their presence in these areas of Europe adds to the overall economic convergence of all regions and to social cohesion.

The printing and publishing industries, uphold also a centuries-old function, that of enabling art and literature, politics and free expression to exist and expand, which is at the centre of European culture and democracy: they are important users of paper and board and they participate in the recycling chain, but they also have issues of specific concern (competition with electronic media, content legislation etc.).

The EU FB-IND is also the focus of, and is mutually interdependent on, a Forest Industries Cluster (FIC). The Cluster industries provide goods and services to, or purchase them from, the EU FB-IND. Additionally, the quality of the Cluster industries influences the competitiveness of the EU FB-IND. The Cluster industries cover sector-specific machinery & equipment, process control systems, chemicals, furniture and wooden construction elements for building purposes, and consulting dedicated to serve the FB-IND. The production value of the FIC is estimated as being up to 450 B€.

Socio-economic impact of Forest-based and Related Industries in the EU in 1998

	Production value	%	Value added at factory cost	Number of enterprises (1995)	Number of persons employed
	Million EURO		Million EURO		
Mechanical woodworking excl. furniture	60.158,6	19	18.760,7	29.113	526.679
Pulp, paper and board manufacturing	55.223,5	17	16.066,2	930	217.175
Paper and board converting	55.738,4	18	18.070,0	5.009	381.582
Printing	61.184,1	19	26.429,8	20.606	626.098
Publishing	86.362,4	27	32.258,6	7.488	627.409
Total FB-IND	318.667,0	100	111.585,3	63.146	2.378.943
Furniture	68.598,6		23.731,3	19.409	675.793
Machinery, equipment, chemical	64.624,0		24.841,8	6.761	617.149
Total FB-IND cluster	451.889,6		160.158,3	89.316	3.671.885

Source: Eurostat

Enterprises with less than 20 employees not included

TRADE

Out of the total EU production of 319 B€ of FB-IND products, only 53 B€ (16%) is traded between the Member States and 25 B€ (7%) is exported outside the EU. The EU FB-IND is therefore predominantly a domestic industry.

The EU's main trading partners in order of importance are North America (especially the USA), the Central and Eastern European countries (CEEC) and Asia. Extra-EU trade has in general been positive since 1995, with the exception of North America. In 1997, EU product imports from North America (US, Canada) amounted to 7,5 B€ involving a wide range of products without any specific focus. EU exports to these markets (mostly paper and board and printed products) were worth 3,2 B€, leaving a trade deficit of 4,3 B€. From Asia and the CEEC, the EU imports mostly mechanical woodworking industry products such as sawn wood, round wood and

panels and it exports mostly paper and board products. The trade balance with Asia has been positive (+3,7 B€) until 1997, and trade with the CEEC has been in balance.

Of the FB-IND intra-EU trade, paper and board and graphics products represent approximately 70% and mechanical woodworking products 20%.

The EU is highly dependent on the imports of plywood, so called sawn hardwood, and pulp, while the extra EU-markets are particularly important for the export of certain printing paper grades and sack paper. These imports represent 30-60% of EU consumption levels, depending on the product, and the exports represent similar percentages of EU production levels. Since 1995, the trade balance has been continually negative in mechanical woodworking products and pulp, but positive in paper and board and graphic products.

GROWTH

In general, the FB-IND growth is steady and close to the average growth rates for industry.⁵ Between 1989 and 1996, the EU FB-IND grew annually by 2,2% compared to the EU total manufacturing industries' growth of 2,4%. However, the printing and publishing sectors have above average growth rates, while the wood and paper sectors remain slightly under them.

The demand for woodworking industry products is driven primarily by the construction sector. Other significant demand sectors for woodworking industry products are the furniture and packaging sectors, whose requirements are related to private consumption.

In the paper and board sector the demand for packaging grades is related to GDP growth rates. The demand for graphic and household paper is on the other hand related to advertising and private consumption. The printing and publishing sectors for their part are to a large extent dependent on the demand for advertising and promotional material.

Despite its steady growth, the EU FB-IND is characterised by high cyclicity and variable earnings, being subject to factors such as over-capacity, regional imbalances outside the EU, and speculative forces.

FOREST RESOURCES AND ENVIRONMENT

Together, the forest and the products from forest-based industries form an eco-cycle not yet fully integrated. The sun drives this eco-cycle: with water, nutrients and carbon dioxide, photosynthesis transforms solar energy into wood fibers in growing trees. The cyclical nature of this process means that the forest is a renewable source of raw material that provides wood fibres for the production of timber products, pulp and paper, as well as energy. In harvesting wood and regenerating forests, the FB-IND stimulate the growth of forests and, by producing durable wood based products which act as carbon stores (CO₂ being essential for the growth of wood), they reinforce this cycle. Forests and their products have the capacity to store vast amounts of carbon (1 ton of CO₂ in 1 cubic metre of timber)⁶, and thus play a significant role in the global carbon balance. Forestry offers a large potential for the mitigation of green house gases (GHG) at modest cost, low risk and with a number of environmental and socio-economic benefits.

