

**Bosnia and Herzegovina
Development Studies for Sectors with Potential
Food Sector Study, Bosnia and Herzegovina**

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Written by:

Inge Gärke

igaerke@gmx.net

ingeg@open.net.ba

Tel: +49-171-5460468

Tel: +387-66 158 264

commissioned by

Deutschen Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

Ulrike Gantzer-Sommer

OE 8012

Postfach 51 80

65726 Eschborn

Deutschland

Telefon: +49-6196-79 2139

Fax: +49-6196-79 7297

E-mail: ulrike.gantzer-sommer@gtz.de

Wulf Hendrik Goretzky

Lejla Abdagic

Muamer Peljto

GTZ-Büro Wirtschaftsförderung

Splitska 6

71000 Sarajevo

Bosnien und Herzegowina

Telefon/Fax: +387-33-220596

E-mail: wulf.goretzky@gtz.com.ba

lejla.abdagic@gtz.com.ba

muamer.peljto@gtz.com.ba

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Referat 204

Friedrich-Ebert-Allee 40

53113 Bonn

Deutschland

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List of Abbreviations

AMC	Agricultural Marketing Centre (Hungary)
BH	Bosnia-Herzegovina
BSE	Bovine Spongiform Encephalopathy
CAFAO	Customs and Fiscal Assistance Office (EC)
DM	Deutsche Mark (German Mark)
dt	0.1 tons
e.g.	for example
EC	European Commission
EG Tuzla	Entwicklungsgesellschaft (Development Society) Tuzla
EU	European Union
EUR	Euro
FAO	Food and Agriculture Organisation of the United Nations
FBH	Federation of Bosnia-Herzegovina
FIAS	Foreign Investment Advisory Service (Service of IFC and WB)
GDP	Gross Domestic Product
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit (German Technical Cooperation)
ha	Hectare
HACCP	Hazard Analysis and Critical Control Point
i.a.	inter alia (among others)
i.e.	that is to say
IFC	International Finance Corporation
KfW	Kreditanstalt fuer Wiederaufbau (German Financial Cooperation)
kg	Kilograms
KM	Convertible Mark
km	Kilometre
n.a	not available
NGO	Non governmental organisation
NL	The Netherlands
OHR	Office of the High Representative
PET	Polyethylene
Pfg	Pfennig (= 0.10 DM)
R+D	Research and Development

RS	Republic Srpska
SEED	South East Europe Development (IFC)
SIDA	Swedish International Development Agency
SIPPO	Swiss Import Promotion Project
SSR	Self-Sufficiency Rate
t	Ton(s)
UHT	Ultra High Temperature
UNDP	United Nations Development Programme
US\$	United States Dollar
USAID	United States Agency for International Development
USDA	United States Department for Agriculture
WTO	World Trade Organisation
ZMP	Zentrale Markt- und Preisberichtsstelle (German Agency for Market and Price Information)

1. Introduction

1.1 Sector definition and methodological approach

The term “sector” refers to economic branches in their complex environment. Thereby the focus lies on the forward and backward linkages to other companies and the horizontal and vertical relations between them.

The term “food sector“ used in this study includes not only the food sector but also the links to primary agricultural production, to the supply with other inputs, as well as services such as packaging, storage, transport, retail and wholesale. However, the integrated levels of the food sector are more frequently subsumed under the term “agricultural sector“, whose backward linkage (equipment, agricultural engines etc.) and forward linkage (processing, trade) are being analysed. This study focuses on the production, processing and trade of food products, whereas other natural stimulant products are treated only in a summarised form.

This study divides the food sector into five sub-sectors:

1. Sub-sector Cereals
2. Sub-sector Meat (including poultry)
3. Sub-sector Dairy
4. Sub-sector Fruits & Vegetables
5. Sub-sector Others (winery, distilleries, breweries, production of soft drinks and mineral water, tobacco factories, production of sweets or coffee etc.).

The analysis is based on the concept of **systemic competitiveness** (Meyer-Stammer, 2000), according to which competitiveness can only be created by the common efforts of all those that are active in the private economy or in non-governmental or state organisations. The systemic competitiveness of a sector not only refers to the competitiveness of enterprises, but also to the following four levels:

- Meta level: (i) social consensus on the guiding principle of market orientation, (ii) a basic pattern of legal, political, economic and social organisation that permits the strengthening of competitiveness and innovation, (iii) the willingness and ability to implement a medium to long-term strategy of competition-oriented techno-industrial development.
- Macro level: (i) a stable macroeconomic framework that ensures undistorted prices and favourable financing terms, (ii) a competition policy that prevents the emergence of monopoly situations, (iii) an exchange rate and trade policy that does not obstruct exports.
- Micro level: (i) the effective management of technical and organisational learning processes as a necessary condition of continuous product and process innovation, (ii) optimisation of the inter-company division of labour by encouraging close interaction between industrial enterprises, suppliers, service firms and R+D institutions, (iii) intensification of producer-user contacts.
- Meso level: (i) competitive material infrastructure (transport, communication, energy, water), (ii) special regulatory systems, e.g. for food standards, environment standards, sanitary standards, (iii) close interaction between local and/or regional

administrations, R+D institutions, and local business groups (Public-Private-Partnership in decision-making and implementation), (iv) regional co-operation (e.g. concerning transport) and regional integration (e.g. in free trade zones).

The study is further based on Michael Porter's **cluster approach**. A cluster can be defined as a network of interdependent companies linked to each other within a production chain. A cluster is not considered to be of regional nature only, but also to be related to the sector, including all integrated levels of the value added chains. This can also be called an environment or branch structure analysis, since not only the branch itself but also its inner structure and its competitiveness are analysed.

In BH, numerous studies on agricultural production as well as on agribusiness already exist. A detailed analysis of the potentials and problems of the agricultural sector as well as the strategies to support the agricultural sector can be seen in the Mid-Term Strategies of both entities (FAO 1999), which have also served as one of the sources of information of this study. In addition to this, data and information from ZMP-CD „Mittel- und Osteuropa 2000, Agrarmärkte in Zahlen“ (Central and Eastern Europe 2000, Agricultural Markets in Figures) were used to analyse agricultural production and competitors in the region.

The more specific area of **agribusiness** was also analysed, in particular the surveys of agro-processing companies conducted by the GTZ-Agricultural Sector Support project in 1999 and by SEED/IFC in 2000, sub-sector analyses by USAID in 1999, and analysis of data on external trade by USAID in 2000. Given this coverage, the willingness of these companies to participate in further surveys is limited, and should not be overstressed in order to avoid raising false expectations. Therefore, only a few strategically important companies have been interviewed to provide a general overview of the respective sub-sector.

In this study, we focus more on the analysis of the meso level as well as on the analysis of the domestic market and competitors. With regard to these subjects, processing and trade companies, government organisations, associations, chambers and representatives of donor organisations have been interviewed, and consumers and retail outlets also surveyed.

The following local experts supported the international expert during her mission to BH from July, 6th-26th 2001 during the interviews with processing companies, in gathering information on sub-sectors and in market investigations and consumer questioning:

- **Nihad Fejzić**, Veterinary economist, Veterinary faculty of Sarajevo University
- **Nedim Džano**, Economist, GTZ-Agricultural Sector Support project
- **Aleksandra Nikolić**, Agricultural economist, Agricultural faculty of Sarajevo University

The cooperation with the local experts proved to be efficient and I would therefore like to express my gratitude for their excellent work.

1.2 Trends in the food sector

A general trend in the food sector is the **significant increase in processed food of longer durability**. Furthermore, an increased trend towards convenience food can be observed in the last few decades. Convenience food covers, among others, frozen products (e.g. pizza), dried products (e.g. packed soup concentrates, baking mix) and other complete meals (e.g.

canned or in vacuum packaging). There is also increasing consumption of **snack products** (e.g. potato chips) and of **fast food** (e.g. cevapcici hamburger with French fries).

These trends derive primarily from the following developments:

- Changes in consumer behaviour (e.g. women increasingly work outside their homes and use less time for processing and preparing food; refrigerators are increasingly used in private households)
- Changes in the trade structure (supermarket chains instead of small retail shops, cold storage chains, improved logistics, reduced transport costs)
- Enormous progress in the food industry (cost reduction and standardisation, improvement of quality, distribution and marketing)
- Changes in production techniques (improved technologies for standardised mass production)

A further general trend is the marketing of **brand products** with standardised qualities and product labelling. There are brand products (e.g. Mon Cheri), company brands (e.g. Dr. Oetker) and increasingly also product ranges (e.g. Milka chocolate, Milka Lila Pause etc.).

Another important factor in the food sector is **product development**, whereby the range width (different products) and/or the range depth (variations of a similar product) are extended. In cases of very slight product variations that can be produced with the same technology (e.g. different kinds of fruit yoghurt), the term "mass customizing" is also used.

