Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

Development Studies for Sectors with Potential

Development Study on the Wood and Furniture Industry in Bosnia and Herzegovina

Draft

November 2001

Written by:

INNOTECH Holztechnologien GmbH
Prof. Dr. - Ing. (habil.) Th. Stautmeister
Fürstenwalder Allee 28
12589 Berlin
Telephone: +49-30-6484880
Fax: +49-30-64848811
E-mail: zentrale@innotech-ht.com

for:

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH
Ulrike Gantzer-Sommer
OE 8012
Postfach 51 80
65726 Eschborn
Germany
Telephone: +49-6196-79 2139
Fax: +49-6196-79 7297
E-mail: ulrike.gantzer-sommer@gtz.de

Wulf Hendrik Goretzky, Lejla Abdagic, Muamer Peljto
GTZ-Office for Private Sector Promotion
Splitska 6
71000 Sarajevo
Bosnia and Herzegovina
Telephone/Fax: +387-33-220596
E-mail: wulf.goretzky@gtz.com.ba
lejla.abdagic@gtz.com.ba
muamer.peljto@gtz.com.ba

funded by

Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ)
(Federal Ministry for Economic Co-Operation and Development)
Referat 204
Friedrich-Ebert-Allee 40
53113 Bonn
Germany

Project Processing Number: 97.0795.1-009.00

Contents

1. Introduction.. 4
1.1 Definition of the Sector and Methodological Basis 4
1.2 Trends in the Wood and Furniture Industry................................. 4
1.3 Output Chain and Direct Investment 5

2. Analysis of the Current Situation of the Wood and Furniture Industry in Bosnia and Herzegovina.. 7
2.1 Importance of the Sector for the National Economy 7
2.1.1. Raw Material Supply 7
2.1.2. Tradition and Development 8
2.1.3. Contribution to the GNP 10
2.1.4. Sector-Relevant Activities of Foreign Organisations......... 11
2.1.5. Direct Industrial Investment 13
2.1.6. Property Structures 13
2.1.7. Employment, Income, Women and Young Employees..... 14
2.1.8. Ecology 15
2.2 Wood Industry 15
2.2.1 Types of Wood 16
2.2.2 Products.. 17
2.2.3 Geographic Distribution 18
2.2.4 Current Markets 21
2.2.5 Technological Situation.. 21
2.2.6 Operating Ratios and Management Know-How................ 22
2.3 Accessories, Materials, Services 23
2.3.1 Wooden Materials 23
2.3.2 Fittings, Glues, Paints 23
2.3.3 Specialised Service Providers 24
2.4 Furniture Industry 25
2.4.1 Types of Furniture and Products...................................... 26
2.4.2 Geographic Distribution 27
2.4.3 Companies 27
2.4.4 Current Markets 27
2.4.5 The State of Technical Equipment................................... 27
2.4.6 Operating Ratios and Management Know-How................ 28
2.5 The Paper Industry and Other Products that are Made of Wood as a Raw Material 29
2.6. Product or Input-Output Ratio 29
2.7 Meso Level 31
2.8 Trade Systems 32

3. Sales Possibilities 33
3.1 Local Markets... 33
3.2 Regional Markets 34

3.3 The EU 35
3.4 Other Markets 36
3.5 Competitors and Benchmarking 36
3.5.1 The Most Important Competitors 36
3.5.2 Hungary 37
3.5.3 Bulgaria 37
3.5.4 Romania 37
3.5.5. Benchmarking 37
3.6 Sales Possibilities and Future Prospects 38
3.6.1 Summary 38
3.6.2 Sub-sectors 39
4.1 Structure of Objectives 40
4.2 Strategic Approach 41
4.3 Measures for the Opening of New Markets 48
4.4 Measures to Improve the Integration of the Sector 49
4.5 Qualification Activities and R&D 49
4.6 Funding 50
4.7. Foreign Investment 50

5 Catalogue of Measures 51
5.1 Immediate Measures 51
5.2 Medium-Term Measures 53
5.3 Long-Term Measures 55

Annex: Bibliography 56

Abbreviations

CAD/CAM	Computer Aided Design / Computer Aided Manufacturing
EBRD	European Bank for Reconstruction and Development
e.g.	for example
etc.	et cetera
EU	European Union
EUR	Euro
FAO/ WB	World Bank
FBaH	Federation of Bosnia and Herzegovina
GNP	Gross National Product
GTZ	Gesellschaft für Technische Zusammenarbeit
IBRD	International Bank for Reconstruction and Development
IDA	International Development Association
i.e.	this means
IFC	International Finance Corporation
ISO	International Standards Organization
m^3	cubic meter
MDF	Medium-Dense Fibreboard
MIGA	Multilateral Guarantee Agency
NGO	Non-Governmental Organisation
OSB	Orientated Strand Board
pcs.	Pieces
p.a.	per annum
R&D	Research and Development
REFA	Brand of the Verband für Arbeitsstudien und Arbeitsorganisation e. V. Darmstadt (Association for Work studies and Organisation of Work) (originally: Reichsausschuss für Arbeitsorganisation)
RS	Republika Srpska
t p.a.	Tons per Year
TEUR	Thousand Euro
Tm^3	Thousand Cubic Meters
USAID	United States Agency for International Development

1. Introduction

1.1 Definition of the Sector and Methodological Basis

This study has prepared a strategy for the development of the wood/furniture sector in Bosnia and Herzegovina.

In the study, all phases of woodworking and wood processing right up to the production of high-value finished goods within this sector are analysed. This analysis also includes so-called wood materials and paper, i.e. material made out of a combination of wood particles or wood fibres and chemical additives (glues, resins). The wood-producing processes (raising, harvest – i.e. classical forestry) are considered only where it is necessary in order to determine basic data for forthcoming phases. The building industry is regarded as a purchaser in this study.

Handicraft and industrial enterprises, irrespective of their type of ownership, are the subject of this analysis where possible.

An analysis of the current situation of the sector is followed by an initial evaluation of the market potential of the sector's enterprises. Such an evaluation can naturally only provide a momentary insight into the situation. Wherever the available data permit, this study attempts to consider the development trends of the past years and makes forecasts for the immediate future.

Special emphasis is laid on the fact that this study does not only deal with the technical aspects of this sector's development, although they require effective action in the aftermath of war. This analysis also covers questions of strategy and the reorganisation of enterprises against the background of the very slow transformation of the government-controlled economy into a market economy dominated by the private sector.

On the basis of this analysis of the current situation and the comments on the market chances, a development strategy for this sector is elaborated. This strategy cannot deal with the requirements of any individual enterprise; it is rather intended to contain the evaluation and assessment of current trends and the resulting framework recommendations for the development of this sector as a whole.

In a concluding catalogue of activities, proposals for political short, medium and long-term action are formulated.

1.2 Trends in the Wood and Furniture Industry

Any analysis of trends must proceed from the current market requirements. In addition, some basic trends in consumer behaviour have to be considered.

Consumer behaviour worldwide is characterised by increasing individualisation in demand and offer; and this is all the more true of fashion-related sectors like wood and furniture.

Growing individualism and personal freedom as a political trend is increasingly reflected in industrial production: i. e. in the appropriate processing organisation in the course of production by (individual) order. This form of organisation allows the original principle of design of woodworking in handicraft (joiner's) shops to be applied industrially as well (so-called 'lot size 1 manufacturing').

With an annual turnover of around 33 EUR billion, Germany has the biggest furniture market in the world, and thus its trends can be considered market-determining or representative. While the 1970s and 1980s characteristically offered the largest possible ranges of products for the lowest possible prices, growing awareness of the need to increasingly economise resources, particularly in the more prosperous markets, has initiated a trend towards an increasing use of renewable raw materials, i.e. using solid wood instead of materials produced on an energy-intensive basis or with chemical additives. This trend has resulted in considerable growth rates for the use of wood, particularly in the fields of internal fixtures and furniture.

The development of new materials (MDF board, 3-D-ductile veneers, extrudable wooden materials) is aiming at providing new, more cost-efficient possibilities of design with natural materials, and thus substituting wood for plastic or metal components.

The wood and wood products market is essentially linked to the economic conditions in the building industry, which has been experiencing a permanent boom for ten years, with alternating territorial centres of growth. This provides eastern European companies with considerable chances in the European market. The distances that this sector's products can be transported are limited by profit margins, and thus this market is subject to limited globalisation. As one of the special features of this sector, an inevitable precondition for participation in the market is the physical existence of production premises. This presence, however, can be achieved with a relatively low investment (compared with other sectors), assuming the availability of properly trained personnel.

The growing use of wood as fuel has been prompted, on one hand, by the reduced availability of other sources of energy; while on the other hand, energetic wood processing technologies have now reached a level which also permits economically efficient alternatives to fossil fuels. Nor should it be forgotten that wood is currently the only fuel that completely absorbs the carbon monoxides and dioxides released while growing or consumption, and thus it is at present the only fuel that enables a closed cycle of materials.

1.3 Output Chain and Direct Investment

When looking at sectors, it is common practice to describe a specific output chain along the technical steps (value added) of processing. Usually such an output chain also coincides with the demonstrable potentials of specialisation among the sector's enterprises.

In the following section, this chain is briefly shown (without claiming total completeness) in its various parts. This study extensively uses this chain as a basis for analysis and strategy formulation. The category of paper is left out deliberately since it and its products are often regarded as a sector on their own.

1. Primary woodworking
   Pit wood (for the mining industry), garden wood, building timber (saw timber), wooden packing material;
2. Wood processing
   Planed wood, parquet, glued wood, wooden components, wooden toys;
3. Wooden construction components;
   Windows, doors, timber construction, roof structure;
4. Wooden materials
   Veneers; plywood, coreboard, chipboard, fibreboard, MDF board,
   oriented strand board;
5. Furniture
   Upholstered furniture, beds, chairs and tables, corpus* furniture for living and sleeping areas, kitchen furniture, office furniture, small furniture, furniture objects*;

As outlined in section 1.2 above, the vicinity to markets (presence in the market) plays an essential role in decisions concerning direct investment. In other words, with the existence of highly solvent markets, a distance of not more than 800 – 1,000 km from the target market is a precondition for success. A tiny increase in these figures can be achieved by relevant stable cost advantages.

Further factors are the local availability of the required raw and semi-processed materials, existing infrastructure for distribution and/or transportation, and skilled personnel. These factors support the attractiveness of Bosnia and Herzegovina as a location for investment, but are insufficiently recognised internationally.

It is common practice to represent companies through guilds in regionally-organised chambers of handicrafts (craftspersons' businesses) or chambers of trade and industry (industry and trade businesses, other businesses), as the case may be. Their main task is the implementation of the required framework conditions vis-à-vis the political bodies, and the safeguarding of the interests of their respective industry, e.g. in taxation legislation, profiles of vocational training, or the conditions for the licensing and certification of companies in the respective industry. Chambers of foreign trade formulate industry-related strategies, act as contact partners for international investors, and assist companies in their trade abroad.

2. Analysis of the Current Situation of the Wood and Furniture Industry in Bosnia and Herzegovina

2.1 Importance of the Sector for the National Economy

The wood/furniture sector has a special strategic importance for Bosnia and Herzegovina due to the following reasons:

- The raw material is renewable, locally available, and relatively simple to process.
- Processing requires relatively low investment
- There are internationally recognised woodworking traditions in Bosnia and Herzegovina
- Production is labour-intensive the world over, which gives rise for expecting positive effects on the labour market even when an increase in productivity is achieved
- Vocational training of skilled personnel can be performed relatively easily by re-training / job-specific training
- The Balkans is internationally recognised as a region for solid wood furniture, a fact that helps when seeking to penetrate international markets
- Because of the product's properties (Bosnian beech), an internationally recognizable unique feature can be developed as a brand
- The largest consumer markets of furniture and wooden products in the world, Germany and Italy, are relatively near by

Bosnia and Herzegovina is the most densely forested state of former Yugoslavia (/2/). Due to this strategic importance, several studies and analyses on the situation of the wood and furniture industry were carried out between 1996 and 1999. Particularly worth mentioning are the papers submitted by the USAID, the EU, the IFC and the GTZ (see Annexes: Bibliography). It was not possible in every individual case to unambiguously verify the quantitative figures in these analyses, in particular the estimated total number of woodworking enterprises. Estimates of the nationwide processing capacity therefore widely varies.

This chapter attempts to give a brief summary of the structure of the wood industry in Bosnia and Herzegovina.

2.1.1. Raw Material Supply

So far, current and reliable data on Bosnia's and Herzegovina's forestry sector are largely unavailable. The last nationwide inventory-taking was done several decades ago. At present, methods for updating the data are being developed. Information is mainly based on a report made by an FAO/World Bank mission in 1996 (/6/), the IFC report of 1997 (/2/), and several other publications. Not all of these documents, however, quote their information sources; in many cases information is based on estimates.

Forest Area
Approximately 2.6 million ha (according to several sources), or nearly 53% of the territory of Bosnia, is legally defined as forest area. Out of this total area, the Federation of Bosnia and Herzegovina has about 1.4 million ha, and the Republika Srpska about 1.2 million ha (according to data in /5/). However, because of the statistical criteria of attribution, only around 43% of the country's territory is actually forested.

Only the so-called high forest constitutes a real economic asset; this covers an area of more than 1.3 million ha, i.e. approximately 25% of the territory of Bosnia and Herzegovina or roughly 51% of the forest area.

80% of the forest area is owned by the state, and 20% of it by private holdings. The state-owned forests, totalling about 2.1 million ha, are split into approximately 55% high forest, and 45% low forest and unstocked areas. Out of the 0.5 million ha of private forests, only 20% or so are high forest.

The useful forest area has to be revised downwards to a lower proportion because of the effect of war. An estimated 15-25% of the forested area or approximately 18% of the high forest is inaccessible because of the danger of mines. It should be expected that mine fragments will affect the processing of wood in sawmills for a long time to come.