Although a number of actors of the EU FB-IND participate in a significant way in the recovery activities of their products, all actors are encouraged to improve their participation. Recovery starts from the beginning of the industrial process, debarking, through the different process stages where wood residues, wooden chips, black liquor, and other leftovers from each processing stage are either reinserted into the production process or used in energy generation. At later stages of secondary processing e.g. printing & publishing, carpentry and joinery or at the retail business and final consumer level, the recovery and recycling of FB-IND products is organised at industry and household levels, having developed rather competitive recovery and recycling actions, which have steadily increased the rate of recovery of used paper and wood since the 1970s. Today, paper and board have high recovery rates with a recorded 36 million tons for 1998 in the EU. The collection rate of recovered paper is close to 50% in Europe, with

significant variations between Member States and local areas, compared with 25% in the USA and Asia.⁷

Incineration of FB-IND products can be combined with techniques such as co-generation to produce energy from renewable resources. Through more efficient production processes, preventive strategies, cleaner production technologies and processes throughout the product life-cycle, industry and economic operators can play a major role in reducing impacts on resource use and environment. Those techniques have also the advantage of emitting into the atmosphere only the CO₂ once trapped in the product. Thus, it does not generate a net increase in the atmospheric CO₂ balance.

1.2 COMPETITIVENESS FACTORS OF THE EU FB-IND

Various localised factors such as European climatic conditions, often difficult working conditions, as well as the EU's high living standards, have contributed to the present relatively high production costs under which the EU FB-IND operate. They also helped to account for the high level of knowledge, know-how and productivity that has enabled the FB-IND to find compensation for high input costs and to become world leaders in value added and quality products.

The competitiveness of the EU FB-IND, as for any other industry, is a combination of several factors. In this communication, the competitiveness factors have been categorised as either tangible or intangible. Tangible factors comprise both the various input cost factors, such as raw materials and energy, and the technology-based factors that are connected with productivity, such as machinery capacities, control systems and information and communications technologies (ICT). Intangible factors are all factors contributing to improving quality and performance such as research & development, innovation, education and skills, on the one hand, and the legislative and administrative (institutional) framework on the other hand. Changing the intangible factors influences the tangible ones.

In order to learn more about the factors affecting the competitiveness of the EU FB-IND, several 'SWOT' analyses have been carried out by independent consultants in cooperation with some of the FB-IND sectors. These studies provided a comprehensive overview of the sectors' strong and weak points, opportunities offered and threats to be faced. Their results are summarised in a table attached to this communication (see annex 1). The following outlines the main findings of these studies.

TANGIBLE FACTORS

INPUT FACTORS

Costs related to wood, energy, labour, transportation and tax are generally higher in the EU than for example in North and South America and Asia. Only Japan faces higher production costs than the EU FB-IND.

Forest Wood

The EU has a total forest area of 130 million ha, accounting for about 36% of its total land area. Some 87 million ha (67%) are considered exploitable forests.⁸ In comparison with the vast boreal and tropical forests of other regions in the world, the EU's forest resources are modest, representing only 4% of the world's forest resources.⁹ Since wood availability is fundamental to the industry, the EU forest-based industries, together with the EU forest owners, have made substantial efforts to ensure the development of the whole forestry sector in Europe (including downstream FB-IND). As a result, the EU forest cover and growing stock have increased over the last 100 years and more than 50%, since the 1950s.¹⁰

In terms of wood availability, the EU is today fairly well positioned. As regards the current consumption in Europe, only 70%¹¹ of the annual growth of EU wood resources are being used,

which might imply that there is room for further development of the wood-based industries. In fact, the remaining 30% comprises forest that is unsuitable for or unavailable to industry. Therefore, within a 30-year perspective,¹² taking into account both the objective of sustainable forest management and the forecasted increase in the demand for wood-based products in the EU, wood resources will increasingly need to be complemented by outside wood supply resources such as those of Russia.

Wood prices in the EU, depending on the species, are 50-150% higher than in North and South America and Asia (excluding Japan). In spite of the higher price, the FB-IND uses mainly EU wood due to its proximity, quality and the sustainability of EU forests.¹³

Chemicals

A wide range of chemicals are used in the FB-IND. For wood, these are mainly glues, resins, surfacing substances and preservatives. For papermaking the most used chemicals are fillers and coatings such as kaolin, latex, starch. For graphics it is water-based and solvent inks and dyes. There is a strong EU-based chemical industry linked to the FB-IND. Additionally, the pulp and paper industry often has on-site production of chemicals and recovery of by-products. Chemical costs are generally lower for the EU than for its competitors, except in North America where they are 5-15% lower than in the EU.¹⁴

Energy

FB-IND are often energy intensive but have significantly increased their energy efficiency during the last 20 years, both through process development and recovery as well as the use of residues. Energy sources have also been diversified, with a prominent use of renewable energies such as hydro, wood, paper and process residues. The FB-IND thus depend on guaranteed energy supply at competitive prices. However, despite increasing convergence over the last few years, energy prices in the various EU Member States are still relatively high and vary significantly. Average gas and electricity prices for the EU FB-IND are about 100% higher compared to Canada, 25-30% higher compared to the USA and South America and 10% higher compared to some Asian countries such as China, Indonesia and South Korea. The impact of these higher costs varies according to specific sub-sectors of FB-IND.¹⁵

Labour

Labour costs are high in the EU, reflecting not only salaries and wages, but also the costs of the high level of European health and safety standards and welfare systems. They are 20% higher than in North America, and about 100% higher compared with South America and Asia. This has a considerable cost impact in labour-intensive sectors such as the printing, publishing and the woodworking industries.¹⁶ These higher costs may partly be compensated by the 'proximity factor' but also require a permanent effort of compensation through quality, service and other factors adding 'customer value' to the product.