In the EU, increasing body and health awareness has led to rising consumption of low calorie and easily digestible "**light**" or "**healthy**" food (e.g. poultry, vegetable oil, skimmed milk and skimmed milk products, low-fat products, 100% fruit juices, vitamin additives). A more recent trend in richer industrial countries is the specific marketing of **functional food**, i.e. food with health supportive additives like bacteria, algae and fungi (e.g. prebiotic and probiotic yoghurts with special bacteria cultures to strengthen the immune system, which already have a market share of 15%) or genetically modified products (e.g. tomatoes with flavonol, reducing the likelihood of infections). Thus, functional food is designed to transfer the refrigerator at home into a 'home pharmacy'.

Ecologically produced food has established a stable market share in many EU countries. There are different variations of this food, such as biologic-dynamic, biologic-organic or integrated production, each of them referring to different restrictions concerning the use of mineral fertiliser, plant protection chemicals and production technologies. As for brand products, the certification of eco-products, including the control of the value added chain, is very important.

In the EU, USA, Canada and Australia, an increasing consumption of ethnic food has also been observed (e.g. Ajvar, Djuvec, mixed pickles), i.e. customer-specific products based on recipes of particular regions, which are primarily demanded by immigrants.

Concerning shopping behaviour, increasing mobility and lack of time is taken into account by ensuring the **high outreach and availability of standard products** (e.g. fruit juices or soft drinks of one brand). Furthermore, the phenomenon of "**smart shopping**" is increasingly

important, i.e. standard products are bought price-consciously in a low priced supermarket, but some other individual items are bought in luxury or bio-shops without taking the price into account. Thus, consumers can be less clearly classified into one market segment (e.g. price-conscious or quality-conscious clients).

1.3 Typical value chains

In general, the value-added chains in the food sector consist of the following parts:

- a) Agricultural inputs and services
- b) Plant production (e.g. cereal, forage, fruits and vegetable production)
- c) Animal production (including breeding, fattening) – and other inputs
- d) Entry logistics (storage and transport of raw materials)
- e) Processing, 1st level (e.g. flour, milk, sugar, meat)
- f) Processing, 2nd level (e.g. bread, pastries, yoghurt, cheese, candies, sausages)
- g) Exit logistics (storage and transport of final products)
- h) Wholesale trade
- i) Retail trade
- j) Service / Client service

In addition to the above mentioned, more technical value added chain, there is also an internal value chain within companies, based on supportive activities such as technology and process management, human resource management, as well as general business management, planning, financial management and accounting.

Specific areas for each sub-sector are those from plant production to processing, which are presented in the following list (note: animal production and 2nd level processing are not part of all sub-sectors):

- **Milling and Bakery industry:** wheat production > flour and feed production in flour mills and feed mills > bread and pastry production in bakeries
- **Meat industry:** forage plus concentrates > livestock and poultry production > slaughtering in slaughterhouses > further processing to meat and sausages in meat processing industry
- **Dairy industry:** forage and concentrates > milk cattle farming > pasteurisation / homogenisation in dairies > further processing to yoghurt, cheese in dairies
- **Fruits and vegetables:** fruit and vegetable production > processing to juices, jam, frozen, cooked or canned vegetables
- **Others:** a) grapes > winery > distillery for brandy / b) production of barley and wheat > beer brewing / c) soy beans and other oil seeds > processing into oil in oil mills / d) sugar beet > sugar refinery / e) water and concentrates > mixing and bottling of soft drinks / f) herbs > processing into tea / g) coffee beans > coffee roasting

1.4 Determining factors for foreign direct investment

Determining factors that attract foreign investors are those conditions on the meta, macro, micro and meso levels described in chapter 1.1. In particular, a relatively stable political and economic situation, good market opportunities, a reliable juridical system and an efficient bureaucracy are important for foreign investors.

The FIAS study in March 2001 of the commercial legal framework and administrative barriers to investment in Bosnia-Herzegovina mentions the following weaknesses:

- (i) The absence of a transparent and predictable statutory and regulatory framework for the establishment and operation of companies is a stumbling block for investment in the relatively small market in BH. The complexity of institutions on state, entity, cantonal and municipality levels further increases the difficulties, risks and costs of economic activities in BH.
- (j) The absence of consistent and transparent regulations and administrative procedures allows corruption and misuse of power to occur, thus increasing risks and costs for business in BH.
- (k) The lack of efficiency and ineffective policies, as well as weak administrative and juridical systems, are further cost and risk increasing factors.

The recommendations of the study emphasise the need to harmonise laws and regulations as well as simplify procedures.

Furthermore, there are factors limiting investments which are specific to the food sector (also see FIAS study, Bulgaria 2001), which include:

- Low purchasing power,
- Inefficiency in the local production and distribution of agricultural products
- Low management competencies in the food sector,
- Risk-averse behaviour of the banks towards this sector.

2. Situation analysis of the food sector in Bosnia-Herzegovina

2.1. Economic importance of the food sector

In 1998 the agricultural sector contributed 16% to the GDP of BH, compared with 24.6% in 1992. BH is a net importer of food products. With some exceptions, almost all food products are imported, above all wheat, meat products, milk products, fruit juices, sugar and oil. DM 1 billion is spent every year on food imports including unofficial imports (USAID 2000). There are hardly any foreign direct investments in the food sector. Primary agricultural production is predominantly private. There are still some large state food processing companies, although some private companies have also been established since the war.

The population of BH is about 3.5 million, of which 60% live in rural areas. Rural areas are characterised by high levels of migration. During and after the war (1992-1995) many people left rural areas. Their return has been a very slow process, and some only temporarily come back in order to run subsistence farming. Furthermore, not all property issues have been clarified, and there are still mines on some of the arable land. Despite this strong migrational trend, the unemployment rate is 30-35% according to official data, but could be even above 50% according to unofficial estimates. Currently, there is no information about the number of employees involved in agriculture and the food industry.

Production has enormously decreased due to the war and due to the transformation of the entire sector. Similar drops in production have also been reported in other countries in transition. This is a result of the breakdown of state farms, high production costs, the abundance or decrease of price subsidies, and, thus the adjustment of prices towards world market levels, the breakdown of market channels and structures as well as the effect of dispersed property structures. Moreover, BH has suffered the consequences of the war. According to estimates, war-related damages in the agricultural sector amount to approximately US\$ 4.54 billion. In some areas, 70% of the business infrastructure and 60% of the livestock were lost. More than 237,000 ha were mined when the war ended. The food processing industry has only worked at approximately 10% of its capacity since 1995. The decrease in production by 80% since the beginning of the 1990s (ZMP 2000) has exceeded the drop in demand due to a 15% population decline and a loss of purchasing power by 40%.

After the Dayton Agreement was set up, the international community granted US\$ 5.1 billion for the reconstruction programme and the return of refugees, of which US\$ 300 million was designated for the agricultural sector. Within the scope of the Stability Pact with the countries of South East Europe, further support to BH was decided upon, but to a smaller extent (99/00). Despite this support, the increase in production is still relatively small, and the animal stock has only been rebuilt to a small extent compared to the pre-war situation.

Prices of final food products and raw materials have been - apart from seasonal fluctuations - relatively stable since the Convertible Mark (KM) was introduced in June 1998. However, due to intensive trade with Serbia, there is somewhat stronger pressure on prices in the RS.

2.2 Agricultural production

In the following, an overview is given of extension of areas, production regions, farm structures, on the kind and quantity of locally produced raw materials, and on technologies and productivities (as far as information has been available). The main sources for information were the following reports: ZMP (2000), FAO (1999), IFC/SEED (2000), USAID (1999a and b), USAID (2000), GTZ Agricultural Sector Support project (1999), and production data (2000) from the statistical offices of the two entities FBH and RS. At this stage it should be mentioned that the statistical data in BH (which are also used by various other studies) are partly incomplete and not always reliable. In addition to this, it is extremely difficult to obtain up-to-date information (e.g. import-export data) from either the statistical offices or the responsible ministries.

2.2.1 Area and production regions

BH covers an area of about 5.11 million ha, with each entity covering approximately half of the total area. More than 50% of the country is covered by forests (about 2.7 million ha). About 1.85 million ha consists of agricultural land, of which only about 650,000 ha is arable land, whereas 1.2 million ha are pastures and meadows. 10% of the agricultural land in FBH is assumed to be mined, i.e. cannot be used for production.

There are four geographic regions: (i) Central Bosnian mountains, (ii) upper mountain region in the West (with only 9% agricultural land), (iii) Mediterranean area, a mountainous area near the coast (lower Herzegovina), and (iv) Northern Bosnia (RS) with flat, arable land along the river Sava. Except in the Mediterranean and upper mountain areas, the climate is moderately continental, with hot summers and cold winters. Production regions for wheat and maize are located along the Sava in the North. Dairy and bull fattening farms are located around Banja Luka, Bihac and Tuzla; sheep and goats are raised in more mountainous regions. Fruit and vegetable production is found around Tuzla, Mostar and along the Sava. Berry fruits are also produced in more mountainous areas. Grape and tobacco growing as well as the production of mandarins, peaches and apricots are mainly concentrated in the Mediterranean region near Mostar.