Forest Management
Only irregular forest management should be assumed during the war period. Local experts estimate that the volume of felling and production in the forestry industry during this period dropped to 10-20% of the planned pre-war volume.

Table 1: Harvesting and processing of forest products in Bosnia and Herzegovina in 1990 (/6/)

	m^3	%
Total	4,310,000	100.0
Timber for industrial use	3,167,000	73.5
Technology Timber for technology	265,000	6.1
Timber for heating	878,000	20.4

2.1.2. Tradition and Development

Development before the War
The Republic of Bosnia and Herzegovina has a very long woodworking tradition. Before the war, there were approximately 180 enterprises in this sector, 60% of them in the Federation and 40% in the Republika Srpska. This industry consisted of both sawmills (primary industry) and processing facilities, as well as furniture and parquet manufacturers and wood for interiors. The wood industry accounted for about 10% of the country's total industrial production and achieved export revenues of 330 million EUR per annum (other sources mention 220 EUR million).

Most industrial enterprises and all export activities were organised in two state-run holdings: SIPAD and KRIVAJA. At the peak of their activities in the late 1980s, these two holdings accounted for 95% of Bosnia's and Herzegovina's production in the wood sector. SIPAD, with its 45 or so plants and 83,000 employees, is said to have achieved export revenues amounting to more than 220 million EUR, while KRIVAJA, with 16,000 employees and a turnover of around 165 million EUR, had an export volume of approximately 83 million EUR. Both groups had branches, subsidiary companies and/or shares in other companies abroad. Their most important customers were the Balkans (25-30%), Italy, Austria, Germany, France and Russia. (/4/)

The following Table 2 (from /6/, based on SIPAD data and estimated data) gives an approximate picture of the structure of the wood industry in Bosnia and Herzegovina before the war. The figures are not absolutely reliable, especially those for the Serbian part of the country. The original source of the quoted data is unknown.

Table 2: Estimated number of wood industry enterprises in Bosnia and Herzegovina before the war (/6/)

Product	Number of plants		
	RS	Federation	Total
Saw timber	18	39	57
Veneer, plywood	8	6	14
Pulp & paper	2	1	3
Wooden material	17	6	23
Furniture	15	35	50
Others (carpentry, interior work)	8	22	30
Total	68	109	177

Post-War Development

During the war, most of the wood was used for heating purposes. This remains essential after the war as well, although it is very dangerous because of mines. In addition, there have been reports of random harvesting of wood and wood selling, illegal felling and uncontrolled exporting of high-quality timber; this complicates the supply of the private companies in Bosnia and Herzegovina, and transfers output resources abroad.

Although the wood industry and forestry are non-governmental businesses, the current legislation prohibits the exporting of pure round timber. The implementation of these regulations, however, cannot be guaranteed sufficiently.

In 1997, the export volume of the KRIVAJA holding, totalling 3,500 employees in 8 plants, amounted to approximately 13 million EUR out of its overall turnover of about 33 million EUR. An EBRD report from April 1999 (/9/) mentions that SIPAD still had 21 independent enterprises with revenues of 72 million EUR in 1996 and 143 million EUR in 1997, of which about 33 million EUR was from export revenues. (/4/)

As a result of envisaged privatisations and the individual enterprises' need to orient themselves towards the market, the future of these holdings is in doubt. Due to the war, many enterprises have ceased to exist, are only operating to a limited extent, or have already become independent from their parent companies.

According to information given by the Ministry of Industry of Bosnia and Herzegovina, the wood and furniture industry achieved a capacity of 30% in 1999. The low current capital resources of the enterprises are mentioned as one of the crucial problems. As the number of staff is higher than international standards and equipment is usually obsolete, support by foreign partners is expected, and thus the finding of partners is considered one of the basic objectives.

Since 1999 a legal framework for free business has been drawn up in the Republika Srpska, while the Yugoslav laws are still in effect. In the course of this process the wood and furniture industry has been given high priority, with the aim of developing a deeper processing structure in the Republika Srpska. For this purpose, round timber export from the Republika Srpska has been prohibited. However, these prohibiting regulations have been bypassed via the Federation. Companies in the wood and furniture industry and the trade chambers both desire stronger co-operation with German companies and to realign the country's economic structures in accordance with the German example. The need to technologically re-equip and address the considerable training deficits is regarded as one of the essential problems of the industry.

2.1.3. Contribution to the GNP

The quantitative importance of the wood and furniture sector for the national economy can hardly be evaluated on the basis of the available data. For instance, according to /7/ the volume of this sector was 53 million EUR in 1999. The same source mentions that this sector's export of that year was 104 million EUR for the Federation alone.

In this respect, it should be noted that the official statistics of the trade chambers cover only the state-owned enterprises. The export statistics, however, may have been made on the basis of the customs data. Hence it is possible to interpret these data as a reflection of the fact that the economic power of the state and the private sectors are already on a similar level.

The level of the industrial production (GNP) of Bosnia and Herzegovina in 1998 is quoted at around 6.6 billion EUR in /2/; the contribution of forestry to the GNP is said to be 2% (110 million EUR), and that of the building industry 11% (660 million EUR). The war-related drop in GNP to 2.2 billion EUR in 1995 has thus been recovered. The local authorities and Deutsche Bank research quote nominal GNP growth rates of 32% for 1995, 46% for 1996, and 39% for 1997 (/4/). This means that the economic output of the Federation of Bosnia and Herzegovina is again approximately half of what it was before the war. The Republika Srpska is believed to be far below this level at only around 25%.

2.1.4. Sector-Relevant Activities of Foreign Organisations

The international community allocated EURO 3.7 billion for the reconstruction of Bosnia and Herzegovina between 1996 and 1999. More than 50 countries, 30 international and 400 non-governmental organisations contributed to these funds. These funds therefore play an key role in the economic reconstruction of Bosnia and Herzegovina.

World Bank Group

The World Bank Group consists of the International Finance Corporation (IFC), the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA) and the Multilateral Guarantee Agency (MIGA). The instruments of financial aid include both loans and participations. While the projects of the World Bank play a role in the funding of small and medium-sized businesses, the IFC focuses its activities on large state-owned enterprises.

Wood Sector Agency Credit Line

The most important IFC programme in the Bosnia and Herzegovinian wood sector is the "Wood Sector Agency Credit Line", which was set up in 1998. On the basis of a sector study, 7 state-owned companies that were regarded as strategically important were selected, and granted loans as part of a "re-vitalisation" framework for the purchase of spare parts and the acquisition of operating capital. For each company approximately DM 1 – 1.5 million was granted with this sum scheduled to be repaid by the end of 1999. The interest was 4 - 4.5%. Only the 'Konjuh' company received a larger sum. The total volume of this programme amounted to DM 13 million; it has, however, been suspended as, according to an IFC statement, some of the paid funds were used by the companies for purposes other than those of the programme.

Emergency Pilot Credit Project (RS)

As a counterpart to their *Emergency Recovery Project* in the Federation, the World Bank has initiated a loan programme for small and medium-sized businesses in the Republika Srpska. This project started in August 1998 and was planned to be completed by June 2000. Among other things, this project was intended to give credit-worthy small and medium-sized companies access to long-term capital resources. 17.6 million EUR was made available for loans. The loan facility is limited to a maximum of 275,000 EUR with a term of 3-5 years, including a redemption-free period of 6 months. Furthermore, the project includes a consulting component for companies applying. The project office is located in Banja Luka. By December 1999, loans totalling 7.5 million EUR had been approved and 5.9 million EUR had been disbursed. In total, 88% of the funds available have already been granted. As stated, 98% of redemption and interest payments are made on schedule. In total, about 135 loans are expected, creating 1,500 new jobs for the economy.

Local Initiatives Project

The Local Initiatives Project of the World Bank provides self-employed individuals and small companies with operating capital. Typical credit sums are up to 5,113 EUR with a maximum term of one year. The funds are allocated by local NGOs. Some small sawmills and wood processing enterprises have also raised these funds.

By now, 32,087 loans have been paid out in the RS and the Federation with an average volume of 1,458 DM; the redemption rate is 98.5%.

World Bank - Emergency Recovery Project (ERP credit line)
In the framework of the ERP project, 59 loans were granted to woodworking companies in the Federation between 1996 and May 1998. The total credit sum is 5.6 million EUR, i.e. 97,145 EUR on average per company. The credit line has since been closed, and the funds have been transferred to the Federation Investment Bank.

World Bank - Transition Assistance Credit (Federation TAC credit line)
Until May 1998 the TAC programme of the World Bank granted 16 loans totalling 3.6 million EUR to wood processing companies – a per company average of 224,968 DM. The programme is now closed.

European Union

Forestry Project
The Forestry Project was initiated as the Emergency Forestry Project in 1996 in order to reduce Bosnia's and Herzegovina's dependence on imported materials in the process of reconstruction, to recover its export capacities, and to enable planned forest management in selected areas of the country. The biggest component of this project was the funding of modern wood harvesting equipment, including forestry tractors, trucks, chain-saws and spare parts. At a later stage, this project was absorbed into the Forestry Project, which was approved in 1998 with a financial volume of approximately 22 million EUR and is co-financed by the EU and individual countries (most prominently Norway). This project is based at the Ministries of Agriculture of the Federation and the Republika Srpska.

Kreditanstalt für Wiederaufbau (KfW)
The KfW's project office is in charge of a special project. The German, Austrian and Swiss governments, the EU Commission and the so-called "Koschnik-Fund" provide funds for the refinancing of credit programmes that are managed by local banks, and their use is monitored. This also includes a programme for small and medium-size companies (at present 3.6 million EUR, with an application for this to be increased to 7.7 million EUR). Individual loans ranging from 2,556 DM to 51,129 DM are granted (interest rate: 12 –16%, term: 5 years, suspension of redemption for a maximum period of ½ year is possible, with at least 20% own funds).

PHARE
In the framework of the PHARE programme, a project for the wood and furniture industry has been realised from 1998 onwards (see Bibliography). This project is intended to support the development of this industry in Bosnia and Herzegovina and, in addition, to prepare co-operation between Bosnia and Herzegovinian enterprises from this industry and their counterparts in the EU. This project is relatively strongly influenced by Italy. In 1998 35 companies were analysed, and the following 9 companies, among others, were selected:

VRBAS, Borja, Drimex-Hollas, Agroimprex, Inga, Podgradci, Kozara, Lignosper, Enterior.

USAID

Approximately 32% of the loans that have been granted so far by USAID Business Finance have been allocated to the wood sector. USAID had granted about 50 loans totalling 18.4 million EUR to woodworking companies by May 1998, an average credit volume of 368,130 DM per company. The provision of these loan facilities was usually accompanied by technical advice by USAID Business Consulting.

Although this credit line is basically still accessible to new companies, USAID Business Finance concentrates its current activities on the redemption of already disbursed facilities.

Because of negative past experience, USAID no longer grants loans to state-owned enterprises. Nor are start-ups supported. The interest for a loan is approximately 8% p.a. with a 2-5 year term and a 6 month period of suspension of redemption. The required securities must be approximately twice the loan amount.

2.1.5. Direct Industrial Investment

In the period 1994-2000 2,185 foreign investments were registered in Bosnia and Herzegovina; 58% of their funds were allocated for joint ventures, as stated in the EBRD Transitional Report of 1999. The largest volume was reached in 1997 with about 550 million EUR. In 2000 around 95 million EUR was invested, with Germany with (31%) and Austria with (21%) the main investors. Foreign industrial investors were particularly active in the metalworking, food, construction, woodworking, trade and banking sectors.

Significant data for foreign investments made in the wood sector have not been located. So far, the flow of foreign capital to Bosnia and Herzegovina has not matched expectations, and so the creation of more favourable conditions for foreign investment should be given the highest priority.

2.1.6. Property Structures

All types of ownership exist in Bosnia and Herzegovina, although semi-governmental companies dominate the industrial sector.

The privatised share is usually held by the employees, meaning that the owner’s function, which entails making a commitment to safeguard the company’s liquidity and funding, can only be guaranteed on a limited basis. Through the government’s share in companies, the state exercises a number of important activities (e.g. providing employment and social support for former soldiers and displaced persons).

A list of the enterprises in this industry and their ownership structure is contained in section 2.2.3 and Table 9.

Private companies are primarily handicraft undertakings or small businesses, with few successful private industrial enterprises. In both entities private businesspersons are hindered and obstructed by policy-makers, which makes it necessary in some cases to integrate political or government actors in order to be commercially successful.

2.1.7. Employment, Income, Women and Young Employees

In the period from 1991 to 1996 employment dropped to 25%. Several national and international sources (e. g. /4/) indicate that the unemployment rate is now around 50%, and in some locations up to 99%. The proportion of female employees dropped from 36% to 33% in the same period, as stated in (/7/). In the wood and furniture sector, with the exception of furniture production in the Republika Srpska, the percentage of women employed is below that figure.

Table 3: Structure of Employment in the Wood and Furniture sector (/7/)

Year	1998	F %	1999	F %	2000	F %
RS			**13.236**		**13.508**	
Woodworking	no data	no data	5,830	27.2	5,940	27.2
Furniture production	no data	no data	7,406	34.5	7,568	33.6
F Bosnia and Herzegovina	**14,537**		**14,817**		**20,641**	
Woodworking	7,309	21.7	7,936	22.0	no data	no data
Furniture production	7,228	27.9	6,881	27.2	no data	no data

F – proportion of female employees

The average monthly income is 97 EUR, while the average cost of living of a 4 person family exceeds 102 EUR. (/9/)

Women are usually employed in administration or to help in production. In only three of the 39 companies that we visited did women hold responsible management posts.

Young employees are employed as on-the-job trainees because of the absence of an appropriate system of vocational training.

A significant employment problem is caused by demobilised soldiers and people displaced on ethnic grounds. These people need to be employed, which is however for many of them impossible in their original professions. In this respect the government delegates responsibility to the companies. Consequently, in some cases corporate governance is negatively affected.