Transportation and logistics costs

Transport and logistics are very important for the EU FB-IND, from wood procurement in the forest to the distribution of final products for retail sale. Therefore, any legislative, administrative, fiscal or other factor exercising an impact on the costs of transportation and logistics has an immediate consequence for FB-IND competitiveness. In most parts of the European Union, transport networks and services, including rail, road, waterways, airports, seaports, postal and courier services are today well developed and of high quality. However, transport costs are high, in particular diesel fuel is twice as expensive in Europe as in other competing regions.¹⁷

TECHNOLOGY BASED FACTORS

Over the past two decades, the EU FB-IND has made considerable efforts to increase process productivity and efficiency in order to offset the handicap of higher input costs as compared with their competitors in other regions. This has resulted in both considerable investments in higher

production capacities and a wave of mergers during the past years. Consequently, the number of FB-IND companies has decreased more in the EU than in other regions in the world. In parallel, continuous investment has raised EU production installations to the largest in the world and enabled them to considerably increase both their productivity and quality levels. More efficient production has resulted in increased yields in the use of wood and water, and improved energy efficiency. The development of process recovery systems has reduced raw material needs. Among the EU FB-IND competitors, Asia and Latin-America have increasingly modern and new production capacity, whilst the North-American capacity on the other hand is ageing. The EU FB-IND is more fragmented, and it includes both new and ageing production capacity.

INTANGIBLE FACTORS

R & D-INNOVATION & SKILLS

Through mergers, forward and backward integration, and intensified cooperation with dependent industry and other interlinked sectors (the so-called clustering), the EU FB-IND have improved their knowledge and know-how and contributed to the present high level of R&D, innovation and skills. However, the main efforts in this area were made by sectors gravitating around the EU FB-IND rather than by the FB-IND core activities themselves. Thus, machine and equipment suppliers, the chemical industry, process designers and automatic process-control system suppliers, as well as input from research communities, contribute significantly to improving and upgrading the EU FB-IND. Continuous efforts in these fields have enabled the EU FB-IND to create a technological and know-how competitive edge in production efficiency, as well as differentiated and high value added products and quality.

Further competitiveness factors for the EU FB-IND are human competence and skills. The highly skilled workforce in the EU has enabled the FB-IND to efficiently use their tangible assets and ensured the continued implementation of innovations. It has, furthermore, enabled the EU FB-IND to outperform competitors from lower cost countries both in terms of productivity and quality.

LEGISLATIVE AND INSTITUTIONAL FACTORS

The EU legislative and institutional framework obviously has significant impact on both the investment and operating costs of the EU FB-IND and consequently on their present and future competitiveness. Environmental, fiscal, energy, or labour related measures, both at EU and national level, affect the actual cost level of the input factors as well as the technology based investments. While the EU single market, the introduction of the euro and high living standards offer an excellent market place for FB-IND, legal measures, in particular in the environment field, often form a major challenge for the sector. Environmental obligations are still seen more as a cost increasing factor than as factor to enhance competitiveness. In particular, the use of voluntary instruments, such as the eco-management and audit scheme (EMAS) regulation, should be encouraged. It should be noted that today as much as 15% of the new investment in the FB-IND is directed to meet environmental targets. The corresponding figure in competing regions is lower. The EU FB-IND have tried to overcome this by enhancing technological productivity and efficiency and increasing efforts in the areas of R&D, innovation, training and skills.

2. THE MAIN CHALLENGES AND AREAS OF ACTION FOR THE EU FOREST-BASED AND RELATED INDUSTRIES

The evaluation of the factors affecting the competitiveness of the EU FB-IND allows for the identification of the various longer term challenges the sector will be faced with. In this chapter, these challenges will be grouped in the following broad categories: Globalisation, the EU enlargement, environment and energy, technology and human resources, regulatory framework, and the industry image in the public. The action areas designed to meet these challenges are also outlined for each category.

2.1 THE GROWING IMPACT OF GLOBALISATION

Globalisation is not a new phenomenon in the EU FB-IND, but has gained pace in three successive waves: the internationalisation of trade, especially since the 1950s; the worldwide flow of capital, especially since the 1980s; the globalisation of information flows, which continue to grow faster than either trade or capital. It has resulted in the increased geographic availability and uniformity of technology, expertise and capital through cheap and available transport, ever more rapid and effective communications media and networks. The interaction of these factors has led to the creation of a more homogeneous and cross-cultural business environment.