Maps indicating the major production areas in BH are presented in Annex 5.

2.2.2 Companies

Private farms account for more than 90% of agricultural production. There are approximately 570,000 farm households in the FBH and 258,000 in the RS (FAO 1999). Only 15% of the private farms in BH cultivate more than 5 ha and can, thus, be called commercial farms. Another 30% can be called part-time farmers (2-5 ha), while the rest are very small farms (less than 2 ha) producing mainly for subsistence purposes. The large state owned companies mostly have consolidated areas in good agricultural regions. At present, there are six large-scale dairy farms with, on average, 600 milk cows in each (near Tuzla, Sarajevo, Tomislavgrad, Capljina, Banja Luka, Bijeljina). Furthermore, there are about 1,000 medium-scale farms each with 5-10 milk cows, and a great number of small-scale farms and part-time farms with only 1-2 cows. These very small dairy farms often sell the male calves and keep only the female calves for future milk production.

2.2.3 Raw materials

Cereals: Before the war, 375-450,000 tons of wheat were produced locally, and the rest was imported from Serbia and Croatia in order to meet the local demand of about 550,000 tons. But production has since decreased sharply, and in 2000 amounted to merely **336,000 tons of wheat**. On one hand, the small production total is due to reduced areas dedicated to cereal production, while on the other hand is due to yields that are only average or lower than the average compared to other former Yugoslav countries. In the RS, the level of wheat production approximately corresponds to the pre-war level (275,000 tons in 2000) and exceeds the local demand. In the FBH, wheat production suffered a considerable decrease

to 61,000 tons: wheat imports are therefore mainly directed to this entity. About **470-800,000 tons maize** are produced in BH every year. Today, production in the RS is higher than before the war, with 367,000 tons (2000), actually exceeding the local demand, whereas production in the FBH dropped to 105,000 tons of maize.

Milk: About 850 million litres of milk were produced before the war; however, only a part was delivered to the dairies, mainly by the 10-15 larger state dairy farms (1/3 of milk delivery). About 99% of the milk was produced in private companies that rarely supplied dairies with their milk, but used it for their personal requirements or processed it into cheese and sold this on local markets. Due to the immense livestock losses, milk production and delivery was extremely low after the war (in 1997, only 10 million litres of milk were processed). In 1998, production of raw milk increased by 20% and production of processed milk by 36%. In 1999, **290-300 million litres of milk** were produced, of which about 8% was marketed, i.e. delivered to dairies that further processed the milk. One of the reasons behind the unwillingness of farmers to deliver to dairies is that payment from the latter is usually delayed.

One of the interviewed companies estimates that about **40-45 million litres of milk will be delivered to state dairies and about 15-30 million litres to private dairies in 2001**. Donor projects have both delivered cows and supported the establishment of small, private dairies. However, the delivery of cows often took place without providing training and extension to the farms and without analysing the market opportunities. The dairy industry was supported not only in production regions, but also in other regions, irrespective of sufficient raw milk supply. Some have too small capacities. The product range of these small private dairies is similar to that of large state dairies, but at higher unit costs, and they will, therefore, find it difficult to compete in the long run with the larger dairies once these have been restructured after successful privatisation.

Livestock, poultry, and fish: Livestock production was well developed in BH before the war. On one hand, there were several large-scale agro-complexes, also active in livestock growing, while on the other hand, there were many private small-scale farms with 1.5 cattle per farm on average. During the war, livestock declined by approximately 60% and only increased slightly after the war. In 1998/99, the livestock consisted of about 230-350,000 head of cattle, 80,000 pigs, 285,000 sheep and 2.35 million chickens (ZMP 2000). The entire meat production, including poultry, amounts to **42,500 tons slaughter weight**. Male calves and young bulls come partly from larger companies (e.g. Lijanovici in BH, Mladen Stojanovic in RS) or from auction sales by smallholder farms. Sperm for artificial insemination is supplied either by the insemination centre in Banja Luka or imported from Slovenia, Croatia, Austria, Germany and Yugoslavia.

Poultry production was well organised before the war, and was revitalised after it. In 2000, about **1.5 million layer chickens** were produced, half of them for egg production in large-scale companies such as Agrokomerc, the other half for egg production in smaller private companies with 2,000-3,000 hens. Altogether about **200 million eggs** are produced every year (1999). Broiler production as well as (in part) egg production is carried out in contract production. Companies deliver young layers or one-day-old broiler chickens, feed and vaccines. They advise farmers and organise the marketing of the products. The contract

farmer puts his infrastructure, energy, water and labour at their disposal and receives a relatively fixed payment per mature broiler.

There is insufficient information available on fish production and fishing. Some foreign direct investments have taken place, but as long as no state certification system exists, exports to the EU are not allowed, and, thus, this activity seems to have become less interesting.

Fruits and vegetables: Before the war, fruits and vegetables were mainly produced near Tuzla, Mostar, and along the Sava. The production took place in small private farms. Only small quantities were marketed, mostly to be sold on local markets, and only part was delivered to state processing companies. Surpluses that could be exported only occurred in potato, plum and berry fruit production. For example, there was an annual surplus of 10,000 tons of berry fruits, of which 20% was exported.

After the war, vegetable production recovered relatively quickly, since small farms were able to start production without making large investments. Today about **685,000 tons of vegetables** and approximately 413,000 tons of potatoes are produced (1998). Most of the vegetables are produced in open fields in BH (there is little glasshouse production) and only few varieties are used. The vegetable season only lasts about 5 months. Out-of-season vegetables are mostly imported, together with seasonal vegetables.

In the fruit sector, few investments have been made into new orchards, as this demands larger-scale and longer term investments as well as planting material of good quality. BH produces primarily plums, pears and apples (14.5 million fruit trees, 1998), and the entire **fruit production** amounts to approximately **258,000 tons** (1998). Some companies estimate that the domestic demand in BH is only 50% covered by domestic supply. (IFC/SEED 2000). The main markets for fruits and vegetables are the wholesale market in Bijeljina, the "Arizona" market in Brcko and the markets in Sarajevo and other larger towns.

Other agricultural products: Breweries use barley and wheat for beer production. Near Mostar (FBH) there are approximately 240 ha of vineyards (white wine varieties Zeljusa and Zilavka) belonging to the state enterprise Hepok, while in the RS there are also another 510 ha of vineyards according to statistical data. Furthermore, there are some smaller, private vineyards in the FBH. Sugar beet was cultivated before the war for the domestic sugar factory (about 50% of the raw material), but nowadays there is hardly any sugar production, as sugar is no longer refined in BH. Oil seed production amounted to 15,000 tons before the war, meeting 20-30% of the raw material demand of the oil mill in Brcko. Today, oil seeds are mainly imported from Serbia.

2.2.4 Present market situation

Overview 1: Consumption and production of agricultural products in BH (1998/99)

Product	Consumption in BH (in 1000 t)	Production in BH (in 1000 t)	SSR (%) (calculated)	Import demand (calculated, in 1,000 tons)
Grain:				
Wheat	(1) 545	341	63	204
Maize	n.a.	(1b) 472		
Beef + Veal	(2) 27.6	(2) 12.5	45	15
Pork	20	10	50	10
Mutton	16	6	38	10
Poultry	(2) 31	14	45	17
Eggs (in millions)	380	200	53	180
Milk	(2) 391	(2) 293	75	98
Fruit	n.a.	258	n.a.	
Of which: Apples		(1b) 41		
Plums		(1b) 91		
Vegetables		685		
Of which: Cabbage		(1b) 69		
Tomatoes		(1b) 30		
Pepper		(1b) 29		
Potatoes		(1b) 287		
Grapes		(1b) 30		

Source: Own compilation based on ZMP data (2000). (1) data of year 1998 from USAID (1999a); (1b) data of year 2000 from statistical offices of the entities (2) data of year 1999 from USAID (2000)

Except for a few products, the present market for BH products is the internal market, which can clearly not be supplied by domestic products alone. Even before the war, BH was not able to satisfy the domestic market in terms of most of the products (particularly wheat, maize, beef, oil seeds, sugar beets). BH was able to export only a few products such as baby calves, berry fruits and medicinal plants. Despite the decline in demand, the even stronger decrease in production has led to a wide gap between supply and demand that has to be met by imports.