The companies of this industry can be found throughout the country, especially in rural areas, which often makes them important regional industrial employers.

2.1.8. Ecology

Post-war ecological development is neither accompanied by adequate nature preservation nor a controlled response to numerous ecologically harmful phenomena. According to (/10/), central Bosnia is the most polluted part of Bosnia and Herzegovina. The geographic distribution of pollution is extremely unfavourable. About 57% of water pollution affects the Bosna river and its tributaries, around 25% affects the Vrbas river, 11% the Una river and 5% other river systems. The quality of air is critical, especially in the vicinity of industrial centres. The highest degrees of pollution can be found in the areas of Sarajevo-Zenica-Doboj; Zenica-Travnik; and Novi Travnik-Vitez, among others.

Several measures have been taken by foreign organisations, under UN control and on a national level, to prevent further pollution and conduct more state-of-the-art environmental protection. Both entities have prepared draft environment laws, but they have not been approved because of insufficient national and European harmonisation. Since 1998 there has been an environmental protection committee for Bosnia and Herzegovina (ESC Bosnia and Herzegovina). It was formed as an inter-entity body for environmental activities and policy.

Forest preservation and management are governmental responsibilities in Bosnia and Herzegovina.

The high degree of contamination of the forests caused by the war is due to intense ecological strains for logging (minefields and shell fragments).

The processing of wood waste, particularly contaminated waste, is insufficiently developed in Bosnia and Herzegovina compared with the leading countries in the forestry and furniture industry.

Furniture production technologies are not yet sufficiently based on appropriate measures for securing environmentally-friendly technologies (e.g. staining and varnishing technologies).

2.2 Wood Industry

Woodworking, which began at the start of the last century, is possibly the sector with the longest industrial tradition in Bosnia and Herzegovina. Currently, approximately 30% of the pre-war capacities are utilised. (/11/).

The structure of the timber industry consists of a few large sawmills with little production depth and partly without any drying capacities. Furthermore, the furniture factories are equipped with a complete vertical infrastructure from sawmill through to the production of the finished furniture. This situation hampers the formation of an appropriate internal market.

The following observations are based on the final production figures. For quantitative data please refer to section 2.8.

The following table shows the critical state of the sector (/10/). A certain degree of recovery is only apparent in the Republika Srpska.

Table 4: Index of the physical volume of production (/10/)

		1997 / 1996	1998 / 1997	1999 / 1998	2000 / 1999
Bosnia and Herzegovina	Wood production	164.4	118.9	108.5	95.6
	Sawn & veneer	-	107.0	83.0	98.4
	Finished wood products	-	123.3	85.5	103.6

2.2.1 Types of Wood

The consumption of industrially used wood (excluding firewood) in the Federation before the war amounted to an estimated 2.5 – 2.7 million m^3 per year. FAO/WB (1996) estimates the volume of sustained supply with industrially used wood from the forests to be 2.8 – 3.0 million m^3. A short-term increase in the production capacities of the forestry sector can only be achieved after mine clearances in the high forest regions.

Various sources mention that the wood resources consist of 42% softwood (of which 85% is spruce) and 58 % hardwood (of which 75% is beech and 25% oak). The effect of the war has been mentioned above.

Standing Wood Volume, Increment and Use (/11/)

The average standing wood volume in forested areas in state-owned forests was estimated to be about 215 m^3/ha in 1990, and in private forests 68m^3/ha. The corresponding figures for the estimated total volume are 359 million m^3 or 27 million m^3, respectively (basis for the private forest figures: 1982). This indicates that private forests, which make up about 30% of the total area, constitute only 7% of the total wood volume. The standing timber stock is graded as good in relation to the general situation in Europe, but too little in relation to the national conditions (FAO/WB, 1996). A standing timber stock of 300-400 m^3/ha is mentioned as a target figure.

The mean annual increment in the state-owned forest in the period from 1989 to 1998 was estimated at 10.5 million m^3 in 1990. The felling volume licensed for this period according to forestry planning was 6.9 million m^3 per year. The statistically recorded wood harvest in the period from 1982 to 1988 amounted to 6.2 million m^3 usable volume, or about 90% of the volume licensed for the subsequent period (these figures may also include firewood).

Estimates indicate that the wood harvest during the war was approximately 20% of the pre-war level (including fire wood). IFC (1997) mentions an annually available volume of usable wood of 2.9 to 3.5 million m^3. The net utilization volume is 2.5 to 3 million m^3 (see section 2.8).

The breakdown into types of wood is as follows, based on empirical values from the Bosnian wood industry:

Table 5: Breakdown into types of wood

Product	Softwood %	Hardwood %
Veneer	1	3
Saw logs	82	46
Pitwood*	10	4
Line poles	1	-
Pulp wood	5	9
Others/ firewood	1	38

The above numbers are based on this study's estimates concerning the forested area after the war and the pre-war state of the forestry enterprises.

2.2.2 Products

Sawmill Products

According to unofficial estimates (e.g. by IFC, 1996 and USAID, 1998), more than 1,500 enterprises work in the sawing business; among them are 250-300 state-owned enterprises. The same source mentions that 18sawmills (of which 17 belong to SIPAD) have an overall capacity of approximately 600,000 m^3. A considerable discrepancy that cannot be explained emerges if we compare this with the data mentioned in FAO/WB (1996), which gives the pre-war number of sawmills as 57. Some of these differences can be explained by the large number of start-ups of private sawmills before and after the war. The estimates of 1,500 (USAID) to 2,000 (Federlegno) sawmills in Bosnia and Herzegovina do however seem to be widely exaggerated. The total number probably does not exceed 250 (the figure given by the business chamber).

Some state-owned sawmills have their own wood harvesting departments, and many of them have their own processing lines (windows, doors, furniture etc.). A large proportion of the wood does not appear on the market but is resold internally. This situation often causes quality problems since internal customers are not free to choose their suppliers. The following table, containing estimated figures on internal transfers, is quoted from USAID (1998).

Table 6: Estimated saw timber sales in 1996 (million EUR) (/20/)

Product	Export	Domestic sales	Internal transfer
Beech, oak	9.2	3.1	63.9
Pine, spruce	3.6	5.1	63.9
Total	12.8	8.2	127.8

In nearly all the state-owned sawmills that were visited by the author, drying chambers were missing or defective. This hinders the production of planed wood, parquet blocks and similar products that require wood with a defined and stable moisture level.

Windows and Doors

In addition to building timber, windows and doors are highly demanded items for reconstruction. Federlegno (1998) indicated that about 20 enterprises were operating in this sector; the current number of enterprises is unknown. The author visited 5 companies that produce windows and doors, but only one of them exclusively produces these products (a private company). The quality of these products was generally quite high, though they did not meet western standards. For some time large quantities of windows have been shipped to Kosovo, where quality control is not so strict. Potential demand is also high in the domestic market, a fact that is demonstrated by the large number of uncompleted buildings in the country. However, sales are limited by the lack of purchasing power of many investors. If producers want to open up foreign markets, they have to take measures in the area of quality improvement and management when choosing the wood, and in the drying, processing and finishing stages.

2.2.3 Geographic Distribution

An analysis commissioned in the framework of this study (/10/) established the distribution of sector-related companies in 1999 as mentioned below. As there is no further breakdown (into wood or furniture), this constitutes an overall view. It can be assumed that firms of all sizes are included.

Table 7: Number of companies in communities of the Federation of Bosnia and Herzegovina (/10/)

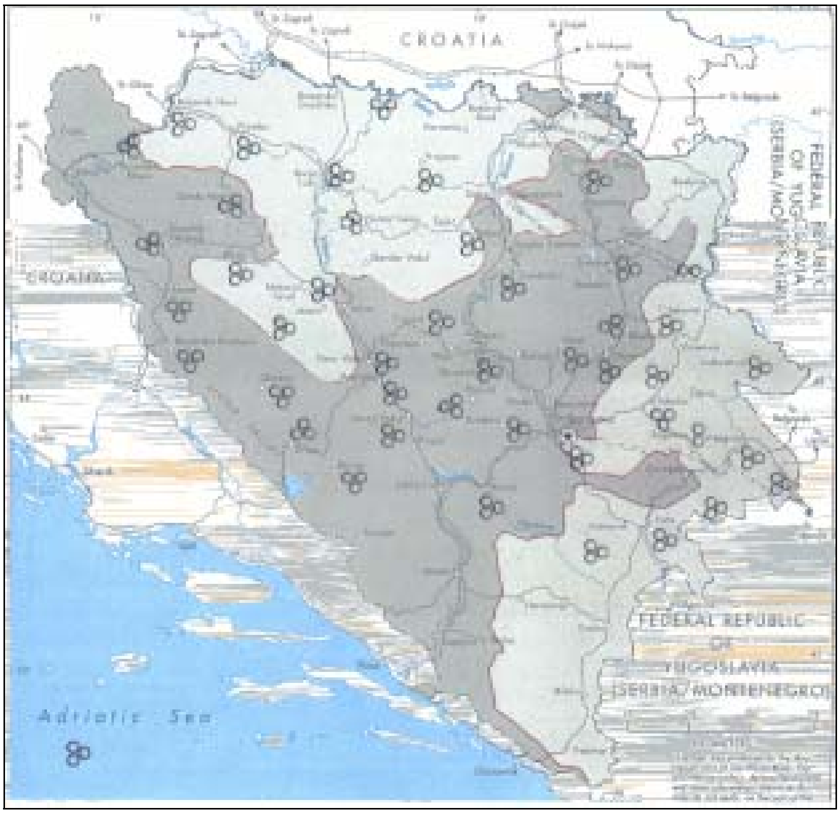
Bos.Grahovo	4	Banovići	5	Mostar	33	Kakanj	14
Busovača	12	Bihać	8	Ođak	13	Ključ	11
Čapljina	3	Bos.Krupa	16	Orašje	24	Kreševo	6
Čitluk	11	Bos.Petrovac	11	Oštra Luka	8	Kupres	5
Doboj	9	Bugojno	22	Posušje	4	Neum	3
Gračanica	20	Bužim	3	Prozor	3	Olovo	16
Gradačac	35	Cazin	26	Sarajevo	156	Posušje	3
Grude	5	D.Vakuf	9	Široki B.	9	Sanski Most	20
Kalesija	8	Domaljevac	14	Tešanj	10	Sapna	3
Kiseljak	5	Drvar	9	Tomislavgrad	14	Srebrenik	20
Kladanj	21	Fojnica	5	Travnik	42	Ugljara	3
Konjic	9	G.Vakuf	12	Tuzla	45	V.kladuša	20
Livno	14	Glamoč	11	Uskoplje	3	Vareš	6
Lukavac	15	Goražde	7	Visoko	5	Vitez	30
Ljubuški	8	Jablanica	4	Zenica	22	Zavidovići	10
Matići	4	Jajce	14	Živinice	20	Žepče	9

Table 8: Number of companies in communities of the RS (/10/)

Zvornik	17	Petrovac	23	HanPijesak	15	Srbinje	14
Vlasenica	8	Pale	56	Gradiška	34	Srbac	13
Višegrad	17	Novi Grad	16	Doboj	27	Sobolac	32
Ugljevik	3	Mrkonjić Grad	21	Derventa	15	Rudo	4
Trnovo	3	Modrića	11	Bratunac	7	Rogatica	16
Trebinje	7	Miliji	21	Brčko	37	Ribnik	13
Teslić	26	Ljubinje	3	Bijaljina	31	Prnjavor	17
Orašje		Šipovo	35	Banja Luka	84	Prijedor	30
S.Sarajevo	16	Laktaši	31	Čelinac	17	Petrovo	26
Stari grad	6	Kupres	5	Čajniče	9	Kneževo	17
Sanski Most	4	Kožarska dubica	13	Šamac	15	Srebrenica	3
Drvar	8	Kotor varoš	21	Brod	4	Ilića	18

The map below, which does not distinguish between the wood and the furniture industry, shows that this sector is nearly evenly distributed over the country, with Sarajevo, Tuzla, Travnik, Gradacac and Vitez the centres of this industry in the Federation, and Banja Luka, Sipowo, Laktasi and Prijedor the Republika Srpska's centres. There are no clear potential clusters.

Diagram 1: Geographic distribution of wood industry capacities in Bosnia and Herzegovina (/10/)



As is apparent from the overview on the property structures below, an important private sector exists in the two entities. Here, however, the criteria used to define “private“ are not clear; it seems to also include those enterprises that were privatised by giving them to groups of owners recruited from the same enterprise’s employees.

The following table contains all companies in the sector, including a large number of private craftsman’s shops and small sawmill businesses. Thus this list does not allow any conclusions concerning the economic importance of the various property structures for this industry to be drawn.

Table 9: List of firms and their property structures in Bosnia and Herzegovina (as of 31.12.2000; /10/)

	BaH	%	RS	%	FBaH	%
Total number of firms	1966	100	886	45	1080	56
Private	1814	92.3	800	90.3	1014	93.9
State-owned	28	1.4	12	1.4	16	1.5
Mixed property	45	2.3	9	1.0	36	3.3
Cooperative firm	7	0.4	7	0.8	-	-
Social	72	3.6	58	6.5	14	1.3

In the course of an IBD identifying mission by the GTZ, 39 companies were visited in the wood and furniture sector (some of them mixed) for which more precise data exists. Up to 20% of these companies can be considered totally private. In all the other firms the government still held shares, usually more than 50%. The privatised shares in these companies were mostly held by their employees and executives.

2.2.4 Current Markets

As stated by Federlegno (1998), before the war 80% of the total sawmill production (1.5 million m^3) was sold domestically (in the former Yugoslavia), and 20% in EU countries (particularly Italy).

Current markets, in addition to the domestic market, include Croatia, Slovenia, Italy, Austria and Germany. Former foreign trade companies also have contacts with the Arab world, with some known exports to Egypt. Quantitative figures are not however sufficiently reliable in this respect.