In the EU FB-IND, the effects of globalisation have been seen in the increased worldwide procurement of raw materials such as wood and pulp and in the intensification of world-wide trade in forest-based products (+ 30% in 1992-1996)¹⁸ and forest industry designated technology products. Globalisation is a two-way phenomenon: on the one hand it offers increased opportunities to those sectors that are active in extra-EU exports, such as paper & board and graphic industry. On the other hand it increases pressure within the EU through low cost imports, which affect in particular the products with a low value-added, e.g. sawn wood, certain wood based panels and pulp industries. In both cases, the EU FB-IND faces competition from countries where social and environmental standards, concern for sustainable forest management, health and consumer protection, and the priority accorded to intellectual property rights and hence production costs are at a lower and, in some cases, far lower level. In the next WTO Millennium Round environmental standards should be given special attention.

The Community industry is increasingly challenged by the new low cost competitors from Asia, Latin America and sometimes the CEEC, in particular when the new competitors protect the development of their FB-IND through high import tariffs and restrictive export quotas. This has caused the EU FB-IND to lose market shares, both within and outside the EU. Competition is further increased through growing mobility and transfer of technology, knowledge and know-how in the form of skills towards low input cost areas, thus accentuating the pressure on the EU FB-IND. In the 1990's, the highest growth in new investment outside the EU in the FB-IND has taken place in Asia resulting in a loss of market shares of the EU FB-IND in certain sectors, such as in the wood based panels industry.

Initial consequences of this new competitive situation can be observed in the increase in cross-continental purchases of forest resources, mergers, joint ventures, alliances, licensing and rights purchases. In addition to pure cost factors, these developments are intended to ensure future wood supply, improve the stability of the market, and to better serve FB-IND customers, a number of whom act on a global scale.

Challenges:

- Adapt the industry structure to the new competitive situation;
- Improve access to markets in third countries for the Community exports and investment, *inter alia*, through WTO and prepare for the Millennium Round negotiations;
- Strive for free and fair trade with respect to tariff and non-tariff barriers;
- Work towards the harmonisation of international standards, certifications and tests, as well as their mutual recognition;
- Safeguard EU FB-IND interests in international fora.

Action areas:

In order to ensure the global and sustainable competitiveness of the EU FB-IND, it will be essential to guarantee access to raw materials and export markets, to create an environment that favours competition on an equal footing, and to encourage the EU FB-IND's adaptation to a fiercer competition.

- ❖ Encourage the EU-FB-IND to adapt and restructure using market-driven mechanisms and improve the availability of funding;
- ❖ Ensure the continued access to and the availability of raw materials through actions against eventual third country export restrictions;
- ❖ Collect relevant information about tariff and non-tariff barriers in third countries that impede access to these markets, and to take appropriate measure, through the WTO if necessary, for their removal;
- ❖ Promote in the next WTO Millenium Round a high-level of environmental standards;
- ❖ In international fora such as WTO, WIPO, UN/CSD, ISO, work towards the harmonisation and the mutual recognition of rules and standards, and contribute to the development of more equal, fair and reciprocal competition rules.

2.2 THE ENLARGEMENT OF THE EU

The political decision to incorporate into the EU the candidate Central and Eastern European Countries (CEECs) has underpinned the transition of these countries to democracy and market economy. With a population of more than 100 million, the candidate CEECs constitute a significant potential growth market for EU forest based and related products. The growth in demand will start to be felt when the current relatively low consumption levels begin to approach the EU-15 levels. The FB-IND in the CEEC play an important role in the modernisation process, as they are often at the center of key industrial activities and export revenue sources. FB-IND figures among the top three industry sectors in the Baltic states, Slovenia and Poland.¹⁹

However, the strengths of the candidate CEECs, such as low labour costs and a good level of technical qualifications, are often outweighed by outdated production technologies, low energy efficiency and poor environmental performance. The forest resources of the candidate countries are considerable, representing 33 million hectares of commercial forests i.e. 36% of those of the EU-15.²⁰ However, the privatisation process of these resources has only recently been launched with an unknown outcome. Furthermore, it will take some time to implement sustainable forest management, as widely practiced in the EU where it is grounded in a legislative base, supported by monitoring institutions and private forest owners.

Challenges:

- ❑ Ensure adoption and application of the EU legislation, the so-called 'acquis communautaire';
- ❑ Build up complete and reliable statistics of the FB-IND in the CEEC;
- ❑ Acquire sufficient knowledge of the economic, technical and environmental performance with the aim of ensuring the CEEC's ability to compete in the Single Market.

Action areas:

- ❖ Monitor the transposition and implementation of EU legislation in the CEEC ;
- ❖ Evaluate the CEEC FB-IND's readiness for accession and verify that the candidate countries meet the requirements of the Single Market;
- ❖ Enhance institution-building, both in public administration and among the FB-IND in the CEECs;
- ❖ Develop statistical information related to the FB-IND in the CEECs;
- ❖ Improve awareness within the CEEC of the effects of the EU policy objectives on the FB-IND and facilitate industrial cooperation with their EU partners.

2.3 AN INCREASED SENSITIVITY TOWARDS SUSTAINABLE DEVELOPMENT, ENVIRONMENT AND ENERGY

Increased awareness at all levels of society has led to the growing sensitivity of the public to environmental issues. For the Forest-Based Industries and Related Industries, sustainable development has become one of its key priorities. This implies that an overall balance has to be found between environmental, social and economic aspects. The challenge is thus two-fold: the

sector has to improve the the environmental performance on a permanent basis while increasing its competitiveness in order to maintain its presence in the EU, thus providing employment and creating value-added. As regards EU environmental legislation, at present one of the most advanced in the world, predictability, coherence as well as economic and social feasibility are necessary to maintain competitiveness and hence employment in the EU FB-IND. The Commission invites all stake holders to continue their commitment to achieve a balanced approach to the three main pillars of the sustainability.