2.2.5 Technology and productivity

Most of the technologies used in the agriculture sector are outdated. During the last ten years, state enterprises have not invested greatly in modernisation, while private companies often lacked the financial resources as well as the know-how to modernise. As there is no practical vocational training system for farmers, coupled with the fact that the extension service has been inactive for years, few improved cultivation methods have been introduced and applied. In most sub-sectors, productivity in BH (as well as in the Republic of Yugoslavia) is far lower than in other Central and Eastern European countries, the latter

already lagging behind Western Europe and the USA in productivity. Production costs of many products in BH are far higher than in other transition countries due to lower productivity and higher logistics costs (e.g. for milk collection).

Overview 2: Productivity of agricultural production in BH and in countries in the region

	Milk (litre/ cow+year)	Eggs (eggs/hen+year)	Wheat yield (dt/ha)	Maize yield (dt/ha)	Potato yield (dt/ha)
BH	2,420 (97)	182 (00)	32.0 (98)	33.0 (98)	90.0 (99)
Croatia	2,090 (99)	n.a.	55.6 (99)	32.9 (99)	115.0 (99)
Slovenia	2,950 (99)	213 (99)	39.5 (99)	62.7 (99)	184.0 (99)
Republic of Yugoslavia	1,732 (98)	108 (98)	31.7 (99)	48.3 (99)	74.0 (99)
Hungary	5,322 (99)	203 (99)	35.9 (99)	63.6 (99)	183.5 (99)

Source: Own compilation based on ZMP data 2000 (inaccuracy of statistical data is possible, e.g. milk output in Croatia is presumably not lower than in BH.), data on egg production are for FBH (year 2000, from Statistical Office FBH)

From 1998 until the start of 2000, the Agricultural Market Information System (AMIS, financed by the EU) collected, edited and disseminated price information on fresh produce on selected markets in the North Western region of the RS and the FBH. After donor finance ran out, the responsible agricultural ministries did not continue the system. Thus, no regularly collected price data are available for 2000/2001.

Wheat: Yields in wheat production in BH and the Republic of Yugoslavia are low, with 32 dt/ha compared to 35-55 dt/ha in other countries in the region. The yields of maize/corn production are merely 33 dt/ha, far below the average yields of 50-65 dt/ha in Hungary, Slovenia and the Republic of Yugoslavia.

Milk and meat products: As in Croatia, the Republic of Yugoslavia and Slovenia, milk production in BH is 2,400 litres per cow a year, which is very low in comparison to almost 5,000 litres per cow in Hungary, 4,000 litres per cow in Slovakia or even more than 10,000 litres per cow in Western Europe. Milk prices in the FBH and the RS are not the same: in the FBH, a minimum price was introduced which corresponds to 45 Pfg/litre (12.5 Pfg/fat unit plus a bonus for delivery to officially recognised dairies). This premium is now only paid to farmers that deliver more than 300 litres per month, and it is adjusted according to the altitude of the production area.

In the RS, milk prices are determined by the market and are about 43-47 Pfg/litre (approximately 10-11 Pfg/fat unit in 1999 plus a bonus of 7 Pfg/ litre milk for private farms). Costs of milk collecting are about 7.5 Pfg/kg compared to 1 Pfg/litre in the EU. Domestic production plus collection costs amount to more than 59 Pfg/litre, whereas raw milk from Slovakia can be delivered to BH dairies at 39 Pfg/litre (production and collection costs) plus 1 Pfg/litre (transport costs).

Domestic production costs in **bull fattening** amount to 3.50 DM/kg live weight compared to an import price of 2 DM/kg plus duty = 2.70-2.80 DM/kg (according to interviews with meat processing companies, 2001). Production costs for eggs and broiler meat are also still very high in BH, which is presumably due to the price and quality of feed and chicks. The egg production per layer lies below the potential 280-290 eggs per annum. Feed costs constitute 75% of the total production costs, which are about 10.5 Pfg in the FBH and 8.8 Pfg in the RS (1999), the difference resulting from the different cost of animal feed. Only marginal or negative profit margins can be reached, as the wholesale price for eggs is about 10-15 Pfg/egg (1999). Broilers are sold at wholesale prices of 2-3 DM/kg (1999), meaning that production once again only generates small profit margins, as feeding costs alone amount to 2.18 DM/kg of slaughter weight (calculation by USAID, 1999). Domestic production can hardly compete with imported chicken meat (fresh and frozen), which was sold at average prices of 1.88 DM/kg at the start of 1999.

Fruits and vegetables: In BH, the orchards are mostly old, and are thus not as productive as younger plantations and modern varieties. Currently, there are no productivity data available for fruit and vegetable production. Potato yields of 90 dt/ha in BH are far lower than yields in Hungary and Slovenia of 180-185 dt/ha.

2.3 Food industry

The following analysis of the food industry is mainly based on data from studies of the GTZ Agricultural Sector Support Project (1999), USAID (1999a and b), USAID (2000), SEED/IFC (2000), as well as on interviews with processing companies and traders in June 2001.

In annex 1, a list of processing companies is presented (the list is not assumed to be complete).

2.3.1 Mills and bakeries

Before the war, there were 18 large-scale state flour and feed mills with relatively modern equipment, providing a capacity of 455,000 tons of wheat per year. The output of the two corn mills and twelve animal feed mills amounted to about 250-300,000 tons of feed of which half was poultry feed. Today there are **14 large-scale and 6 smaller, private flour mills**. Many milling companies produce both flour and feed, but there also about some 20 specialised feed mills (e.g. Posavina Koka in FBH). The processing capacity of these flour mills is estimated to be 520,000 tons of wheat per year with an utilisation rate of approximately 65% in 1999. As there was hardly any war damage to mills in the RS, the current milling capacity is adequate. However, the capacity utilisation of feed mills in FBH is merely 11% of the current capacity, totalling about 212,000 t.

Before the war there were 20 large-scale **bakeries** as well as a great number of small private bakeries in the cities. Bakeries are sometimes directly connected to mills, such as the large semi-private company Klas in Sarajevo. Besides bread, cakes and pastries, some of the large-scale **bakeries** also produce frozen pastries that are partly exported (to the Croatian

coast, to the USA, to Switzerland and Russia). Most small companies produce mainly bread for the surrounding area; only a few of them produce diversified pastries.

2.3.2 Dairies

Before the war, there were six large state owned dairies in operation. They produced mainly pasteurised milk, whereas cheese was mainly produced by private farms and companies and sold on local markets. Today, there are **about 30 dairies** with a theoretical capacity of approximately 200 million litres, although this capacity is only 30-40% utilised (about 70-80 million litres). Since 1998, several dairies have produced UHT milk (e.g. dairy Sappit on the basis of milk powder, and dairies in Banja Luka and Tuzla). Most of the larger-scale dairies are still state-owned, have enormous financial problems, and often fulfil their payment obligations months later. That is why they are often only supplied by state-owned dairy farms, whereas small-scale farms prefer to deliver to the new, private dairies. Some of the small private dairies have developed their business with financial support from foreign aid programmes. They mostly produce pasteurised milk in tubular bags. However, this packaging makes the milk highly perishable if not kept in cooling facilities. Yoghurt and fresh cheese is mostly produced in private dairies. Only a small range of local cheese is produced in BH (e.g. Kaimak, Travnik Cheese and Trappist), and other cheese products are rarely produced in BH. Since small dairies do not produce any special products, they might face problems in the future to compete with larger privatised dairies.

2.3.3 Slaughterhouses and meat processors

Before the war, there were more than 200 slaughterhouses, of which about 60% were privately owned. Larger meat processing companies as well as poultry slaughterhouses were mostly owned by the state. Some slaughterhouses were extremely damaged during the war and were, therefore, closed, while other slaughterhouses continued to operate. Some 20 new slaughterhouses and/or meat processing enterprises were established during and after the war. Today there are about **30 medium-sized or large slaughterhouses plus a great number of smaller enterprises**.

Some of these slaughterhouses operate according to high quality standards, but face an under-utilisation of their capacity, presumably due to the fact that some of the smaller companies slaughter non-registered, imported animals without being strictly controlled. Most slaughterhouses are used to slaughter cattle and poultry, and four companies have installed modern, specialised equipment for the slaughtering of chickens (in Tuzla, Zivinice, Srbac, Sarajevo). Slaughtering both cattle and pigs is rarely carried out within one company. There are **about 20 meat processing companies** in BH. Their major products are sausages, salami, ham, and smoked meat; however, the product range is not wide. The company Lijanovici dominates the domestic market (according to their own estimates they serve 60% of the market) and also exports high quality ham to other South East European countries. Export to the EU is not possible as there is no state authority for meat certification, and none of the slaughterhouses holds EU-certification.