2.2.5 Technological Situation

Most of the large companies visited were set up between 1970 and 1980. Ever since there has been no considerable investment (despite the above mentioned credit programmes). Hence the level of technology and organisation of these plants is in general that of western Europe 10-20 years ago. They are designed for mass production. Nowadays, however, markets require flexibility and customer-friendly management in marketing and production. In order to achieve international competitiveness, most of the inspected firms urgently need to completely re-equip with new machinery.

In smaller private sawmill companies (which were set up after the war), mainly modern Italian and Slovenian equipment is installed. These companies are internationally competitive as well, provided that they are able to secure permanent and good quality supply.

None of the visited companies is able at present to process modern materials in accordance with western standards. Quite often they do not even know how to utilise modern materials. It can therefore be expected that these companies will be unable in the short term to enter high-value market segments internationally.

The strong points and experience of these companies are in plywood processing. These advantages must be strengthened further and raised to a higher quality level.

Because these companies were designed for mass production, it is virtually impossible to organise by-order production with competitive productivity. Consequently, it will be necessary to organise joint marketing activities to make these companies interesting to sufficiently large international customers. Potential cost advantages compensating for lower productivity cannot be utilised at present for political reasons (see also section 2.1).

2.2.6 Operating Ratios and Management Know-How

The wood industry of Bosnia and Herzegovina may be confronted with problems in raw material resources. Its growing stock of about 260 m³/ha in the high forest is generally considered to be too low. Local experts therefore suggest a target figure of 300 to 400 m³/ha. They refer to comparable values of 450 m³/ha (in the middle of the 20th century) or even 600 m³/ha (at the end of the 19th century). At the same time, however, wasteful use of this raw material can also be observed (see also section 2.9).

Currently real market prices for raw wood do not exist. The prices of saw logs vary on a stable basis between 35 EUR and 60 EUR per m³ which in certain cases equals 50% of the price in Germany, but is comparable with prices in the neighbouring countries. The saw timber prices are 128 EUR to 179 EUR per m³, which is comparable to German market levels.

The capacity utilisation in state-owned sawmills is estimated to be 25%, and 60% in private plants. The sawing rates (sawing costs) of the sawmills vary between 7.7 EUR and EUR 18.4 EUR per m^3, i.e. about 50% of the German figures, with the state-owned companies at the upper end of this scale (USAID, 1998). This means that productivity in the state-owned companies, with their typically high personnel expenses because of excess staff, is clearly lower than in private companies. At the same time, however, disproportionately high profit margins can be achieved, a fact that explains the attractiveness of this sector for illegal activities.

Analysing the operating ratios is problematic. The data recorded in the processing enterprises are usually unreliable because of the absence of an unambiguous attribution of costs to the sawing section due to the high volume of production. In specialised sawmills the turnover (as officially stated by the companies) is around EUR 15,000 to 20,000 per employee, per year (whereas in Germany it is EUR 180,000). The cost structures of the companies are similar to international standards.

Table 10 profiles the strong and weak points of the sawmill sector:

Table 10: Profile of strong and weak points of the sawmill sector (/11/)

Strong points	Weak points
• Good raw material basis, especially in the hardwood sector • Numerous start-ups of private sawmills (flexible, motivated) • Relatively low wage levels • Well-trained personnel • Geographic vicinity to the European markets • Knowledge of the quality standards in the export markets	• Low productivity • Obsolete or badly maintained equipment • Lack of debarking machines, operable drying chambers and modern tools • Lack of further processing capacities • Lack of operative capital • Practically non-existent marketing strategies • Practically non-existent contacts to customers

	• Poorly developed cost and performance accounting • Somewhat low product quality • Limited utilisation of by-products or low-value product ranges

2.3 Accessories, Materials, Services

2.3.1 Wooden Materials

Several sources mention that 15 plants produce veneer and plywood, and 8 plants make wooden chipboards and fibreboards.

IFC (1997) reports in detail about the pre- and post-war production capacities. According to this source, today's technical production capacity is as follows (pre-war state = 100%):

- Wood chipboard 100%
- MDF 100%
- Veneer & plywood 40%

However, current actual production uses only 15-20% of the technical capacity available. As stated by Federlegno (1998), the following wood materials are produced in Bosnia and Herzegovina:

- Veneer, knifed and debarked (38,000 m^3)
- Plywood (18,000 m^3)
- Piled wood/special purpose pieces (14,000 m^3)
- Wooden chipboard (85,000 m^3)

The plants for hard fibre boards and MDF have either been destroyed (hard fibre) or are inoperable without considerable further investment (MDF - Mediapan company).

One of the objectives of local policy is the revitalisation of the board manufacturing industry. Bosnia and Herzegovina contains 3 board plants which are intended to be revitalised in terms of their technical equipment and business activities, so that imports can be substituted, thus relatively reducing raw material prices.

Nevertheless, the wood materials industry seems unable to develop because of the size of the market and the existing capacities in nearby countries (Hungary, Austria, Bulgaria, and Slovenia and Croatia in the future) (see also chapter 4, section 4.2).

2.3.2 Fittings, Glues, Paints

Supply materials for the wood and furniture industry are mainly imported. The countries of origin of these assorted products (fittings, glues, paints) are Bosnia and Herzegovina's neighbours (primarily Slovenia), as well as countries further away (such as Austria, Hungary, Italy and Germany).

Most supply materials are purchased from branches located in neighbouring countries (Slovenia, Croatia), which employ sales representatives or agents for the Bosnian markets.

Reliable quantitative data are not available, and the information given by the interviewed companies is not always clear. Due to the lack of current capital, a considerable portion of business, especially of companies involved in exporting, seems to be done by barter contracts (i.e. the exchange of goods, instead of transaction by payment) or by financial advance on goods (materials) with clearing by the final product.

In purchasing materials, primary attention is given to price and availability. Quality aspects cannot play any role because of limited comparability. It is notable that in the companies and the training institutions there know-how about the materials and processing technologies that are available on the European market is only limited or insufficient.

2.3.3 Specialised Service Providers

Transportation
The following tables show the total transport volume and the transport routes in Bosnia and Herzegovina:

Table 11: Transport volume

Portions of the entities in the transport volume in	**1998**		**1999**		**2000**	
	FB&H	**RS**	**FB&H**	**RS**	**FB&H**	**RS**
Transport of goods						
Transport tons	90.5	9.5	85.4	14.6	82	18
Ton kilometres	84.8	15.2	78.6	21.4	49.4	50.6

Share in railway transport, in %	1998		1999		2000	
	FB&H	RS	FB&H	RS	FB&H	RS
Transport of goods						
Transport tons	70.4	29.6	73.5	26.5	82.3	17.7
Ton kilometres	69.9	30.1	68.6	31.4	73.4	26.6

Source: The above data are quoted from the monthly statistical records of the Statistics Office.

Essential transportation is done by road, with the Federation in particular acting as a transit crossroad. Gradually the Federation and the Republika Srpska are achieving a comparable share of transportation. Railway network repairs and the building of new bridges are supporting the revitalisation of railway transport, particularly in the Federation.

The forestry firms have their own road grid. Experts suggest, however, that the density of this grid is just 15% of the comparable level of central European countries with a comparable geographic structure. This considerably hampers forestry management. One further factor (which has already been mentioned and will not be discussed in detail here) is the limited accessibility of the forests due to mines.

Table 12: Portion of forest roads in the entire road grid , except highways (as of 1991, in km)

	Total	Forest roads	Public roads
Total	13,162	7,189	5,973
Asphalt roads	2,825	91	2,734
Paved roads	9,641	6,438	3,203
Forest roads	696	660	36

In 1990 the forestry companies used 705 trucks and 1,026 tractors. In western European countries, however, forestry companies use approximately 7 to 8 times the number of vehicles.

More current data on the capacities and on specialised providers of transport facilities are not available.

Planning and Design Office for the Wood Industry (Sumaproject)
The former central planning and design office of the state-owned wood industry (SIPAD) has prepared and monitored all important investments in this industry in the territory of what is today Bosnia and Herzegovina.

This firm continues to exist with a considerably reduced staff of approximately 50 employees, and is increasingly trying to assume responsibility for representing western offerers. Before the war this firm employed about 110 people. There is now, however, only a limited demand for classical planning and design services.

Machine Trade
The machine trade for the woodworking and furniture industry is mainly concentrated in western agencies in Croatia and Slovenia. Domestic machine trade has hardly been developed in Bosnia and Herzegovina, especially because of the relatively small consumer market. The development of such capacities would be useful were it possible to develop Bosnia and Herzegovina into a marketplace of machine trade in southeast Europe; this option, however, seems to be hardly realistic.

2.4 Furniture Industry

Bosnia and Herzegovina have considerable stocks of hardwood. Consequently, an important element of their furniture ranges are chairs and tables (see also section 2.9), which are mainly made out of solid wood and plywood. These constitute classic export ranges which have, however, become obsolete in terms of design.

For the domestic market, 80% of the corpus furniture is made out of wooden chipboards. Solid wood furniture is rather an exception, and raw materials need in this respect to be changed.

In addition, companies like Krivaja or Konjuh are more active in the lower price category or in special limited markets (Konjuh – office furniture), which makes their sustained existence rather doubtful if their current profile remains unchanged.

The situation of the furniture industry has to be considered as critical with respect to the development of its turnover. Table 13 below illustrates this development, demonstrating that the growth in annual production volume has been decreasing since 1998. In addition, the war-related demand for equipment was obviously met. Since 1999, no considerable increase in production has been achieved. After adjusting the data in Table 13 for inflation (roughly 5%), between 1999 and 2000 the production volume clearly dropped.

Table 13: Index of production volume (/10/)

		1997/1996	1998/1997	1999/1998	2000/1999
	Furniture production	142.3	95.6	106.0	100.6

Interior Work
Several enterprises are active in the field of interior work. A large producer, SIPAD Enterijer in Sarajevo, worked internationally in hotel interior work before the war, and is now hoping to get orders in connection with the reconstruction of numerous hotels in Bosnia (primarily winter sports). The interior fixture work in hotels also gives smaller joiner's shops and other domestic businesses in Bosnia, probably in co-operation with foreign customers, market chances.

2.4.1 Types of Furniture and Products

In general, all types of furniture should be produced. Nevertheless, only dining room furniture, including chairs and tables, and probably bedroom furniture stands a chance on international markets. The living room (shelf units) and kitchen furniture currently produced is unfashionable and of poor quality. Upholstered furniture is not very competitive even on local markets, as far as design and quality are concerned. Essential problems are caused by product design, the materials used, and too narrow product ranges.

Considerable deficits in terms of design and coating materials exist for chipboard furniture, deficits which can only be overcome on a medium-term basis. In this respect, co-operation with international component providers (e.g. kitchen furniture fronts) would be useful in order to considerably widen the offered range.

All in all it has to be established that the furniture industry at present fails to be internationally competitive. Nevertheless, there are various chances to enter international markets again in the future.

2.4.2 Geographic Distribution

The geographic distribution is as shown in section 2.2.3.

2.4.3 Companies

The important companies which continue to dominate this sector today as in the past are the SIPAD and KRIVAJA holdings (see also section 2.1). In the course of the privatisation process, the SIPAD complex is expected to be dissolved (this has partly been done already). The management of the resulting smaller furniture trading company could then develop a national and international strategy. In view of the current situation, KRIVAJA will probably develop into a woodworking group with a strongly diversified product portfolio. An essential precondition for further development will be the raising of the operating capital required for this purpose.

In the RS the VRBAS company is developing as an independent large-scale concern, similar to KRIVAJA but more focused on furniture production. This company is also encountering the problem of capital resources, particularly in the area of investment.

2.4.4 Current Markets

Furniture is the traditional number one product in the wood export business of Bosnia and Herzegovina (USAID, 1998), albeit in the lower price segment. The state-owned holdings have or had export offices in all important target countries, including the USA.

Bosnia and Herzegovina is a geographical interface between western and eastern markets, and thus has a broad export potential (as already recognised). Some firms have already re-established past contacts and now deliver, for instance, furniture (kitchen furniture, chairs, tables) to Russia and Bulgaria.

All the bigger furniture producers are state-owned companies and belong either to the SIPAD group or to KRIVAJA. Private firms are quite rare; one example is the HAZNADAREVIC company in Sarajevo (USAID, 1998) which manufactures hand-carved upholstered furniture that is shipped to Austria, Germany and Turkey.

2.4.5 The State of Technical Equipment

The majority of furniture producers are large concerns that were technically equipped between 1970 and 1980. Ever since there has been little substantial investment (despite the above mentioned credit programmes). The technology and organisation of these plants is generally 10-20 years out of date. Their most obvious disadvantages in comparison with their competitors are related to the materials used and the generally insufficient surface quality of the finished products. Manufacturing is designed for mass production, whereas today's markets require flexibility. In order to become internationally competitive, most of the organisations visited need to be completely retooled and organised on an order-by-order basis. The investments of the past years have been used mainly for repairs, resulting in many creative stop-gap solutions which are, unfortunately, insufficient for future development.

2.4.6 Operating Ratios and Management Know-How

The cost structures of the companies are only slightly different from the western European average, and can easily be adjusted to meet these norms. Their operating ratios are roughly as follows:

Expenses	Companies %	Average %
Material expenses	52	48-50
Personnel expenses	20	25
Overheads	25	23

However, the spending for advertising and marketing purposes is in particular much too low. Sufficiently developed and equipped distribution structures do not exist. While the Bosnian companies analysed spend approximately 1% of their expenditures on advertising, this proportion in western Europe is 8 – 10%.

Companies in Bosnia and Herzegovina have an annual turnover per employee ranging from 9,000 EUR to 32,000 EUR (in comparison: Germany = 131,000 EUR, Spain = 51,000 EUR, Ukraine = 20,000 EUR, Russia = 24,000 EUR). Personnel expenses, according to data given by the companies, were 1,800 EUR and 3,000 EUR per annum (in comparison with Germany, at around 24,000 EUR and Ukraine at only 750 EUR). Hence personnel expenses per turnover unit in Bosnia and Herzegovina are approximately half the figure in Germany, but still three times higher than those in the Ukraine.