Sustainable forest management (SFM) is vital in order to maintain all the ecological, social and economic functions of forest resources, amongst which is the necessity of ensuring a constant supply of raw materials at competitive prices. Increasing awareness and concern about the ecological and social aspects requires effective and coordinated policies on forestry, land use, environment, industries, energy, fiscal matters and foreign trade at the appropriate level. There is a need to demonstrate and visualize at national, EU and pan-European level that SFM has become in recent years an important vehicle of social, political and environmental change. An important policy tool to be developed by the Member States in this respect will be the formulation and implementation of National or Sub-national Forest Program's (NFP) as defined by the Intergovernmental Panel of Forests (IPF) and identified as a substantial element of the EU Forestry Strategy. In this context, careful consideration has to be given to the ways of carrying out SFM and its designation. According to estimates, the average cost impact of SFM and SFM designation adds between 8 and 20% to the costs of wood as raw material (at stumpage level).²¹

Much has already been achieved with regard to the reduction of emissions through improved techniques and processes. The remaining challenge consists in applying best practices throughout the different sectors in the EU, in particular by applying the Best available techniques (BAT) as defined in the IPPC Directive, taking into account local conditions and the size as well as the need to avoid the shifting of pollution between the different media. These BAT are currently the subject of an information exchange between Member States and Industry, the result of which will be published by the Commission as a BAT reference document for each sector, in particular the pulp and paper sector.²² Research is needed on the question of the form (liquid, gaseous, solid) in which emissions could best be improved.

Sustainable development means also improved recovery of used wood, paper and board products and hence a smaller amount of final disposals. The waste management legislation is a particular challenge to a sector that has been active in recovering wood and paper waste to produce either secondary raw material (fiber) or energy from a renewable source. The definition of waste that is currently applied to secondary raw materials is seen by industry as creating an administrative burden and costs in particular for small and medium enterprises. The implementation of the Directive on packaging and packaging waste, due to be revised at the beginning of 2000 will have to carefully consider the need to avoid differential treatment of materials which could distort competition between those materials.

As mentioned earlier, recovery activity within the FB-IND is already highly developed starting with heat recovery from the debarking of the trees and all the other process-inherent recovery and recycling activities. Although further improvement in this area is still possible, further development of wood and paper recovery activities is nevertheless a many-sided issue with a number of technical parameters to be taken into account. Research is needed on many aspects of wood, paper and board products to improve their recyclability as new material or energy source from a life-cycle analysis point of view, such as de-inking techniques and non-hazardous wood treatment substances.

Wood and paper products, in particular the more durable products, play a significant role in climate change, through the extension of the carbon sink effect of forests. Increased use of wood products can both stimulate the growth and carbon sequestration and increase the carbon storage effect, while decreasing the emissions through material substitution. The Special Report on land use, land use change and forestry, being prepared by the Intergovernmental Panel on Climate Change, will assess existing data on the carbon sinks and the carbon-storing products in order to

implement the Kyoto Protocol. This report, due in May 2000, is highly relevant to the FBI-IND that are contributing to it. In particular, it will allow to implement Art. 3.3 and 3.4 of the Kyoto Protocol.

The EU FB-IND are medium to heavy energy consumers. Given the already important achievements in increasing energy efficiency, the scope for further improvements is small. Energy recovery through the incineration of wood and paper waste, which form renewable energy resources, should be encouraged as a way to further decrease the use of fossil fuels. The European Union has set the goal of increasing the share of energy from renewable sources from 5% up to 12% by 2010, with most of the increase foreseen to come from bio-mass i.e. from forests and agriculture.²³ Since wood is the common raw material of the FB-IND, the need to secure a reliable and permanent supply of wood has become an even greater challenge.

Challenges:

- ❑ Improve the EU FB-IND environmental and energy performance;
- ❑ Promote Sustainable Forest Management within the EU;
- ❑ Contribute actively and competently to coherence, predictability and competitive sustainability in environmental and energy legislation and voluntary instruments;²⁴
- ❑ Ensure energy supply at competitive prices;
- ❑ Secure a permanent supply of wood at competitive prices under the development of energy policy from renewable energy sources;
- ❑ Communicate on environmental performance using agreed measurement methods.

Action areas:

Legislation and measures taken should be based upon proper scientific assessment and cost/benefit analyses, taking into account proportionality. The FB-IND contribution to sustainable development could be further enhanced by taking the following actions:

- ❖ Improve the EU FB-IND environmental and energy performance through continuous R&D efforts, environmental and energy benchmarking and uptake of cost effective new technologies and other solutions, taking into account the particular needs of SMEs;
- ❖ Improve waste management through a comprehensive approach including cost effective recycling, energy recovery and innovative solutions for final disposal by finding the best means and waste disposal form (liquid, gaseous or solid) to effectively reduce emissions;
- ❖ Assess the carbon sequestration and storage effects of the EU FB-IND in the forest products and energy recovery and evaluate how, through increased use of FB-IND products, their climate change impact is improved, considering also the substitution effect of less environmentally friendly materials;
- ❖ Support the implementation of the EU forestry strategy by contributing to promote cost-effective sustainable forest management and to set up national or sub-national forest programs and by thus contributing to establish a suitable SFM framework;
- ❖ Identify areas in environmental and energy questions, in which value added could be reached through cost effective voluntary instruments, such as EMAS and contribute actively and competently to the legislative process;
- ❖ Develop systematic and comprehensive reports for the EU FB-IND in the fields of environment and energy.