2.3.4 Fruit and vegetable processors

Before the war, there were 18 state-owned processing companies for fruit and vegetables located in the production regions along the Sava in the North as well as in the Mediterranean region in the South. Fruit products constituted about 85-90% of all processed fruits and vegetables. Potato processing was rare. Today, there are approximately **20 fruit and vegetable processors** in BH. Some private processing companies were established after the war, and have positioned themselves well on domestic and foreign markets. The largest processing companies are the private company Vegafruit in the FBH (10,000 tons of processed products per year, 100% capacity utilisation) and the state-owned company Vitaminka in the RS (capacity of about 20,000 tons, production in 2001 estimated at 4,000 t). Fruits and vegetables are either delivered by contract farmers in the region, produced by the processing enterprises themselves, or imported (e.g. special pepper varieties from Macedonia). The main processed products are fruit juices, jam, pickled vegetables, typical local vegetable pastes (e.g. pepper-based Ajvar), ketchup, but also frozen vegetables or mixed vegetables. Some private companies have specialised in the **production of snacks** (e.g. maize flips or potato chips in 30 or 33 g bags).

2.3.5 Other processing companies

Before the war, there was one large-scale state-owned processing company (Hepok) near Mostar containing, among other plants, a winery and a distillery with a capacity designed to process large quantities of raw material from all over Yugoslavia. Similar companies with very large capacities were the oil mill in Brcko and the sugar factory in Bijeljina, and a factory for the chemical processing of maize in the RS. The capacities of these companies far exceeded the domestic raw material supply. Today, they work at strongly reduced capacity utilization, because both import and processing cannot be carried out at internationally competitive prices. Therefore, these large companies are in a difficult situation. The Hepok winery has worked at only 10% of its capacity, for example. They still face enormous marketing problems in spite of the financial support provided by the EU in 1996 for the rehabilitation of the irrigation infrastructure and the winery itself. The quantities stored at Hepok (3.5 million litres in June 2000) already exceed the domestic demand in BH, which is estimated (by Hepok) to be about 3 million litres. The processing of oil seeds in the oil mill in Brcko has dropped from 60-70,000 tons per year before the war to 10,000 tons/year after the war, as importing oil seeds still poses a logistical problem.

Even before the war (1990-1992), the Bosnian domestic sugar market was disturbed by sugar imports half the price of domestic products (0.6 DM/kg compared to 1-1.2 DM/kg), which led to high financial losses at the local sugar factory, and its closure before the war. The sugar factory was not damaged during the war, but it cannot compete on the market, especially as world market prices are today even lower. The maize processing enterprise HPK in Draksenic has a processing capacity of about 50,000 tons. Before the war, most of the raw material was imported from Serbia and Hungary, and also from France. Today, this plant is also closed.

The in Sarajevo and Tuzla have already been privatised successfully, and their turnover seems to be developing well. Other companies have specialised in the production of **soft**

drinks. They buy concentrates from abroad and add local water to them. BH has some of these enterprises (Golden Metro, Coca Cola, Sinalco). There are one or two larger **coffee roasting companies** that process coffee beans imported from overseas. Before the war, there were several larger state-owned candy producers (e.g. UPI Zora, MIRA); nowadays, there are also some private companies producing chocolate, 'kinder' surprise eggs, etc.

2.3.6 Processing regions

Dairies are mostly in production regions (milk collecting points in Bihac, Banja Luka and Tuzla), as are fruit and vegetable processors (near Mostar, and along the Sava). Slaughterhouses and meat processors are partly located near consumption centres, and partly near production sites. Mills, bakeries, breweries and soft drinks factories are mostly located close to big cities.

2.3.7 Problems mentioned by food processing companies

The problems mentioned by the interviewed processing companies in the food industry can be divided into ten groups: purchase of raw materials, competition, financial problems, the slow procedure of privatisation, low domestic demand, quality management as well as packaging & marketing, outdated equipment, infrastructure & transport as well as insufficient government support.

1. Raw materials: Many processors are faced with insufficient raw material supply in the country or in the relevant catchment areas (e.g. milk). As the main reason, the enterprises name **the low productivity of primary production**, the related small output, and high production costs. According to the interviewed processing companies, this is due to the small-scale structure of agricultural production, insufficient capital for investments into modernisation, insufficient state support for primary agriculture, insufficient business orientation of the farmers and an unwillingness or inability to take high risks. However, the state-owned processing companies often pay very late, thus giving farmers little incentive to deliver to them. Some of the raw materials have to be imported, but import duties (including Prelevmani) on some products are very high. Another problem is the often-insufficient working capital (especially of state-owned companies) to purchase raw material.

2. Competition: A further problem mentioned by interviewed food processors is the growing competition from:

- (a) cheap imported products. Cheaper prices are partly due to the large amounts of unofficially imported products (i.e. without paying import duties) on the domestic market, partly due to subsidies provided by other countries to their producers and exporters (e.g. the EU, Hungary, Slovenia);
- (b) intensive marketing for imported products (e.g. fruit juices, vegetables, milk products, snack food),
- (c) unfair competition from companies that do not follow all the rules and regulations concerning import, veterinary, hygiene and sanitary requirements, and can, thus, offer their products at lower prices, while damaging the image of domestic products at the same time.

3. Financial and liquidity problems: On one hand, some enterprises have had to use their finances for the reconstruction of damaged buildings; on the other hand, many enterprises have little capital of their own to invest due to low profit margins. Furthermore, companies are suffering liquidity problems due to the low payment ability and morale in the local economy. Therefore, a major part of business in BH is carried out on the basis of compensation agreements (barter trade). The interviewed enterprises complained about insufficient long-term loans for investments in the food industry as well as for primary agricultural production.

4. Slow privatisation of state-owned companies (farms and processing facilities) and lack of incentives for domestic and foreign investors: Productivity in the state-owned companies is low and they have not been invested in for 10 years. The management in so-called 'strategic' state companies is appointed by the government, which means that staff are often changed, and staff selection is not always based on competence criteria. The partially conducted privatisation through vouchers/certificates has led to a large number of shareholders, which makes decision-making often more difficult. State companies and privatised companies have high expectations concerning foreign direct investments, but they have only recently acknowledged the fact that companies have to actively make themselves attractive to potential buyers.

5. Low demand for domestic products: On one hand, the demand for food products has decreased in general due to the decrease in population and weak purchasing power; on the other hand, the image of local products among the local population is still rather bad when it comes to quality, appearance and packaging.

6. Quality management and packaging/marketing: The awareness of enterprises concerning quality management, modern packaging and marketing activities has developed gradually. Enterprises are becoming more and more aware of the necessity of these marketing aspects by observing the success of enterprises (e.g. from abroad) that operate with more intensive quality management and marketing. Nevertheless, these companies still lack the financial means and the know-how to follow these examples.

7. Outdated equipment: The processing and packaging equipment of many companies does not correspond to modern standards concerning productivity, standardisation, quality, durability and appearance. Only a few companies have been able to invest in new machines and equipment with assistance from international projects (e.g. USAID, EU).

8. Lack of infrastructure, transport and storage: In BH, there are still very few functioning railway connections. Furthermore, there are not enough cold storage trucks and transporters for livestock, and there are still insufficient cooling chains from production to trade and, finally, to the consumer.

9. Insufficient support from the government(s): The interviewed larger-scale processors are calling for new laws and regulations concerning **food safety control** as well as for more intensive import, food and sanitary controls by the state in order to protect the domestic market against unfair competition and to restore public confidence. Many processors are also unsatisfied with the **additional import duties** levied on raw materials and with **the insufficient support given to local primary production**. According to interviewed companies, complicated bureaucratic **procedures** also hinder investment.

Furthermore, the interviewed companies complained about the **unclear responsibilities** between ministries and authorities on different levels (state, entities, cantons, districts, municipalities). The differences between the entities (in the FBH and the RS) in milk pricing as well as in taxation and other areas are aggravating this situation. The companies also mentioned the **insufficient co-operation** between the ministries of agriculture and industry.

2.4 Other products needed

Before the war, **agricultural inputs** were imported from other regions of former Yugoslavia, above all from Croatia and Serbia (except for mineral fertiliser and some wheat seeds and seed potatoes). After the war, the demand for agricultural inputs dropped due to decreased plant and animal production, and because of the more difficult access to seasonal credits. Though most inputs were imported from ex-Yugoslavia before the war, imports are now also taking place from the EU (machines, equipment, breeds, seeds, plant material, plant protection chemicals and veterinary products). There are no import duties and no price control systems for agricultural inputs. However, the import of seeds is difficult due to the lack of an agreement on the recognition of EU seeds, which could render the long certification procedure in BH superfluous.

Other ingredients for food processing are mostly imported. In BH hardly any local ingredients are used for food processing except salt (which comes from the salt factory in Tuzla) and water (from respective regions). Sugar is imported from Slovenia, Germany and the Czech Republic. Additives, spices, and concentrate for soft drinks, raw materials for the production of PET bottles, **machinery and equipment** for processing and packaging are all imported from the EU.