Consequently, the various types of furniture produced for the lower price bracket of the international markets as far as design, quality and materials are concerned cannot be offered at a competitive price.

The management of these companies is usually technically well-trained; their skills in business administration comply with pre-war regulations. However, considerable deficits in product development, marketing and distribution remain. Investment in these areas is currently insufficient, and retraining programmes or exchange of personnel are measures intended to change this situation.

The following table profiles the sector's strong and weak points:

Table 14: Profile of strong and weak points of the furniture sector (/11/)

Strong points	Weak points
• Good raw material basis, especially in the field of hardwood • Experienced personnel • Relatively low level of wages	• No individual designs • No individual product development • Nearly no marketing know-how • No individual customer contacts • High prices • Low productivity • Low usage of machine capacity • Lack of operating capital

2.5 The Paper Industry and Other Products that are Made of Wood as a Raw Material

Before the war there were 3 big paper mills. Two of them are situated in what is now the Republika Srpska, and currently only 10% of their capacity is in use, i.e. they are virtually standing still. One factory is in central Bosnia; it is operating at about 20% capacity, and it mainly produces cardboard and packing paper.

The utilisation of waste products is focused nowadays on the burning of sawdust. Due to its high moisture content, the achieved calorific value is low. Nevertheless, economically useful applications, such as the heating of drying chambers, may be developed. In Bosnia and Herzegovina a clear strategy in this respect is missing.

2.6. Product or Input-Output Ratio

The basis of this analysis is the annually available timber stock in various categories.

Table 15: Timber stock p. a. (/11/)

Product	Softwood	Hardwood
	m^3 usable wood volume per year (net)	
Veneer	10,600-12,800	42,000-50,800
Saw logs	867,000-1,048,000	645,000-780,000
Mine timber	105,000-127,800	56,000-67,500
Line posts	10,600-12,800	-
Pulpwood	52,700-63,800	126,000-152,000
Others/ firewood	10,600-12,800	533,000-644,000
Total	1,057,000-1,278,000	1,402,000-1,695,000

Both softwood and hardwood can be offered as sawing products. For further processing and the furniture industry, a considerable stock of hardwood is available as raw material for the production of high-value furniture. The high portion of hardwood used as firewood represents a clear development potential, without any need to increase the volume of trees felled. If other energy resources are used instead, the existing stock will suffice for sustained and long-term development.

The following two Tables (16 and 17) show the approximate development in the wood production of the two entities in terms of volume:

Table 16: Wood production in the Federation (/12/)

Federation of Bosnia and Herzegovina	Unit	1996	1997	1998	1999	2000
Woodworking & production						
Sawn softwood	m^3	77,740	134,691	152,084	184,121	274,116
Sawn oakwood	m^3	2,118	933	1,929	1,162	796
Sawn beechwood	m^3	66,219	84,055	89,797	108,810	125,780
Other sawn wood	m^3	1,749	4,518	7,879	10,927	11,636
Veneer	m^3	590	3,012	11,780	9,792	14,135
Plywood	Tm^3	-	905	879	644	687
Wooden packing materials	m^3	332	878	1,318	202	586
Carpenter's work	Piece	41,640	25,728	71,806	87,893	90,565
Parquet wood	m^2	122,339	143,924	183,858	172,140	128,182
Parquet wood, laminated	m^2	21,870	38,933	29,678	28,288	26,046

The main trend in wood production in the Federation is sawing, where 200 - 400% growth is recorded, while further processing of wood (e.g. parquet) has grown at a maximum rate of 20%.

Table 17: Wood production in the RS (/12/)

Republika Srpska	Unit	1996	1997	1998	1999	2000
Woodworking & production						
Sawn softwood	m^3	124,063	126,218	112,514		
Sawn oakwood	m^3	7,812	3,948	5,786		
Sawn beechwood	m^3	41,405	73,861	100,783		
Other sawn wood	m^3	2,953	4,520	5,964		
Veneer	m^3	10,613	15,891	13,989	10,040	11,767
Plywood	m^2	55,000	75,000	89,000	74,000	28,000
Parquet wood	m^3	335,907	370,345	382,651	398,893	357,855

Developments in the Republika Srpska are similar to those in the Federation, with considerable growth rates in the area of hardwood sawing. Capacities seem to be equivalent to those of the Federation. In the more processed categories, capacities are in fact considerably larger than those in the Federation, but the achieved growth rates are clearly lower.

In terms of furniture production, the following data were published for the two entities (/12/):

Table 18: Furniture production in Bosnia and Herzegovina

Federation of Bosnia and Herzegovina	Unit	1996	1997	1998	1999	2000
Type of furniture						
Household furniture	pcs.	12,968	21,659	57,071	82,096	67,532
Kitchen furniture	pcs.	11,999	22,977	17,687	71,912	96,892
Chairs	pcs.	413,272	633,509	425,672	396,083	222,093
Armchairs, sofas	pcs.	2,919	6,403	5,105	3,454	11,398

At the end of the war, capacities rose considerably again; however, especially in the export-relevant chair segment, this trend has alarmingly reversed since 1997. This is the result of out-of-date product ranges, insufficient quality and flexibility, and too high prices. In this respect productivity has to be considerably increased in the future at short notice.

Table 19: Furniture Production in the Republika Srpska

Serb Republic	Unit	1996	1997	1998	1999	2000
Type of furniture					no data	no data
Armchairs	pcs.	68,287	96,489	103,125		
Tables	pcs.	14,548	25,879	32,013		
Chairs	pcs.	33,595	51,227	27,807		

Although data on the Republika Srpska are available only on a limited basis, they nevertheless indicate growth in armchair and table production, where capacities seem to be higher than in the Federation.

The above data demonstrate that the entities have different focal points for development. This provides good conditions for both a mutual exchange of goods and joint activities in foreign markets.

2.7 Meso Level

Training Facilities and Courses Offered

In the past it was unusual for enterprises in the industry to run vocational schools or training centres. The old, still applicable industrial code does not provide any practical vocational training for crafts persons; this was done only theoretically and in schools.

Without the respective trade chambers there is no basis for defining the standards of governmentally-certified vocational training certificates in this sector. Only now is such a system intended to be gradually introduced with international assistance and in accordance with the German model.

Complete engineer and science courses were and still are offered by the University of Sarajevo. The training there is on a very high training and research level, closely linked to practical work and of an internationally compatible standard. This university has, for example, the most efficient analysis and testing facilities of this sector throughout Bosnia and Herzegovina. The offered courses are comparable to those of western European academic facilities, although levels must be raised in the future in the fields of design and CAD/CAM. Eco-certification has no practice-related importance so far.

Sumaproject (see also section 2.5) is closely co-operating with the Department of Mechanical Woodworking at the Engineering Faculty of the University of Sarajevo. Sumaproject staff members are teaching there, and in turn use the laboratories and workshops. This closely links training to practical work.

Since the emergence of the RS, there have been attempts to build up a competing institution based on the University (or more accurately, ‘technical college’) of Banja Luka. However, the conditions there are not suitable, and the Government of Bosnia and Herzegovina has sought to block all such attempts. An alternative solution for this location would rather be modelled on a technical college similar to that in Rosenheim, in Bavaria.

2.8 Trade Systems

In Bosnia and Herzegovina there are three basic distribution channels:

a) Export
   The available data indicate that one third of all Bosnia and Herzegovina’s exports in the first half of 1999 were made by the wood industry. However, there is a structural problem, since most of these exports were sawing products.
b) Domestic wholesale
c) Direct sales through companies’ own sales facilities.

It was not possible to obtain statistical data broken down to each of the latter two channels of distribution; they are only available for the domestic market as a whole.

Experience gained in consulting work in situ and in other transformation countries suggests that direct distribution will dominate in the short or medium term, and therefore has to be built up by the companies themselves. In addition, the existing retailers should be addressed through direct sales contracts.

An efficient wholesale system can only be created in the long run. This role could be performed by “SIPAD export-import“, particularly in the export business – assuming it is successfully restructured, as at present efficient structures to accomplish this task do not yet exist.

In order to enter export markets, it is necessary to develop appropriate business co-operations which may be built up by the respective associations. This, however, is no substitute for the efforts of the companies themselves in this respect, which are still necessary.

3. Sales Possibilities

3.1 Local Markets

Because of its volume, the domestic market of Bosnia and Herzegovina can be considered a rather small market. The existing capacities, if completely utilised, exceed the market's consumption capacity.

The **domestic market**, and therefore the demand, are relatively undeveloped for the following reasons:

a) The low volume of the domestic market

- The total population is too small to generate a sustained domestic demand
- The exodus of (especially young) people continues
- Because of the high number of war refugees abroad, a high degree of supply with furniture has been reached in connection with their return, since they bring their furniture with them

b) Low purchasing power and demand

- The high unemployment rate does not suggest that demand for new furniture is likely to rise in the near future. The daily struggle to survive is a greater priority
- The international policy of repatriating displaced people back to their original regions does not encourage them to feel confident about their current situation

c) Obsolete and low-quality product lines

- Lack of trust in domestic industries is an obstacle
- Domestic products are usually sold because they are affordable, and thus have got the sustained image of “cheap goods“
- The design of domestic products is totally unfashionable. The consumers know the alternatives because they have been abroad many times

d) No products are available nationwide

- Wholesale networks are virtually non-existent. Because of delayed privatisation, producers are neither able nor are actively seeking to set up developed self-marketing systems

In addition, the structure of the separate entities, with their different laws, and tax and customs regulations, has so far divided this market into competing economic areas. Only recently have the governmental authorities started harmonisation activities and begun to create a unified economic area.

Effective protection of local producers is not guaranteed, which is apparent from the fact that many types of goods which could be made with better quality and at a lower price domestically are imported instead. This is particularly evident in the furniture sector, where cheap used furniture is imported by returning citizens instead of being locally purchased.

At the same time, the export of less processed semi-products is still not discouraged. Only the Republika Srpska tries to hamper the export of roundwood by additional charges.

The GNP per capita was 1,187 EUR per annum in 1997, Assuming the proportion of expenditure on furniture to be 2% (in accordance with the European standards quoted in /8/), in 1997 the domestic furniture market can be supposed to have had an annual volume of around 77 million EUR. This volume is equal to the turnover of five medium-size furniture factories in Germany with an average staff of 113 employees.

3.2 Regional Markets

The **regional markets** include the countries of former Yugoslavia. In spite of the outstanding geopolitical location of Bosnia and Herzegovina, standing at the crossroads of the pan-European north-south and east-west transit lines, the country has been unable so far to generate serious output potentials from this situation. This role has instead been increasingly assumed by Croatia and Slovenia.

Entry into the surrounding markets can only be managed with intensive government support (see the example of Kosovo, supplies in the framework of reconstruction aid given by the international community). Table 20 shows the increasing strength of the surrounding economies. All of them have reported considerable growth rates in their exports to Bosnia and Herzegovina.

Table 20: Imports to Bosnia and Herzegovina (in thousand EUR)

Country of origin	1999	2000
Import in total	3,092,248	3,907,297
of which Croatia	521,595	805,881
Slovenia	385,094	553,846
Serbia	196,38	221,168

Customs regulations are subject to permanent modification. Usually the visited companies were not sufficiently aware of the concrete conditions.

Furthermore, the neighbouring economies in the EU region are also supplied. Several Bosnian furniture factories advertise exports to Croatia, Slovenia, Slovakia, Hungary etc. The data mentioned in paragraph 3 suggest that these exports also include products which are re-exported to third countries. It should be expected that this trend will considerably grow in volume in the future.

3.3 The EU

The available export data for Bosnia and Herzegovina are contained in Table 21, and interpreted below.

Table 21: The sector's exports from Bosnia and Herzegovina (in million EUR) (/12/)

Year	1998	1999	2000
F BaH	62	104	157
Woodworking	48	86	
Furniture production	14	17	

Note: The data from the Statistics Office of the RS do not contain information on the wood industry's share of exports.

The existing export channels show considerable growth rates. Table 22 contains the data for exports destined for the EU:

Table 22: Export from Bosnia and Herzegovina to EU countries (in million EUR) (/12/)

Country	1999	2000
Italy	138	245
Germany	74	82
Austria	32	47
Hungary	4	4
Others	178	293

Exports to the EU are mainly the result of the reopening of earlier distribution channels (e.g. Konjuh to France and the UK). New export customers can be found particularly in Austria and Italy, whose industries have considerably developed over the past ten years. Recently, contacts with Scandinavian customers have been established as well; they need new sources for hardwood and hardwood furniture due to the waning European ”pine euphoria“ in the furniture sector.

The existing export channels obviously serve primarily as sub-suppliers. Latest data from the Association of the German Furniture Industry contain the following figures in million EUR:

Furniture import from	1998	1999
Bosnia and Herzegovina	1.6	1.8

Croatia	22.6	21.8
Slovenia	256.6	306.4

Furniture import from	**1998**	**1999**
Hungary	124.5	153.2
Italy	1.653.5	1,555.9
Austria	430.6	494.4
Furniture import from	**1998**	**1999**
Denmark	619,0	578.2
Sweden	189.4	174.4

This becomes even more apparent with the data concerning types of furniture that are directly export-relevant for Bosnia and Herzegovina. In 1998 Germany imported sitting furniture worth 374 million EUR from Italy and 213 million EUR from Slovenia; out of this wooden sitting furniture (upholstered) had a share of 27.6% (around 721 million EUR), wooden parts of sitting furniture had a share of 1.6% (around 42 million EUR), of which 22% came from Italy. In this respect there was a growth rate of 10% from 1996 to 1997.