2.4 THE ACCELERATED TECHNOLOGICAL EVOLUTION AND ITS IMPLICATIONS FOR HUMAN RESOURCES

2.4.1 TECHNOLOGY, INNOVATION AND R & TD

Globalisation, sustainable development and growing competition from low-cost countries put increasing pressure on productivity and environmental performance and create a need for new technical developments in order to stay ahead in the competitiveness race. High input costs can be

overcome by using modern technology and ICT, with the aim of increasing productivity at FB-IND installations and of improving product quality. Equally important is the need to be aware early of changing customer requirements and to engage more in customer-oriented research and development activities. The maintenance of competitiveness in these conditions requires considerable and continuous efforts in R&D, a permanent and enhanced process of innovation, and well-organised dissemination of related information, for the efficiency of the industry as a whole. Within the Fifth Framework Programme for RTD (1998—2002), several specific and horizontal programmes include research activities on forest-based industries. Within the forestry-wood chain community RTD efforts are aiming at optimising the efficiency and productivity of the entire "production and processing chain" and matching the sustainable production of forest resources to industrial and market needs and requirements.

Furthermore, new information and communication technologies are rapidly changing the traditional business environment. New possibilities, such as electronic and cross-media publishing, using both paper-based and electronic communications tools, amplify the convergence of technologies and media. Other emerging areas, such as electronic commerce create new challenges and business models in the area of Intellectual Property Rights (IPR), liability data protection and the security of commercial transactions. Electronic Data Interchange (EDI) and in some sectors 'digital workflow' require the development and implementation of industry standards. It is still a major challenge for many of the FB-IND subsectors to ensure that SMEs also benefit from ICT.

Challenges:

- ❑ Improve competitiveness by carrying out Research and Development leading to new processes and innovations;
- ❑ Encourage innovation and networking within the FB-IND;
- ❑ Satisfy end-user requirements by designing new 'user oriented' products and services, e.g. in new media;
- ❑ Develop and increase the use of systems' solutions e.g. in construction products;
- ❑ Ensure that FB-IND research needs and priorities are meaningfully reflected within future EU RTD programmes;
- ❑ Ensure that the FB-IND takes maximum advantage from the Global Information Society, ICT and electronic commerce; improve the uptake of cost-effective new technologies and other solutions, in particular in SMEs.

Action areas:

- ❖ Contribute efficiently to the overall objectives and RTD priorities of the 5th Framework Programme for RTD and national programmes;
- ❖ Disseminate in an efficient and effective way information on research results, best practice and solutions, thereby enhancing the technology and innovation transfer process and ensuring its monitoring;
- ❖ Investigate the advantages that the Information Society, the use of ICT and electronic commerce could offer to the FB-IND;
- ❖ Monitor the uptake of new technology and ICT;
- ❖ Create incentives to encourage innovation in the FB-IND.

2.4.2 DEVELOPMENT OF HUMAN RESOURCES

Within an ever more knowledge-based and technology driven competitive environment, attaining, maintaining and improving a competitive edge depends increasingly on the availability of skilled human resources. Identifying and exchanging 'best practices', spreading information on education and training, supported by skills and competence benchmarking can help to facilitate this process. Moreover, new technologies such as ICT will influence the integration of new forms of work organisation and other techniques and require personnel with matching skills and abilities.

It is clear that the involvement of both sides of the industry in the design and implementation of training measures would help to increase their acceptance and make them more efficient.

Challenges:

- Attract a young and well educated labour force towards the FB-IND;
- Guarantee useful and efficient retraining programmes that will ensure that personnel are motivated and the companies remain competitive by creating a training culture that will lead to the use of these vocational training programmes by large companies as well as SMEs.

Action areas:

- ❖ Make available information about EU FB-IND at schools using also new media;
- ❖ Contribute to the development of technical and university level programmes to increase FB-IND's attractiveness;
- ❖ Develop and improve vocational training within the FB-IND, disseminating information of different vocational training and retraining possibilities, contributing to life-long learning;
- ❖ Investigate the value added of total quality management within FB-IND, especially SMEs, and define training needs.

2.5 THE EVOLVING INTERNATIONAL AND EU REGULATORY AND ECONOMIC FRAMEWORK

A considerable number of international, community and national instruments make up the legal framework within which the EU FB-IND operate. At international level, the EU FB-IND are concerned with trade issues in the World Trade Organisation (WTO), Intellectual Property Rights issues in the World Intellectual Property Organisation (WIPO), trade and environmental issues for forest products in the Intergovernmental Forum for Forests (IFF), and voluntary standards in the International Standardisation Organisation (ISO).