Storage capacities for raw materials and final products are available in large state-owned or privatised processing companies, some of them outdated and/or not functioning or partly destroyed during the war. The storage capacities are often too large, and are partly rented out. Smaller private companies have either invested into smaller storage capacities or have rented small warehouses. At present, raw materials are generally stored at the processing companies. However, increasing competition for delivery contracts to processors could lead to a situation where farmers or wholesalers will have to store the raw material themselves.

Transport: Transport of goods is predominantly carried out by truck. Most transport routes are not long, but take time due to the mountainous landscape. The railway net has not yet been completely revitalised. Since 1999, the railway between the port Ploce (Croatia) and Sarajevo has been operating, and in summer 2001 the connection between Sarajevo and Zagreb reopened. The big state companies as well as private companies often have their own fleet of vehicles, and rent additional trucks. For BH companies, it is not easy to obtain a licence for international transport, as BH is not yet a member of the international transport organisation. Furthermore, there are not enough cooling trucks, or trucks for livestock transportation. Overseas exports use Croatian ports. According to the interviewed processors, the rent for a 24 ton truck costs (all inclusive) 900 DM for a one-way journey and 1300 DM for a return trip from Brijesnica Mala to Zagreb (approx. 250 km). Other companies pay 980 DM/20 t and 250 km. Thus transport costs amount to about 0.10-0.20 DM/per km

and ton. The rent (all inclusive) for a cooling truck for milk costs about 600 DM/25 t and 180 km (i.e. 0.133 DM/per km and ton).

Packaging and advertising material: There is no glass industry in BH. Glass is imported from Croatia, Serbia and Hungary. No collecting system for bottle recycling exists, but often glasses and bottles are reused in private households. Glass seals are imported from Austria and Croatia. Tetra-pack is imported from Serbia or Sweden. Glass and tetra-pack are charged with 10% import duty. Fruit and vegetable tins are not produced in BH and are not used in industry; all canned products are imported. Packaging for cakes is imported from Slovenia. Aluminium coated bags for potato chips are partly imported from Croatia. Cardboard packaging is locally produced. However, some national PET companies specialise in the production of plastic bottles and polyethylene containers (PET). Vegafruit (FBH), for example, produces 18 million units/year and Golden Metro (RS) 3 million units/year. Plastic bottles and PET containers are predominantly used for vegetable oil containers, syrup, soft drinks, and mineral water and partly for milk. The packaging design and advertising material are often developed by the companies themselves, and are handed over to either local marketing companies, graphic designers and printing enterprises, or to Serbian and Croatian companies.

Packaging material	Prices
Glass	0.27 DM/ 1 litre bottle (0.30 DM /720 g glass)
Tetra Pack	0.25-0.30 DM/ 1 litre package
PET, transparent	0.15-0.16 DM/ 1 litre bottle
PET, white for milk	0.17-0.18 DM/ 1 litre bottle

Source: Interviews with processing companies, June 2001

Trends in packaging have seen increased demand for glass bottles because of food purity; and more variation in packing sizes, i.e. smaller dimensions (0.2 litre juice, 0.5 litre milk, <500 g glass marmalade).

2.5 Overview of the input-output relations

In the following, a general overview of the five sub-sectors is presented. Due to the lack of data, a detailed input-output matrix with quantitative data on inputs, consumption and import cannot be prepared at this stage. The following overview shows which inputs are used for each of the product groups (sub-sectors), e.g. wheat, yeast and additives for the production of bread and bakery products, which are then packed in paper material, plastic bags and/or cartons.

Survey 3: Overview of input-output relations

Output	1. Flour, bread, pastries	2. Milk, milk products	3. Meat, meat products including poultry, fish, eggs	Processed fruits and vegetables	5. Others (beer, wine, brandy, tea etc.)
Inputs					
Plant production	Wheat (partly fruits for cakes)	(partly fruits for yoghurts)		Fruits and vegetables	cereals, hops, grapes, herbs etc
Animal production	-	Raw milk	Meat, eggs, fish	-	-
Additives (including sugar, spices)	Yeast, additives	Bacteria cultures	Salt, sugar, spices	Salt, sugar, vinegar, spices, flavourings	
Packaging material	Bags, paper material, cardboard	Glass, plastic	Plastic (vacuum packed), cardboard, egg boxes	Glass, plastic, tins	Barrels, glass, plastic

Source: Own compilation

2.6 Meso level (institutions, organisations, service providers)

The following analysis of the meso level is divided into: policy and administration, food safety control, business interest groups, education and vocational training, research, advisory services, information and finance systems, as well as donor co-ordination.

Policy and administration

As BH has consisted of two entities since the Dayton Agreement, and as a further special arrangement has been developed for the district of Brcko, the current institutional system is quite complicated. On the state level, there are ministries in the areas of finance, foreign relations, European integration, civil rights and refugee affairs, foreign trade & economic relations, civil affairs & communication. On the entity level, there are ministries of industry, agriculture, health and finance. Furthermore, there are ministries in each of the 10 cantons of the FBH, plus the ministries in the district of Brcko. This results in a state of institutional 'chaos' with unclear responsibilities, the inability of the state to act in some areas, and to public positions being filled according to ethno-political rather than competence-related criteria.

In both entities, the ministries of industry are responsible for the food industry, whereas the ministries of agriculture are responsible for primary production. According to interviewed government representatives, the ministries of industry and of agriculture co-operate to some degree; however, the interviewed processors do not see a lot of co-operation among them.

Relevant ministries	Relevant responsibilities for the food sector
Ministries of Industry of the entities	responsible for the food industry; for the industry's economic framework conditions
Ministries of Agriculture, Forestry and Water Supply of the entities (MAFW)	responsible for primary agricultural production, for food control (with regard to ingredients, in particular in meat)
Ministries of Health of the entities	responsible for hygiene and sanitary regulations and their implementation
Ministry of Foreign Trade at state level	responsible for trade policy and regulations,
Ministry for European integration at state level	reduction of trade barriers within BH, creation of a single economic zone

An adjustment of additional import duties (Prelevmani) can be suggested by various ministries or the Chambers of Economy. The general approach is to impose higher duties on those products that can also be produced inside the country. The Ministry of Industry estimates, for example, the domestically produced quantities. Duty adjustments have to be agreed upon by the two Ministries of Industry, two Ministries of Agriculture and the Ministry of Foreign Trade at the state level, and must then be jointly proposed. Only upon the agreement of all these ministries can suggestions be introduced in the Council of Ministers at the state level, where the decision is finally taken. This procedure lasts about 6-12 months. In particular the decision-making process between the two entities is quite difficult due to their differences in production structures and, therefore, differing interests. A new law on import duties is in preparation, aiming to convert the general import duty and the additional import duty (Prelevmani) into one combined tariff without significantly changing the total duty. Since 1997/1998, the project CAFAO (Customs and Fiscal Assistance Office), financed by the EU, has supported BH in customs policy and administration as well as in strengthening tax-collecting systems. According to a representative of CAFAO, the import taxes can hardly be changed in the future as BH has applied for membership in the World Trade Organisation (WTO) and is, therefore, not allowed to change its rates until it is a member.

Main constraints in the areas of policy and administration:

- Separation of the responsibilities for primary agriculture and food processing
- Difficult agreement process between ministries and authorities at state and entity levels (e.g. concerning trade regulations, statistics)
- Insufficient co-operation and unclear division of tasks between the Ministries of Agriculture and the Ministries of Health concerning food safety control
- Administrative impediments and unclear division of tasks between the state level, entities, cantons, district of Brcko and municipalities

- Insufficient number of qualified staff (emigration of well educated inhabitants of BH, staff selection for public institutions according to ethnical, religious and political affiliations)
- Unclear definition of roles and tasks between private and public sector.

Food safety control

So far, there has been no central policy for food safety control, and there is still no decision from the Council of Ministries on the proposed food safety law. The present law on food safety control is still the one from former Yugoslavia. State certificates are needed for the export of animal products (meat, milk, fish, etc.) to the EU. Meanwhile, a national veterinary office has been established, but it has only three staff members, and still has insufficient financial and political power. The Public Health Institute at the state level is authorised to control food safety. Furthermore, there are some similar institutes in both entities and in the cantons in the FBH. Since not all of these institutes have sufficient laboratory capacities, other laboratories can also be contracted for testing.

Institutes and inspectors	Tasks
Veterinary Institute of Banja Luka, Veterinary Institute at Veterinary faculty in Sarajevo, and other smaller Veterinary Institutes (Tuzla, Mostar, Zeneca)	Quality control of animal products and feed (ingredients, e.g. undeclared pork or kangaroo meat, radiological contamination)
Agricultural Institutes (Sarajevo, Banja Luka, Mostar)	Quality control of cereals and other plants (including fruits and vegetables as well)
Hygiene Institutes	Control of sanitary conditions in production and trade
Veterinary and phyto-sanitary inspectors (MAFW)	Product samples taken at the border, in the production chain, in shops or restaurants (and delivered to the above mentioned institutes)
Sanitary inspectors (Ministries of Health)	Inspection of production, processing and sale sites.