Irrespective of classic export goods to the EU, such as sawn timber and furniture, some export potentials for new products have not been opened up yet. For example, untreated wooddust* could be pressed into bio-briquettes per annum and up to 50,000 t exported (/10/). By doing this, profits of approximately 7.7 million EUR could be made in Germany alone.

3.4 Other Markets

Various sources repeatedly mention Bulgaria, Romania, Russia, the Arab countries, the USA, the UK, and France as potential future further markets. Unfortunately it proved impossible to collect data on this, since no information had been recorded centrally. During the discussions held in situ, it appeared that these markets are considered to be of minor importance or unimportant. This attitude can be traced back first of all to the absence of direct contacts. First activities in this respect, assisted by the GTZ, towards Russia prove (e.g. for the KONJUH company) that these contacts urgently need to be revitalised against the background of currently achievable quality standards.

Considering their traditional export markets, SIPAD and KRIVAJA could reasonably target the above mentioned markets.

3.5 Competitors and Benchmarking

3.5.1 The Most Important Competitors

Slovenia, Bulgaria and Romania are Bosnia and Herzegovina's main competitors in this sector. Further competitors are Serbia and partly Croatia, as well as the Ukraine.

All these countries offer products made out of identical raw materials, in similar product ranges and designs, but at lower prices due to higher productivity. Quality is comparable. It should be assumed that these countries between them have taken over the pre-war market share of Bosnia and Herzegovina.

3.5.2 Hungary

Hungary plays some role as a competitor in exports to the EU. Supposedly it has taken over market share from former Yugoslavia: attempts should therefore be made to reopen channels as a co-operation partner or sub-supplier (see also section 3.3)

3.5.3 Bulgaria

The structures in Bulgaria are similar to those in Bosnia and Herzegovina, with large companies predominating as a rule. The purchasing power of the Bulgarian domestic market is low. Over the past few years, Bulgaria has been making itself known as a supplier of cheap components. Furniture export to Germany has a volume of around 2.5 million EUR, which is twice that of Bosnia and Herzegovina. Bulgaria should be regarded as a future competitor.

3.5.4 Romania

What has been said about Bulgaria (section 3.5.3 above) applies to Romania as well. Exports to Germany are valued at around 4 million EUR per annum. Romania has the advantage of having a German-speaking minority, with several German-Romanian joint ventures, co-operations or German subsidiary companies, established in this country which are attractive primarily due to cost advantages.

3.5.5. Benchmarking

Benchmarking has not been applied in the companies that have been analysed so far; there has been no comparison with other companies of the same or another industry. The experience gained by the author shows that the foreign competitors of the companies in this industry are much more active on the market. This is a consequence of completed privatisation processes there.

Since these businesses work more consistently on the basis of the principles of market economy, excess personnel were laid off and operations reduced to the really needed areas. Resource shortages have required specialisation, but there has been consistent and gradual investment in such specialisation. Consequently, marketable products are offered at marketable prices.

A few case examples of private or privatised companies in Bosnia and Herzegovina already demonstrate that a similar development is either necessary here or is already ongoing. As a rule it is possible to reach a competitive level only if enterprises are released from all obligations (job creation programmes, energy supply etc.) that are quasi-governmental tasks or activities unfamiliar to this industry.

Currently no “Best Practices“ are identified, adjusted to their own needs and applied in the companies. In future it will be necessary to establish benchmarking as a permanent process in each company in order to achieve long term improvements in all sectors and to be successful in competition.

3.6 Sales Possibilities and Future Prospects

3.6.1 Summary

Despite its strategic importance, six years after the war the wood and furniture industry in Bosnia and Herzegovina is in a technically and organisationally problematic situation. The classic markets of the woodworking enterprises, which largely used to be in former Yugoslavia, have collapsed in the course of the political developments in the past years. This particularly applies to the furniture industry, which typically finds entering new markets difficult.

The application of “classic“ consultancy and assistance concepts by national and international institutions has not led to demonstrable improvements in the situation of the industry so far. Despite the existence of relatively good economic and legal framework conditions and a fashionable high quality raw material, this industry remains relatively unattractive to foreign investors. Raw material stock is limited, development prospects are unclear, and the local markets are too small with too little purchasing power.

Most of the sawing and planing industry has little production depth, and in many cases the raw material is exported as unprocessed sawtimber. On the other hand, nearly all furniture producers have a deep production profile: from sawmill products or untreated wooden chipboards through to final items of furniture. This situation virtually prevents the emergence of local co-operation or supply structures. In addition to obsolete equipment which is still widely used, the sluggish privatisation process is obstructing companies’ access to desperately needed investment and current capital. On the other hand, there are a number of private small and medium-sized start-ups in both the Federation and the Republika Srpska, although many of these companies lack the required know-how, which necessarily limits growth.

In the furniture industry, the market is dominated by out-of-fashion models, which can be sold cheaply. There is scarcely any specialisation. The market is insufficiently diversified into industry branches. Currently the furniture industry is uncompetitive, despite the relatively low level of wages. To change this situation it is necessary to make intensive modernising efforts. This is the only way to increase turnover and to create secure jobs (which should not be confused with the current redundancy of employees in state-owned enterprises).

At present there is no information about any restrictions on the production as well as the trade and export of wood industry products. Only the export of roundwood is restricted. Sawtimber, plane-ware and furniture components can be traded and exported without restrictions.

USAID (1998) estimates quote an average annual growth of turnover and production in the wood sector (1997 to 1999) of approximately 15%. During the same period, the utilisation of capacities is said to have risen from 31% to 43%. In comparison with the metal, textiles, building and food sectors, the growth figures of the wood sector are in the bottom third of the scale. On the other hand, and under the precondition of sustainable forest management, the wood sector provides long-term growth prospects if this industry can regain its earlier export power and is able to supply the domestic market with appropriate products. Domestic furniture sales are heavily dependent on the available income and capability of enterprises to compete with imported furniture in terms of pricing and design.

The following market strategy should be applied:

Regaining lost market position

for
- beechwood furniture
- parquet
- moulding and batten product ranges
- small furniture
- sitting furniture and tables
- orientation to manual work on the basis of job contracts

Entry into new market segments

for
- furniture components
- small furniture
- supplies based on the raw material
- furniture ranges, using solid wood as the raw material

3.6.2 Sub-sectors

During the war, many of Bosnia and Herzegovina’s markets in the West were permanently taken over by other suppliers and . Because of the large demand for structural timber and the growing beechwood export market in central Europe, the sawtimber and plane-ware sector recovered considerably faster than the furniture industry. Nevertheless, there are still numerous quality problems, especially in the drying of wood. Thanks to short transport distances, Italy is the only country that accepts undried wood. The supply of dimensioned and assorted goods is also very important in obtaining higher wood prices.

In the future the intensified utilisation of sawmill waste wood and small-sized roundwood should be encouraged. Due to the expected shortage of beechwood, the industry will have to prepare for lower qualities, other wood species (e.g. oak) and processed products (plane-ware, furniture components). At present the required drying capacities and planning units, as well as suitable sale channels and product design ideas, are often missing.

The sawmill sector will probably be dominated by small and medium-sized companies in some years. The number of sawmills will drop. Measured against the available raw material stock, only 70-100 sawmills should be expected to survive in the long run. Even now the

procurement of raw materials is a central problem for private businesses. In the medium term it will be necessary to govern the sale of wood from state-owned forests under market economy rules, in order to stop the privileges of state-owned enterprises, and to more strictly control the export of roundwood.
Even more radical changes should be expected for the furniture sector. Most of the state-owned companies that dominated in the past will be downsized or totally dissolved in the course of privatisation or thereafter. A scenery of private start-ups has not yet developed as much as it already has in the sawmill sector. This may be due to larger capital demands, more demands for know-how, and unknown sales possibilities. Another major disadvantage the furniture sector currently faces is the absence of a marketable design of its own.

So far specialisation in furniture components and new products, such as wood pellets, is a less developed segment which offers good chances to reliably open up new export markets – given the required quality and research capacities.

4 Strategy for the Development of the Sector

4.1 Structure of Objectives

Proceeding from the analyses, the following basic sector-specific objectives affecting **national policy** can be summarised:

- **Regional** economic co-operation of companies in the analysed sector in the target region should be improved. Steps towards the establishing of common trans-entity activities, for example during trade fairs, should be further encouraged. This would contribute to the settlement and prevention of conflicts in the target region (Stability Pact for Southeast Europe).
- This **sector** needs a unified economic area of Bosnia and Herzegovina to be formed, as is evident from the analytical data that were collected separately in the Federation and in the Republika Srpska. This can be considerably supported by the setting up of trans-entity business chambers and industry associations. The activities that have been started so far, such as the foundation of a joint chamber of foreign trade and the furniture industry association, should be enhanced.
- The regaining of lost market positions, particularly in the regional markets of Yugoslavia and its successor states, should be supported by export promoting measures by the Bosnian governments. In this respect, experience gained by neighbouring countries, such as Slovenia and Croatia, should be used. The only realistic market of purchasers is the EU, and thus every effort should be made towards **future association**. At present, the process of stabilisation and association with the EU has stagnated since the Bosnian side had not, as agreed, completed the 18 steps of the “Road Map“ by summer 2000.
- The existing possibilities to maintain jobs or to create new jobs in the **sector** should be used more efficiently by integrating foreign know-how and capital. For this purpose the Bosnian governments should provide the appropriate legal and economic framework conditions and guarantee an economic climate that is friendly to start-ups.
- The Bosnian beech tree should be marketed as an internationally recognisable, unique product, with the creation of a brand the goal. This requires clear target

orientation and support by promoting measures to be taken by the government of Bosnia and Herzegovina.

- By following and enforcing the laws of the Bosnian governments, and with the **aid of the international community,** the over cropping of forests should be prevented. In a first stage, the data processing systems of forest management in the entities should be made compatible.

4.2 Strategic Approach

Strategic development can only be considered with the goal of achieving export capability/ international competitiveness.

I) Strategic Framework Concept:

There are two options for strategic positioning internationally:

- price leadership through the cheapest offer, or
- brand leadership through a recognisable unique feature.

Price leadership with a related low wage policy may lead to an increasing exodus from the country in the medium term, and thus is not be suitable if economic and political stability is to be achieved.

In restructuring former centrally planned economies and setting up new industries, elaborating a unique feature emphasizing the geographical location and clearly describing the object has proven successful elsewhere. Brand leadership could be achieved with the "Bosnian Beech" brand. This term has a positive image historically and worldwide in this field.

A strategy based on this would require the following:

- Concentration on this strategy, since its implementation would be the task of the entire industry
- Considerable enhancement of processing efficiency and treatment quality
- A step-by-step strategy to regain lost market positions
- A strategy to create new market segments

Concentration
The activities of the wood and furniture industry of Bosnia and Herzegovina should be concentrated on the harvesting, processing and/or utilisation of solid wood. In addition to the ecological aspects (i.e. regrowing natural raw materials with the possibility of creating closed material cycles), this strategy permits the import rate to be minimized, thereby achieving maximum local output.

The "Bosnian Beech" product can be promoted through both the solid wood and the veneer sectors. Beech wood is one of the more relatively valuable wood species, and thus a cheap price strategy must not be applied if a sustainable and internationally comparable level of earnings is to be achieved.

Production waste should be utilised as far as possible. If necessary, wooden chipboard for cheap products to be sold on the domestic market can be imported or replaced by plywood. The creation of the country's own wooden chipboard production capacities is not economical because of high investment, the relatively small domestic market and the inevitable crowding-out of competition.

II) Approaches

Approach of the Companies
Many interviewees in the processing firms cast a nostalgic glance back to the pre-war situation - a time characterised by the complete use of capacities and a large proportion of exports. Among others, furniture used to be a much in demand "exchange commodity", which gave the managers of wood and furniture enterprises a high social standing. Many companies seek to regain this status by searching for orders in the field of job processing.

The belief that Bosnia and Herzegovina is an interesting partner for job processing because of low personnel expenses per capita was also expressed. However, this is unrealistic. Comparative values of productivity are hardly known or are not used as criteria. Unit labour costs are based on the complete use of capacities. For the existing domestic demand, the current capacities are much too large.

In order to compensate for the high degree of destruction and to meet the demand for technological re-equipment, foreign capital needs to become available, and the deficits settled under the leadership of the existing local managers.

Approach of the Consultants
The country's population is that of a larger city in western Europe. Its purchasing power is far below this, however. Thus investment based on the wish to achieve market presence is rather improbable.

Even as part of Yugoslavia, Bosnia and Herzegovina was not a highly specialised woodworking and furniture producing area. In addition to other industries, primary processing facilities or furniture manufacturers with a maximum depth of processing to meet the local demand used to exist here. "SIPAD" and "KRIVAJA" shipped considerable volumes to foreign countries and had their own branches and companies there. The companies that exist nowadays, however, did not have any direct foreign contacts then.

The wood and furniture industry of Bosnia and Herzegovina was cut off the international markets about 10 years ago. Ever since, these markets have grown, but without any companies from Bosnia and Herzegovina. This means that their old market share has been taken over by other offerers, and consequently will probably be lost to the industry of Bosnia and Herzegovina for some time to come.

Hence, the only strategic chance for the existing businesses is seen in generating new markets or re-entering existing markets with the aid of established participants in the markets or strategic investors. European companies from the industry in question are usually family firms managed by their owners.

It should be clear that these strategic investors would provide their own management together with marketing and organisation know-how, at least for a 3 – 5 year set-up period. Consequently, the existing local elite would be replaced by a management team provided by the investor or recruited from the current “second“ row. This is clearly evident from case experience in Russia, Romania and Bulgaria. However, at the same time there is a short-term know-how transfer on the most urgent deficits - an inflow which is, however, necessary for the enterprises to survive with or without strategic investors.

When developing an industry strategy for Bosnia and Herzegovina there should be, in the future, a clearer distinction between the structures of handicraft shops/small factories, industry/medium-size businesses and big business. In addition, the distinction between a domestic market and foreign market orientation should be made clearer. Essential growth impetus in the regional or the domestic market, as the case may be, is expected from new or recovering handicraft shops/small factories – with the appropriate start-up-friendly framework conditions a precondition.