Within the EU, reinforcing the single market by ensuring free competition remains the main pillar of the strategy for growth, innovation and employment creation. Whilst the EU legislation sets the level of necessary harmonisation, it needs to be ensured that national legislation does not impede the free circulation of goods within the EU. In this context, further efforts are needed in the area of standardisation to promote intra-EU trade.

In order to promote the creation of an appropriate regulatory framework, public administrations need to gather adequate statistical information. At present, certain sectors of the FB-IND are absent from the statistics and some basic information is not available.

Challenges:

- Contribute to the formulation of fair and equitable international rules;
- Contribute to adequate protection for content owners;
- Promote free movement of EU FB-IND goods and services;
- Simplify the legislative and administrative burden for SMEs;
- Advance effective application of existing EU Directives;
- Contribute to the development of sufficient statistical systems, in cooperation with international organisations such as FAO and UN/ECE.

Action areas:

- ❖ Contribute to the adequate harmonisation of Intellectual Property Right rules in the borderless information society;
- ❖ Identify and remove technical and hidden barriers to trade in the Single Market;
- ❖ Ensure the monitoring and evaluation of the development, transposition and implementation of EU directives, regulations and other legal instruments;
- ❖ Investigate how to simplify the administrative burden on SMEs;
- ❖ Clarify and define present and future requirements for information and statistics for the whole chain of FB-IND and propose activities to this end;
- ❖ Enhance co-operation with relevant European and international bodies.

2.6 THE GROWING IMPORTANCE OF COMMUNICATING A GOOD IMAGE TO SOCIETY

In general, the public's knowledge of the EU FB-IND (with the exception of the publishing industry) is incomplete, and hence the industry's image is frequently negative. In the extreme, these industries may be perceived as irresponsible tree killers and destroyers of mankind's natural resources, and as old-fashioned low-tech chimney industries polluting the environment. To make matters worse, the EU FB-IND have often in the public mind been connected to, and consequently have suffered from, the human-induced deforestation which takes place outside the EU.

The EU FB-IND should make efforts to improve its image. Information campaigns directed at the broad public could help to promote the fact that the FB-IND are amongst the most sustainable industrial sectors in the EU. These campaigns should demonstrate in particular the sector's use of renewable raw materials, their energy efficiency, their well-developed recycling and energy recovery capacities as well as the industry's contribution to carbon trapping and storage.

These particular environmental qualities of FB-IND have been understood both at international fora and within the European institutions such as the European Parliament, the Committee of Regions and the Committee of Economic and Social Affairs. Several foras, such as the Intergovernmental Panel of Forests of the UN Commission for Sustainable Development (1997) and the Third Ministerial Conference on the Protection of Forests in Europe, held in Lisbon in June 1998, stressed the need to 'take action to stimulate and promote the sound use of wood and other forest-based products as environmentally friendly and renewable resources'. The European Parliament's 'Thomas Report' emphasised, furthermore, the need for development of a European campaign for the promotion of wood and wood products.

Closer and systematic cooperation between the various sectors of the EU FB-IND would bring about significant synergy effects and could help to improve the industry's image, to its competitive advantage.

Challenge:

- Improve the public's awareness of both the positive characteristics of the EU FB-IND and of its products vis-à-vis competing materials.

Action areas:

In general, knowledge and awareness of the forest-based and related industries amongst the professional community, politicians, NGO's, schools and universities, as well as the public, is insufficient. The public's perception of FB-IND is mainly negative and based on inaccurate information. This works to the direct competitive disadvantage of the FB-IND and does little to encourage a talented, technically qualified labour force to join the FB-IND. In a technology oriented future, this could become a drag on the long-term competitiveness of the sector.

Awareness of the industry's strengths in different fields needs to be improved by taking the following actions:

- ❖ Develop a common communications strategy for the various FB-IND sectors benefiting from the knowledge and experience of professional communications and public relations experts;
- ❖ Collect more accurate and reliable information on the perceptions of the FB-IND, for example by carrying out a Eurobarometer opinion poll (the EU's tool to assess and measure public opinion on specific issues throughout the EU);

These awareness-building actions and other actions of common interest could best be worked out through improved cooperation of the various sectors of the EU FB-IND. Actions proposed are:

- ❖ Use the 'Advisory Committee to the Commission on Forestry, Forest-based and Related Industries' (reconstituted in December 1997), and its working groups to extend cooperation within the FB-IND; this Committee should also serve as a preparatory platform for discussions in political fora.²⁵
- ❖ Create a Forum on Forest-based and Related Industries, involving all the main stakeholders; this Forum should ensure adequate implementation and follow-up of actions and measures agreed upon and could include a High Level Industry Panel functioning as a Steering Committee for its work.

3. CONCLUSIONS

The Commission recognises the importance of the Forest-Based and Related Industries (FB-IND) in the EU-15, and their contribution to the sustainable development within the EU due to economic and social contribution of the industries which provides a high level of employment and their particular environmental characteristics, from the renewability of wood as their main raw material to the high level of recovery and recyclability of most of their products.

However, as highlighted in this communication, the FB-IND are faced with a number of important challenges, which could create new opportunities but which also constitute threats with regard to the industry's future global competitiveness and its sustainability. Areas for concrete actions to be undertaken by the different stakeholders in a proactive and cooperative approach have been identified.