The institutional network for food safety control is widely scattered. On one hand, there are authorised institutes that are allowed to issue certificates for export to other Balkan countries, and also offer testing as a paid service for enterprises. On the other hand, there are laboratories that only test when requested by enterprises. According to interviewed government representatives, there are about 10 laboratories, of which only 2-3 work intensively at present. Many activities overlap and responsibilities are unclear. Moreover, there is no modern standardisation and insufficient technical equipment, e.g. for testing for dioxin, MCE and BSE. At present, no regulations for minimum equipment and staff requirements of laboratories exist, and it is not even clear which ministries should decide upon such regulations. At present, inspections are carried out only rarely. One reason for this is that inspectors who send product samples from shops to a laboratory for testing have to pay for it if the results are negative. As the inspection authorities only have small budgets, they usually prefer to avoid that risk.

So far, no organisation exists in BH to certify biological products. Within the framework of 'SIPPO' (Swiss Import Promotion Programme), Swiss Co-operation, together with GTZ, is trying to see whether certifying organic medicinal and aroma plants by international

organisations is possible. Since summer 2001, the Swedish Co-operation agency SIDA has been financing a project to establish a local certification body.

Interest groups

- There are various associations of large-scale food producers and processors, which are mostly linked to the Chambers of Commerce. These consist of:
- The Dairy Association,
- The Association of meat producers and processors,
- The Association of fruit and vegetable processors (4-5 members),
- The Poultry Association (a quite active association),
- The Association of wheat and flour producers (an independent association financing its own office in Sarajevo, with 4-5 employees, out of membership fees).

Most of these associations are still weak in comparison to Western European associations when it comes to lobbying the government, exchanging information (e.g. about current market developments), and common activities (e.g. in joint marketing or a joint glass collection system). Associations at the state level are starting to emerge. The structure of these associations is still different in the FBH and the RS due to different legal regulations. The creation of associations at the state level is still difficult as adequate state regulation is missing.

Farmers' organisations: Production and marketing co-operatives have a tradition of 120 years in BH. From 1950 to 1990, they were integrated into the socialist system. After the war, various donor organisations supported the restructuring of existing co-operatives and the establishment of new types of farmers' organisations and associations.

Chambers of Commerce are at state, entity, cantonal (10 in FBH) and regional levels (5 in RS). The Chambers of Economy at the state level consist of four units: (i) department for foreign trade, (ii) department for information systems, (iii) Education Institute, and (iv) Agency for Logistics. At the entity, canton and regional levels, there are some specialists, for example for the food industry. The Chambers of Commerce disseminate information (e.g. brochures on BH as a business partner), support the organisation of fairs in BH, and facilitate visits to and participation at fairs abroad. They also provide management training, requirements for external trade, quality norms etc. The Chambers of Commerce organise associations of producers and processors, and can, thus, be a bridge between the public and private sector. However, during the interviews many enterprises mentioned that the Chambers of Commerce are still over-connected to the government, and are not very active in supporting private businesses.

The development agency EG Tuzla, which is financed by the GTZ and the EU, has also had good experiences in co-operating with the local Chamber of Handicrafts. The role of the Chamber is to be a partner in the political dialogue and to offer services such as vocational training and support for the start-up and registration of small enterprises.

Education and training

After 8 years of primary school, students can attend **secondary schools** that are partly specialised, e.g. also in the agricultural sector. These secondary schools mostly provide only

theoretical knowledge. **A practical vocational training system does not exist.** Short training courses for adult employees and managers are organised by the Chambers of Economy and Handicrafts, as well as by various projects (e.g. GTZ Agricultural Sector Support project, SEED/IFC, EU)

Universities teach students about food technology, food safety control, veterinary science and agriculture. The EU supports two modern courses for food technology and food control at the Faculty of Technology in Banja Luka. Within the framework of the TEMPUS-Programme, the Faculties of Agriculture have also been supported in the reorientation of their programme. There are **no special marketing courses or studies**, and students can only enrol for this subject when studying economics.

Research

There are several institutions (many of them located at universities in Sarajevo and Banja Luka) that could carry out research in the areas of agricultural production, processing, and food technology and food safety control.

Relevant research institutions	Relevant areas
Veterinary Faculty in Sarajevo (FBH)	Food hygiene and food technology, poultry diseases and technologies, environment control, cattle farming, fish diseases and technologies
Agricultural Faculty, Sarajevo (FBH)	General agriculture, agro-economy, food technology
Agricultural Faculty, Banja Luka (RS)	General agriculture
Faculty of Technology in Banja Luka (RS)	Food technology, food safety control
Agricultural Institutes in Sarajevo and Mostar (FBH) and in Banja Luka (RS)	Plant production, fruit and vegetable production, food control, certifying of seeds
Faculty of Sciences, Sarajevo (FBH)	Department of fish science
Faculties of Economics*, Banja Luka (RS), Sarajevo (FBH), District of Brcko	Economics, management and marketing
Institute for Gene Technology, Sarajevo (FBH)	Gene technology*

Financial constraints are common in all these institutes. The equipment is often outdated, and most research activities were interrupted by the war. After the war, some equipment was bought with financial support from donor organisations, but the equipment is now rarely used due to unaffordable running costs. There is also a lack of specialised academic staff for modern subjects like marketing, agricultural economy, EU laws, EU quality norms, and there has been a strong emigration of young educated people since the war ended (between 1996-1998, about 42,000 highly qualified people left the country (USAID 2000)).

Extension and advisory services

After the war, some of the food processors received advisory services from USAID, particularly in the scope of loan provisions. Other advisory services are mostly carried out by

donor projects (GTZ-Agricultural Sector Support and Privatisation Support projects, PSO-Program of the Netherlands, IFC/SEED). Currently, no local institution or consulting company exists for business management, technical or marketing advice. **The governmental extension service for agriculture** has been more or less inactive both before and since the war. At the beginning of 2001, a two-year EU project was launched to support an extension service, which is supposed to become financially autonomous in the long term. But the willingness of small-scale farms to pay for extension services is rather limited (as in many other countries). Veterinary services are an exception. There are 120 state-owned veterinary stations, and about 20 private veterinary practices (only in the RS). Farmers are willing to pay for veterinary services that are linked to the delivery of medicines, vaccines and sperm.

Information services: The processing enterprises obtain market information mostly from wholesalers and distributors, as well as partly from their own associations and the Chambers of Economy. Only a few large enterprises (e.g. Lijanovici) engage in their own market research. Information on legal regulations is taken from the Official Gazette. Statistical offices are responsible for data on production and trade, but the reliability of the information is still limited according to the interviewed companies. At present, it is difficult to obtain up-to-date, standardised and complete data. This is the result of unclear responsibilities between the statistical offices and agencies and the still outstanding transformation of these institutions into modern information services. Information available should be used cautiously, because data on small-scale production are often not collected and unofficial trade is not recorded at all. From 1998 to the beginning of 2001, price data were recorded within the scope of the Agricultural Market Information System (financed by the EU), but once the external financing ended, the system was not continued.

Finance services: State-owned agro-complexes and co-operative farms had access to seasonal loans at favourable interest rates in the socialist system. The large number of private small-scale companies hardly had any access to credits. After the war, mainly USAID and the EU provided funds for private businesses, including agriculture and agribusinesses among others. Meanwhile, many donors support credit projects (e.g. EU/KfW, USAID, USDA, SIDA, UNDP, World Bank) that can also be used for agricultural and food processing activities. These projects are implemented through local banks or local NGOs (e.g. World Vision/EKI). Nevertheless, often small-scale farmers cannot meet the collateral requirements, and there are still few long-term credits with longer periods of grace, which are, for example, necessary for fruit and grape production.

Donor co-ordination: After the war, various donors established an Agricultural Task Force. However, there is no longer any institutionalised donor co-ordination in this area. The various EU projects in the agricultural and agribusiness sector are co-ordinated by the Delegation of the European Commission in Sarajevo, and a regular exchange with the GTZ-Agricultural Sector Support Project is in place. In the Office of the High Representative (OHR), the position of the agro-economic advisor was not occupied until recently. Till now, it is not yet clear whether OHR will lead the co-ordination activities, or if these will be co-ordinated by one of the international development organisations such as the EU or the World Bank. In the long run, it is desirable that the ministries themselves take over the co-ordination role. However, this will require the strengthening of their personal capacities.

2.7 Trade structures

The following information is derived from an USAID report (2000) and from interviews with processors, local experts and a trader. As in other South East European Countries, the willingness of wholesalers to take part in interviews for a general study is very limited. Therefore, again hardly any wholesalers were interviewed directly during this study.

Most wholesalers of food products (35 are listed in the USAID study) trade in both domestic as well as imported products. They have their head offices mostly in Sarajevo, Banja Luka and Bihac. Due to the large demand for imports, many wholesalers are importers at the same time. The industry estimates that approximately 20 companies handle 90% of the wholesale trade in food products.