Privatisation, spin-offs and/or the extension of certain parts of companies should support the formation of an efficient industrial middle class. These businesses have the chance to reach an internationally compatible level in the short run with manageable investments, and to enter international markets with new or specialised products.

The sources of investment funds for this purpose are found on the local market or in private activities. In this respect, the government, with its tax, customs and economic policies, is responsible for providing conditions that continue to enhance the mobilisation of such funds and the accumulation of further capital.

III) Development Recommendations

In general, the implementation of an industry strategy is complicated by limited local investment potential.

Small Sawmills

In the past few years a large number of small sawmills have been set up. Several sources mention the figure of 2,000 facilities. Usually these businesses are acting in a legally grey area in terms of company registration, procurement of raw materials and tax-paying on revenues. Investment is privately financed in most cases. Their technological standards are low, and the bucking coefficient (sawtimber output) is at the bottom level. There are scarcely any drying capacities. Thus, these undertakings are only able to do primary rifting/primary confectioning of stem wood. In the future the large number of such businesses may lead to increased overcropping of forest resources.

The resulting problems can be compensated for by appropriate legislation and its enforcement.
The small sawmills predominantly play a role in supplying the regional building industry, and as such have important labour market effects. Usually these businesses employ 5 – 10

workers. Due to their regional orientation they are relatively crisis-resistant. Their technological standards should be permanently raised by improved training and further training facilities. It is necessary to create structures for the political representation of these businesses (i.e. an entrepreneur's association).

Joinery Manufacturers
There are joinery facilities in virtually every populated area. These vary between empty workshops and well-used, state-of-the-art equipped premises.

As a principle, joinery businesses with their regional and/or municipal orientation are important service providers and job creators. These businesses typically have 3 – 20 employees. An impeding factor in Bosnia and Herzegovina is the mostly low standard of skills and quality in these businesses. This factor is deteriorating along with the increasing availability of imported modern materials and semi-products: available skills don't permit the efficient use of tools.

The new sector should be underpinned by training and qualification facilities and an economic climate that supports start-ups. In the trade chambers, the formation of local and regional guilds or entrepreneur associations is required.

Sawmills
Capacities for the rifting of wood and/or its further processing exist in two types: on one hand, there are specialised large sawmills for primary processing; while on the other hand, the bigger furniture manufacturers are vertically structured and thus have their own sawing facilities. Consequently, division of labour within the national economy is paralysed, and the actual sawmills are compelled to provide goods with a lower depth of processing for export purposes.

Since the processed hardwood (beech and oak) is a high-value commodity, the widespread export of sawtimber causes considerable losses for the national economy. This effect is exacerbated by too few drying capacities and qualities. In addition, too low bucking coefficients (quantity of sawtimber) are achieved because of obsolete technologies. In terms of national economy interests, achieving increased output from the raw material requires the restructuring of primary processing and deeper-reaching utilisation. It is recommended that exports of sawtimber are restricted either by export quota or export charges, at least for a certain time in the future, which would also contribute to the protection of the raw material stocks.

The strategy of the industry should be oriented towards opening up the domestic market for the sawmills and woodworking businesses. This means that in the course of the privatisation of the processing enterprises, consistent restructuring of these companies, including the separation of facilities for preliminary stages of production, will be necessary. This will lead to the formation of market prices, and thus to efforts aiming at reducing costs by raising the bucking coefficient and bringing immediate quality improvements. The capacities of further processing to high-value product ranges, such as parquet wood, planed wood for interior fittings, and glued wood assortments for timber construction, stairs and furniture manufacturing should be supported.
The waste material should consistently be ecologically used.

Small Timber Sawmills

High economic efficiency in the utilisation of raw materials can be secured by the setting-up of automated small timber sawmills as suppliers for the component-oriented furniture industry. For this purpose, private investment should be acquired in connection with consulting services in the production area.

Trimming

A higher-value product range for the domestic market could be trimmed roof structures. Currently trimming is done on the building site. Specialised automated trimming facilities do not yet properly exist and would probably lead to considerable quality improvements. With the involvement of private investors and the government's support, multipliable exemplary solutions could be provided.

Packing

The national economy is largely based on agriculture, with considerable metal-working capacities. Both industries need packing materials. Wood in the form of wood-wool, chipware and boardware is an excellent raw material for packing. The Bosnian governments should therefore secure the appropriate legal and economic framework conditions in order to facilitate the use of such packing materials.

Planed Products/Parquet

Many companies which have become aware of the necessity of introducing deeper-reaching processing lines have created capacities for parquet manufacturing. Due to cost assets, foreign investors have shown some interest in this production. However, since the companies usually have relatively limited capacities, it should be expected that cost-related compatibility will be lost in the future. Hence, the pooling of capacities by consistent specialisation should be supported.

Plywood/Veneers

Beech plywood is currently being produced, but of a minor quality. These capacities should be modernised for the production of veneers and plywood for the upholstered furniture industry, pre-shaped wooden components for chairs, plywood for building purposes and as packing material, and veneered wood for chip baskets, etc. This usually requires little investment, mainly in veneering and pressing (approximately 50 – 100 TEUR), and could therefore be provided by the companies themselves. The improvement of training in technology and quality assurance is necessary, with a focus on the domestic market. The Ministries of Economics or Industry, as the case may be, in Bosnia and Herzegovina (Federation and Republika Srpska) or, alternatively, the business chambers, should commission respective market analyses which should be made available to the companies. These studies will enable them to accordingly adjust their capacities and products and obtain assistance in loan negotiations.

Wood Chipboard

During several discussions the idea of creating capacities for the production of chipboards was mentioned. However, this suggestion should be reviewed very critically. A more or less efficient chipboard factory requires approximately 100 million EUR in investment, including construction work. For reasons of competition, several factories would also have to be built.

However, the output of just one factory would exceed domestic demand in Bosnia and Herzegovina, while the export market for chipboard furniture is low-priced level and subject to crowding out. With the EU's coming expansion, adjustments in personnel expenses are expected, which will further enhance the pressure of competition in this segment.

The production of chipboard furniture, however, is justified because of its placing in the domestic market and in nearby foreign countries. The product ranges that are required for this purpose may be provided by imports. Any import barriers, if any, should be removed in this respect, and the Bosnian governments should provide appropriate framework conditions.

Energetic Waste Utilisation

For the utilisation of dried waste of planed wood manufacturing and the furniture industry, an infrastructure for energetic use should be built. Nowadays there are sufficiently sophisticated utilisation technologies for this ecologically extremely significant approach. These technologies enable high operating ratios in the case of downstream conversion into electric energy, and their use is scalable. In order to secure continuous operation, compressing/pelleting of chips should be used. The compressed and dried materials have a high calorific value. In order to utilise the respective chip stock, the appropriate disposal system (on the basis of containers) should be established.

Most of the required components can be made in Bosnia and Herzegovina. The same applies to the combustion/gasification units.

As a first step, the Bosnian Ministries of Economics or Industry, as the case may be, should record the available stock of planed wood manufacturing and furniture industry waste.

Simultaneously, relevant metal-working enterprises should be involved, with proper supportive measures, in the manufacturing of components and combustion/gasification units.

In a second step domestic investors who could operate such units should be approached. This particularly applies to entrepreneurs in the planed wood and furniture industry. Because of the great economic (steam generation, heat and electric energy) and ecological importance of such methods (modern processes enable the utilisation of ecologically contaminated wood waste), municipal administrations and/or institutions should be involved.

Restructuring of the Furniture Manufacturers

The existing furniture producing companies have deep-reaching production lines which should be dissolved in the course of the restructuring/privatisation process. This should result in the emergence of a trans-regional division of labour which, in turn, will cause the formation of compatible market prices. One first step in this direction could be the set-up of profit centres in the existing companies. Because of the very diverse development chances of the furniture producers, a further breakdown is made as follows:

Furniture Components

The best export chances are provided by high-value furniture components (front surfaces, frames, glued wood slabs, frame components, compound chairs and tables) in various depths of production for confectioning and surface finishing on the various markets.

Companies in Bosnia and Herzegovina are currently unable to deliver products in compliance with international market requirements and quality standards, and on a by-order and an in-schedule basis. Furthermore, the supply business makes it possible to use other channels of distribution, and thus to compensate for the absence of proprietary ones. It also makes it possible to access modern design techniques which are demanded by the markets. The technical preconditions for this exist in the companies.

This should be backed up with a marketing support programme.

Upholstered Furniture

At present Bosnian upholstered furniture (with a few exceptions) does not have a chance on international markets in terms of design, workmanship, materials used, functionality and price.

There is limited demand on the domestic market. These measures – especially in vocational training and adult training – should therefore be taken in order to gradually compensate for the above handicaps in the medium term.

Corpus Furniture

As far as wooden corpus furniture (solid wood furniture) is concerned, products from former Yugoslavia have a good international image. However, design and surface finish do not meet market standards. This situation can be improved in the short run by appropriate further training measures and affordable investment (from companies' own capital resources and the proceeds from the sale of no longer needed equipment and operating sections). Because of the enterprises' structure and organisation, which is insufficient for customer-tailored, by-order production, companies should be oriented to offer furniture product ranges with a limited range of variables (dining rooms, bedrooms). Positioning such products on the international markets should be supported and extended by the government by appropriate promotion instruments (e.g. a sales promotion programme).

Sitting Furniture (Chairs)

In terms of design, quality and assortment, the companies in the Republika Srpska are currently clearly ahead of those in the Federation (with a few exceptions). International compatibility is expected to be first achieved in the small furniture, chair and table ranges. The variety of these ranges is limited. The material plays an important role, and here the ”Bosnian Beech“ label may become an important access tool. However, the current range of designs and assortments, surface quality and prices are inadequate. In this respect, activities aiming at the pooling of different producers' product ranges should be encouraged. These should include the formation of a specialised wholesale company, manufacturing in smaller and more flexible units by spinning off operating units and transforming them into independent small businesses, and creating broader design and product range solutions. Furthermore, adult training activities and relevant technological investment in more environmentally-friendly varnishing technologies are also necessary.

For this purpose, a governmental credit programme, e.g. co-funded by the EBRD or the World Bank, should be initiated. As a result of these measures, real chances in the export business and in the regaining of lost regional and eastern European markets are expected.

Object and Office Furniture
Most object and office furniture are replicas of other designs. In the area of object furniture (hotel interior work) it is possible to regain international market share if the required systems of distribution are set up and complete solutions are offered. This requires proper support. In addition, training in the handling of modern materials is required.

The office furniture market is not compatible internationally in terms of design and price. However, it is useful for the domestic market to submit offers that fit this market. In the course of ongoing privatisation increasing demand is expected, initially particularly in the lower price segments. The protection of the market against cheap imports (which requires the introduction of import charges for cheap assortments) is useful for a certain period.

High-value ranges require the introduction of central regulations for procurement by the administration authorities.

4.3 Measures for the Opening of New Markets

An accompanying **marketing campaign** in the country (to create an "all-together-feeling" similar to the campaign "German Entrepreneurs Drive German Cars" earlier in Germany) may stimulate domestic demand and increase trust among potential customers. This also means that ministries, business chambers and other institutions must promote the relevant examples which are made publicly known.

This campaign, however, can only be successful if the offered goods are available everywhere. Thus the development of efficient distribution and wholesale structures should be supported by appropriate promotion instruments, for instance the securing of a proper climate for investments by granting advantageous loans.

As for public investment, an appropriate **preferential solution for domestic offerers** should be defined. In addition, all public invitations to tender should include the obligation to obtain domestic bids.

To stimulate the export markets of this industry, the **"Bosnian Beech"** brand should be developed.

This image could be initially promoted using high-quality printed materials which could be widely distributed through the existing networks of the foreign representations of Bosnia and Herzegovina. This should be accompanied by a matching marketing campaign at all trade fairs and exhibitions.

For companies that want to build up channels of distribution in foreign countries, consulting on market entry strategies and local investment promotion activities should be offered (e.g. by the establishment of foreign trade chambers).

Entering foreign markets and generating sufficient profit is only possible with innovative products and/or modern design. This requires measures that interlink the existing potentials in a better way and financially support the development projects. In addition to governmental coordination and governmental provision of funds, joint access to EU funds with western partners should particularly be improved, by granting comprehensive privileges to western partners if they locate businesses in Bosnia and Herzegovina.

Nowadays the quality of the offered products is an essential aspect of a successful entry into a market. Thus, companies should be motivated and assisted in the introduction of efficient quality management systems.

At present the costs of **participation at foreign trade fairs** may exceed the financial resources of the companies. For this reason a programme providing governmental and financial support for joint booths at selected foreign exhibitions and trade fairs is required. In order to achieve sustainability in such activities the subsequent maintenance of such trade fair contacts should also be supported and/or the accruing costs should be co-funded. Either relevant promotion programmes or tax privileges should be used for this purpose. Financial support should be organised to fund costs of participation on a pro rata basis (up to 50%).

4.4 Measures to Improve the Integration of the Sector

Inter-sector integration of this sector is especially recommended via improved **co-operation with the engineering/metalworking and services sectors**.

The available woodworking machines and tools urgently need renovation and/or repair. No regional service and repair capacities are available. Consequently, all services are performed within companies. This causes unnecessary expenses with a quality that cannot be regulated. At the same time, metalworking companies from Bosnia and Herzegovina are trying to enter international markets as suppliers even though they are obviously failing to explore the local market, especially in tool manufacturing. This also applies to the manufacturing of tools and sub-assemblies for machines in the woodworking and furniture industry.

Another area is the development and manufacturing of **modern units for the energetic utilisation of wood** in industrial enterprises. The power of most of the available units is too low.

4.5 Qualification Activities and R&D

Several paragraphs of this study contain comments on the structure and available capacities of training and further training measures. In this field strategic orientation may only be focused on a sharper profiling of the relevant institutions in accordance with international standards.