In order to effectively pursue the implementation of these actions, the Commission proposes to create a Forum, constituted of representatives of the EU-FB IND, the services of the European Commission and other main stakeholders (forest owners, trade unions, environmental NGO's, scientific and academic communities). It should also comprise Member States experts and Members of the European Parliament. The Forum should in particular:

- complete the analysis of the competitiveness factors and the identification of the main challenges of the EU FB-IND.
- discuss and agree on concrete actions to be taken and/or pursued by the different stakeholders.
- follow up their implementation and provide regular update of the actions agreed upon.

It is proposed that the existing 'Advisory Committee to the Commission on Forestry, Forest-Based and Related Industries'²⁶ should prepare and coordinate, through its working groups, the inputs required to establish the actions. The Commission also suggests calling a plenary meeting of the Forum on an annual basis, in collaboration with the Presidency and the High Level Industry Panel.

The Commission will report periodically to the Council, the European Parliament and the Committee of the Regions, on the evolution of this initiative.

ANNEX 1:

SUMMARY OF THE RESULTS OF THE 'SWOT' EVALUATION CARRIED OUT IN COLLABORATION WITH INDEPENDENT EXPERTS AND REPRESENTATIVES OF THE FB-IND.

The conditions for the EU FB-IND present and future competitiveness could be described as Strengths, Weaknesses, Opportunities and Threats that are presented in a "SWOT" table below.

SWOT - Forest Based and Related Industries

<p>STRENGTHS</p> <p><u>Tangibles: Input cost factors:</u></p> <ul style="list-style-type: none"> ▪ Sustainable and expanding raw material base <p><u>Tangibles: Technological factors:</u></p> <ul style="list-style-type: none"> ▪ Efficiency of production facilities ▪ Advanced technology ▪ Use of ICT technology and multilingual knowledge <p><u>Intangibles: Quality & performance:</u></p> <ul style="list-style-type: none"> ▪ High quality products and service ▪ Strong environmental performance ▪ Potential for FBI clustering ▪ Targeted advertising in magazines and newspapers and directories ▪ Knowledge of local languages and culture ▪ Experience in data management ▪ Know-how & skills ▪ Proximity & access to one of world's largest and sophisticated markets ▪ Good health and safety standards 	<p>OPPORTUNITIES</p> <p><u>Tangibles: Input cost factors:</u></p> <ul style="list-style-type: none"> ▪ capitalise on expanding forest resource ▪ participate in supply chains from cost-competitive regions <p><u>Tangibles: Technological factors:</u></p> <ul style="list-style-type: none"> ▪ development of Trans European Networks ▪ electronic publishing <p><u>Intangibles: Quality & performance</u></p> <ul style="list-style-type: none"> ▪ expand use of wood ▪ promote wood as lifestyle product ▪ total product solutions ▪ specialisation ▪ electronic commerce ▪ archived information providers ▪ complementarity with new media ▪ capitalise on environmental investments ▪ R & D and know-how advancement ▪ restructuring (esp. networks) <p><u>Intangibles: Legislative and institutional framework:</u></p> <ul style="list-style-type: none"> ▪ success of Euro ▪ enlargement (larger market and control of low cost competition) ▪ more equitable taxation
<p>WEAKNESSES</p> <p><u>Tangibles: Input cost factors:</u></p> <ul style="list-style-type: none"> ▪ high raw material costs, esp. wood ▪ high labour costs ▪ high energy costs ▪ high costs of printing <p><u>Intangibles: Quality & performance:</u></p> <ul style="list-style-type: none"> ▪ lack of forest/wood cultural consciousness ▪ fragmented structure ▪ inadequate training ▪ often conservatism and lack of innovation skills and knowledge in IT and economy ▪ lack of end user/market orientation <p><u>Intangibles: Legislative and institutional framework:</u></p> <ul style="list-style-type: none"> ▪ high taxes ▪ low profitability (→ low re-investment) ▪ complicated (& costly) bureaucracy ▪ lack of capital for modernisation ▪ no reliable statistics on SMEs 	<p>THREATS</p> <p><u>Tangibles: Input cost factors:</u></p> <ul style="list-style-type: none"> ▪ increasing wood costs + lower supply ▪ increasing importance of recovered fibre (wood & paper), but risks of distortion of mix through imperfect policies ▪ lower costs and environmental standards in competing third countries <p><u>Intangibles: Quality & performance:</u></p> <ul style="list-style-type: none"> ▪ declining readership, household penetration and poor literacy ▪ advertising revenue moving to commercial broadcasting and new media ▪ lack of trainers <p><u>Intangibles: Legislative and institutional framework:</u></p> <ul style="list-style-type: none"> ▪ unbalanced environmental taxes ▪ potential shortcomings of adequate protection of content ▪ decreasing budgets of schools and libraries

- 1 COM (1998) 649 Final.
- 2 Source: Eurostat.
- 3 Source: Eurostat.
- 4 Source: "Competitiveness of the EU Publishing Industries", Media Group, Turku, Finland
© European Communities 1999.
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- 6 Fax from C.E.I BOIS (Confederation Europeenne des industries du bois) of 2 February 1998
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