First of all, the offered courses in R&D should be improved by commercialisation. This is the only possible way to quickly and efficiently do the reconstruction work and get rid of institutions that are “remnants of the past“, i.e. no longer market-compatible. In the future, specialising in services that are demanded by the European industry will be essential to survive.

4.6 Funding

The funding of the proposed measures requires a comprehensive programme for the promotion of small and medium-size businesses in the wood and furniture industry. Such a programme should be first scheduled for a 5 year period, and should have a volume of around 20 million EUR per year. The required regulations could be formulated based on German standards (special promotion of start-ups and small and medium-size businesses in the adjacent territories).

A programme could be funded out of relevant national debts. Obtaining these funds from the Stability Pact or through the World Bank is also conceivable.

Instead of supporting consumption with small loans, as is currently done, these funds should rather be concentrated and used for investments in the industry (in this respect only small and medium-size businesses) and jobs that are secure in the future. These funds could be disbursed on the basis of earmarked promotion programmes in the form of co-funding with increasing individual contribution from the companies themselves. If approximately 100 million EUR is allocated, about 600 to 1,000 small and medium-size businesses could be supported. With these funds, an additional annual turnover of at least 600 million EUR can be initiated.

If necessary, this programme could be extended by investment subsidies (10 to 20%).

Since the successful privatisation of existing enterprises with a real inflow of liquidity seems to be possible only after a clear revaluation/devaluation of assets, a government guarantee programme to fund the operating funds is required. In the case of start-ups, securities in the form of technological equipment and stocks could be used.

The financing of operating funds in the companies usually has to be secured by their principal bankers. The high interest rates, which the companies have complained about, reflect market conditions and the risk level, and can be normalised by increasing competition in the banking business.

4.7. Foreign Investment

There should be no expectations that foreign investment – except in some individual cases – can be obtained at short notice. Realistically speaking, neither the political climate in Bosnia and Herzegovina nor the investment climate or the current situation in the European building industry allow considerable capital inflows to be expected.

In the current situation, above-average yields cannot be expected in the domestic market. Within the limitations of existing capacities, cost advantages in the field of procurement cannot be achieved at short notice under the current political framework conditions, or with start-ups with less investment than in other locations. The omissions of the past 3 years have deepened this impression among potential investors. In the eyes of investors, there are many more attractive locations nearby (Romania, Hungary, Slovenia, Croatia, etc.).

As a result of foreign investment and streamlining and restructuring measures in connection with the increase in labour productivity, considerably more jobs, particularly in the major enterprises, will disappear (an estimated 60% of existing positions). This job shortage can be counteracted to a certain extent by the promotion of start-ups and small and medium-size businesses.

Thus the option of higher government foreign debts to fund investment programmes seems to be reasonable, since this could secure the streamlining and restructuring of companies, and on the other hand also create new jobs. However, it should be noted that investment promotion programmes by foreign lenders (e.g. the IFC) have failed in the past, while on other occasions the allocated funds have been used by the companies for purposes other than those actually intended, i.e. to finance operating funds or pay wages. Thus an essential precondition is the determination and verification of the correct allocation of funds (e.g. by the appropriate exchange of management staff).

5 Catalogue of Measures

5.1 Immediate Measures

Company Level
Companies of all types of ownership and size should be supported by governmental promotion and consulting programmes, with the involvement of private, local and international consulting and training institutions. The contents of such programmes should focus on the following subjects:

Strategy Development
- Elaboration of development and modernisation concepts

Development of Marketing and Distribution
- Elaboration of marketing concepts and determination of marketing objectives
- Training in the use of modern marketing tools

Promotion of Trade and Sales
- Preparation and implementation of participation in trade fairs and exhibitions
- Revitalisation of exports, especially to Russia, and generation of new markets

Organisation and Quality Assurance
- Measures bringing workplace-related quality improvements
- Organisation of entrepreneurial trips in order to collect information;

Securing or Increasing Production Efficiency
- Reducing training deficits, and providing advice on specific technological problems;
- Workplace-related application consulting

- Trans-company training in special trades, e.g. woodworking, wood drying, wood sorting etc.

Restructuring and Privatisation Concepts

- Elaboration of restructuring and privatisation concepts for enterprises
- Making cross-links to relevant specialist projects of the GTZ or other organisations
- Organisation, preparation and implementation of specialist seminars (e.g. marketing, quality management, work preparation, steaming and drying, fundamentals of woodworking etc.)
- Preparation and organisation of participation in trade fairs and exhibitions; mobilisation of potential financial support for such participation

The management of the companies is responsible for the implementation of these measures.

Meso Level

For 2001 the preparation of an industry-related paper by the **business chamber** has been announced. The development of **trade guilds** in the joinery trade and an operable **industry association of the woodworking and furniture industry** in Bosnia and Herzegovina (trans-entity) should be supported by appropriate consulting services and the provision of experience from other countries (e.g. Germany). Many of the subjects described above can be much more cost-efficiently handled by joint action of the companies and with the assistance of their industry association. Existing associations and training institutions (University of Sarajevo, college of Banja Luka) should be involved as early as possible in the preparation of a promotion programme and during its subsequent implementation.

Principally, there is the possibility of co-operation with the Business Chamber of Sarajevo which already employs quality specialists (quality managers and auditors in accordance with ISO 9000) and REFA (modern methods for the control of production and administration processes; co-operation with REFA International in Darmstadt) for instance in the field of the execution of ”Measures of Workplace-Related Quality Improvement“.

Macro Level

The set-up of new businesses and the development of small and medium-size companies should be supported by national promotion programmes for a term of five years in an initial stage. By allocating governmental funds and co-funding by the company involved, with an increasing portion coming from the latter’s resources, the state should secure an annual investment volume of approximately 20 million DM for this sector.

A governmental guarantee programme should be initiated to finance operating funds and secure them through principal bankers.

The state should provide more favourable conditions, for example by achieving cost advantages for foreign investment at short notice, which would help enhance the commitment of foreign partners.

Privatisation should be considerably accelerated by government measures. There are currently pending draft laws on the following subjects:

- free entrepreneurship

- taxes
- export business, and others.

These should comply with this purpose.

In addition, it should be highlighted that the modernisation of the state-run forest administration and the granting of felling licenses, as well as the creation of modern legal regulations on governmental wood selling through auctions, are necessary. The privatisation of agricultural and forest areas (the dimensions of which are unclear, as no reliable information is available at present) and/or their sale could provide the state with revenues and at the same time reduce its expenses. However, as it is common international practice to deal with this area as part of agriculture, this study does not further address this issue.

As for the handling of “illegal“ small sawmills, legal regulations should be determined and enforced to secure minimum technological and quality standards for wood products.

With a more entrepreneur-friendly climate for small businesses, conditions should be created that make transition into the “legal“ business sector more attractive.

5.2 Medium-Term Measures

Company Level
The contents of medium-term promotion programmes should focus on the following subjects:

Strategy Development
- Development of companies’ own marketable designs
- Entry into export markets by intensified specialisation in furniture components and introduction of new products, such as wood pellets, in addition to other activities

Development of Marketing and Distribution
- Creation of modern distribution structures

Promotion of Trade and Sales
- Diversification of production programmes by the development of new products
- Preparation and implementation of participation in trade fairs and exhibitions
- Establishment of co-operation relations in the trade business
- Promotion of sales in the local market
- Revitalisation of exports, especially to Russia, and generation of new markets

Organisation and Quality Assurance
- Introduction of quality management systems, certification in accordance with ISO 9000
- Reorganisation of enterprises
- Renewal of the machine and tool stock
- Measures offering workplace-related quality improvement

- Execution of measures for quality improvement and stabilisation, especially in the selection of wood, drying, processing and finishing

Promotion of Co-operation and Organisation of Contacts
- Organisation of co-operation contacts and further development of co-operation relations

Production Efficiency Securing or Increasing
- Reducing training deficits, and consulting on specific technological problems
- Increasing labour productivity and reducing unit labour costs

Restructuring and Privatisation Concepts
- Preparation of restructuring and privatisation concepts for enterprises
- Organisation, preparation and implementation of specialist seminars (e.g. marketing, quality management, work preparation, steaming and drying, fundamentals of woodworking etc.)

Meso Level
The role and importance of the chambers in the Federation and in the Republika Srpska are still overly influenced by the past. The chambers do not yet completely fulfil their new tasks. In the medium term the chambers should be upgraded by consulting services and given more experience and know-how. With the assistance of the chambers, internal networks should be created for the use of joint services (also trans-industry), together with external networks with neighbouring countries (the former Yugoslavia zone) between material, component and sub-assembly suppliers as well as purchasers.

In the medium term it is even more important than for short-term measures that the meso level (chambers, associations, education and training institutions) is intensively involved in the elaboration of strategies and can prepare appropriate offers for the companies. The expenses concerning certain measures can be reduced by joint action. For instance, a company could import a modern CAD/CAM unit for furniture design (catchwords: “development of own marketable designs“), and make it available to other companies of this industry for a fee. As an alternative, an association could install and offer such a unit.

Macro Level
In the medium-term, the state should ensure that the sale of wood from state-owned forests is governed by market economy laws. The granting of privileges to state-owned enterprises should be stopped. Roundwood exports should be regulated accordingly and more strictly controlled. By these steps processing procedures, particularly in the Republika Srpska, should be deepened.

The monopolisation of the export business in the Federation will end, and consequently the large companies will dissolve. Both privatisation and survivability can be more easily secured for small and medium-size businesses. Therefore the governmental institutions (Ministries of Economics and Industry) should prepare and execute programmes to promote the participation of small and medium-size businesses in trade fairs and exhibitions and their export activities. The development of these small and medium-size businesses should be supported by the provision of consulting services in the medium term.

5.3 Long-Term Measures

Company Level
The businesses of all types of ownership and all sizes should be supported by government promotion and consulting programmes. The contents of these programmes should focus on the following subjects:

Trade and Sales Promotion
- Assistance in the design and introduction of new products

Organisation and Quality Assurance
- Reorganisation of enterprises
- Renewal of the machine and tool stock

Promotion of Co-operation and Organisation of Contacts
- Organisation of co-operation contacts and development of co-operation relations

Macro Level
The implementation of the government's framework concept for the development of a brand leadership based on “Bosnian Beech“ is only achievable on a trans-industry and trans-entity basis, and with a considerable increase in processing efficiency and finishing quality. The appropriate long-term strategy concept should be prepared with the involvement of all nationally relevant institutions (chambers, associations, institutions of training, research and technology transfer, private consulting firms, and self-employed advisers). It should be taken into consideration that in the long run sustainable offers, especially from the private sector, must be cost-covering and/or profitable. The consulting services by international lenders, which are still comprehensive and in many cases free for companies, should not hamper the development of national and/or regional capacities.

Annex: Bibliography

Srl. no.	Author/Source	Title
/1/	Chamber of Economy of Bosnia and Herzegovina	Bosnia and Herzegovina in basic figures. 1999
/2/	IFC – International Finance Corporation	Bosnia and Herzegovina. Initial Investigation of the forestry and timber Industry. Final Report. Final Draft Version, Rel. 13. Feb. 1997
/3/	Federlegno-Arredo & European Furniture Manufacturers Federation	Industrial Development Programme for Bosnia and Herzegovina, Strategic Perspectives of Bosnian Herzegovinian Wood-Processing Industry, September 1998
/4/	EU Phare	Euro Data, Flash Dossier Bosnia-Herzegovina, July 1999
/5/	Anonymous	Strategy of spatial development of the Federation of BiH – 1997
/6/	Food and Agriculture Organisation of the UN & World Bank	Emergency forestry project. Working Paper A. Forestry and wood industry. Draft. 1996
/7/	Statistics Committee of BaH	Statistical Annual Report 1999
/8/	Ferdinand Holzmann Verlag GmbH	Möbel. Zahlen. Daten. - Das statistische Jahrbuch für die (deutsche) Möbelbranche 2000
/9/		EBRD Transitional Report 1999
/10/	Šaćir Šošević, Samir Šošević	Study on the Development of the Wood and Furniture Industry in BaH by commission of INNOTECH Holztechnologien GmbH. 2001
/11/	Th. Stautmeister, R. Scharpenberg	Final Report on the IBD-Programme: Selection of Companies in the Wood and Furniture Sector in Bosnia and Herzegovina, January 2000, PN: 97.0072.5
/12/	Federal Statistic Biro	Statistical Annual Report 1999
/13/	DEG; GTZ; F.A.Z.-Institut	Südosteuropa Perspektiven 2000

/14/	Geretshauser	Schlussbericht zur Voruntersuchung von 4 Unternehmen im Rahmen des Vorhabens "Durchführung von Studien zur Privatisierung ausgewählter staatlicher Industriebetriebe in der Republik Srpska" PN 97.0795.1 – 00.100
/15/	Geretshauser	Bericht zum Experteneinsatz in der Republik Srpska. Unterstützung von 4 Betrieben in der Republik Srpska bei der Umsetzung der Privatisierung/Restrutkurierung. Banja Luka, 30.06.2000
/16/	U. Kurth, Th. Stautmeister	Studien zur Privatisierung ausgewählter staatlicher Industriebetribe in der Föderation BiH, Region Tuzla: Möbelhersteller Konjuh, Zivinice. 1999. PN 97.0795.1 – 00.300
/17/	Chamber of Commerce and Industry of the Republika Srpska	Forestry and Wood Industry
/18/	WIIW Industry Studies	Development and prospects of the wood and wood products sector in the central and eastern European countries. 1999
/19/	Chamber of Economy of Bosnia and Herzegovina (1999)	Excerpts from the laws regulating business activity with abroad. 1999.
/20/	USAID (1998)	Survey of selected sectors. Wood, metals and machinery, textiles and leather, construction, agri-business and food processing. USAID Business Development Program, Business Consulting, Washington. 1998.