Sale of locally processed products

- large processing companies often sell their products in their own retail shops (mostly in big cities as well as near the factory), although also to supermarkets, wholesalers and large consumers (e.g. hotels, restaurants),
- small processing companies mostly sell their products to wholesalers and retail traders as well as to consumers in their immediate environment (from the factory, perhaps in their own shops, or directly delivering to traders),
- Importing companies that also produce locally have established partnership contracts with a small number of distributors and supermarkets (e.g. Meggle).

Trade in imported goods

- A foreign company (e.g. for milk, meat, fruit juices) has representative offices in BH, i.e. as an exclusive distributor for other wholesalers and retailers.
- A local importer (e.g. for fresh fruits) organises imports from various countries, often acting as a wholesaler directly selling to other wholesalers or retailers. In BH there are about 3-4 large fruit and vegetable importers (e.g. Vocepromet)
- Some wholesalers and retailers operate near the borders, which are often part of the so-called unofficial "grey market" trade (e.g. livestock, meat, flour).

Retail trade: Since the end of the 90s, some hypermarkets and supermarkets have been opened, mainly in Sarajevo. Large supermarket chains are: VF Commerce (WISA), Mercator (Slovenian), Interex and AS. Hypermarkets consist of not only a supermarket but also host smaller shops (e.g. for clothes), restaurants and cafes. So far hypermarkets have been built in Sarajevo by WISA (2) and Mercator (1), and supermarkets are found in most big cities. Beside supermarkets, there are a great number of smaller private retailers in the cities and partly in residential areas. Up to now, not all retailers possess cooling facilities; this represents a limitation in the cooling chain. Therefore, long-lasting food is still preferred.

Furthermore there are open markets where mainly fresh fruits and vegetables are sold, as well as milk and meat products. The open markets located close to the border are also very important for the wholesale and retail trade, and are partly used for unofficial trade (e.g. Arizona Market in Brcko, livestock market in Bijeljina). Apart from the uncontrolled external trade, the insufficient professionalism in logistics and wholesaling are still major constraints for the trade structure.

2.8 Systemic competitiveness of the food sector in Bosnia-Herzegovina

Meta level: The conditions at the meta level are not very favourable in BH, as the political situation still appears to be difficult and unstable with the two quite independent entities and the District of Brcko. There seems to be no clear vision for all of Bosnia-Herzegovina, and the development efforts of various decision-makers often diverge. This political and economical uncertainty, as well as the negative image of 'the Balkans' as a major 'trouble spot', are major reasons for the lack of direct foreign investments.

Macro level: BH is a relatively small market with only 3.5 million inhabitants with low purchasing power. There is thus more demand for cheap products. Prices have been relatively stable since the currency was linked to the German Mark. A major constraint is the financial state of the country due to the large foreign trade deficit. Unofficial imports pose another major problem, as they lead to fewer payments of import duties, to distortions on the domestic market, to problems with veterinary, phytosanitary and sanitary controls, and can also mislead political and economical decision-makers as official information on trade is therefore not reliable.

Micro level: BH mostly consists of mountainous and forest areas with a lot of permanent pastures and meadows, but little high quality arable land. In comparison to other countries in transition, productivity in the primary agricultural production sector is rather low and, thus, production costs are high. This is partly due to natural disadvantages, partly due to war-related damages, but is also linked to the transition process. Only some primary products are produced at competitive prices in BH. Furthermore, weaknesses are apparent in quality management and marketing.

Nevertheless, local agribusiness companies have the advantage of proximity to the consumers, which is particularly advantageous for products which have to be delivered regularly and/or are quite perishable, e.g. bread, pastries, fruits, vegetables, fresh meat and milk. Companies that are able to compete on the local market still have a chance. Some processors have started organised production (e.g. of fruits and vegetables), and partnerships with distributors and traders in order to integrate the value chain from primary production up to the consumer. But these are exceptions. More often, the relationships between agricultural producers, processors and traders are dominated by distrust and disagreement, whereas contract production is very common in EU countries.

Meso level: There seems to be little co-operation between the different institutions of the food sector. The linkages between public and private institutions are so negligible that they appear to be acting 'in two different worlds'. The processing companies seem to struggle mostly as individuals. Associations and Chambers are still weak and not very active. Local institutions in the areas of education and training, research and advisory services still do not meet modern requirements and suffer from financial and human resource constraints. The public side still appears to many enterprises (and also to the author of this study) to be in a state of 'institutional chaos', with unclear roles and tasks, and a lack of decisions taken to ensure the overall development of the country. In particular, the lack of activities in the area of food safety control represents a systemic competitive disadvantage as this decreases consumers' confidence in local products. In the area of regional co-operation and free trade agreements, BH also lags behind other countries in transition.

3. Market opportunities

3.1 The Local market (BH)

Food demand has decreased, and its structure has changed. The drop in demand is due to a decrease in population by approximately 15% and a decrease in purchasing power by about 40%. The average per capita income of the 3.5 million inhabitants is about 1,800 DM/year. Despite this decline, local production still cannot satisfy demand, i.e. the internal market continues to present great opportunities for local production and supply. But it also must be aimed at meeting the requirements of the consumers, processors, traders, and supermarkets regarding durability, quality, food safety, labelling, packaging, availability and regular supply. In this area, BH still lags behind competitors such as Slovenia, Croatia and Hungary.

The average **consumption of wheat** in BH is estimated at 122 kg/person (USAID, 1999a) or more, and is very high compared to other countries. The total wheat consumption amounts to **500-545,000 tons**. 45% of the flour is used by bakeries, 40% by private households, and 15% by institutions. Short distances to the market and regular delivery is important for perishable bread and pastry products. With increasing purchasing power, the demand for frozen pastries with short preparation time (e.g. frozen pizza or cakes) may increase.

The domestic consumption of **milk** is estimated at **300-400 million** litres per year. People in BH show a large interest in aseptically packed UHT milk (that can be kept at room temperature for 3-6 months) and for durable fermented products. Increased demand is also observed for fruit yoghurts, sour cream, soft cheese and milk in 0,5 litre packaging.

In the former Yugoslavia, the consumption of **meat** was extremely high at 100 kg per person. In 1990, the meat consumption in BH stood at 70 kg per person. After the war, the demand for meat dropped to 30-40 kg/per capita due to decreased purchasing power (USAID 2000). ZMP estimates total meat consumption at 65,000 tons slaughter weight in 1998. According to other information, the total meat consumption (including poultry) could amount to more than **90,000 kg slaughter weight**. The structure of meat consumption has changed, resulting in less demand for expensive beef and lamb, whereas the consumption of relatively cheap poultry has increased by 50%. The BSE and foot and mouth disease crises in 2000/2001 further led to changes in consumption patterns.

Approximately **380 million eggs** are consumed per year. With increasing purchasing power, greater body and health awareness of consumers, combined with better availability of frozen fish, the demand for fish may also increase in the medium to long term.

There are no detailed data on fruit and vegetable consumption. Meanwhile, local consumers have become used to buying brand articles with guaranteed quality. USAID (2000) discovered that imported fruit juices sold at prices up to 25% higher than local juices occupy 85% of the shelves in supermarkets.

At present there are no data available on the domestic demand for alcoholic drinks such as wine, brandy and beer. In BH, a lot of coffee is consumed, and the consumption of soft drinks, mineral water, and candy and snack products has increased since the war due to

better availability and intensive marketing measures. Candy and snack products are mostly imported products, supported by massive marketing activities and offering international standards (e.g. Milka, Twix, Mars, and particular sorts of potato chips).

In June 2001, the prices, labelling and packaging of local products were compared to imported products within the scope of this study (Overview 4). The market survey shows that local products are mostly cheaper, but they are less impressive in terms of labelling and packaging.

Overview 4: Market survey in Sarajevo and Banja Luka (June 2001)

Products	Units	Shops	Local products			Imported products/2		
			Price	labelling / information	appearance/ packaging	Price	labelling / information	appearance/ packaging
milk, UHT, tetra pack 3.2% fat	1 litre	Sup Sar	1.13	good	middle	1.17	poor/good	poor/good
		Ret Sar	1.16	good	middle	1.50	good	good
		Av. BL	1.05	good	good	1.20	good	good
yoghurt 0.2 litre, PVC carton	0.2 l	Sup Sar	0.32	middle	middle/good	0.39	good	good
		Ret Sar	0.30	middle	middle/good	0.42	good	good
		Av. BL	0.45	middle	poor	0.50	good	good
cream cheese (cows' milk) (mozzarella)	1 kg	Sup Sar	6.80	poor/middle	poor	14.66	middle	good
		Ret Sar	9.38	poor/middle	poor	11.45	poor/middle	middle/good
		Av. BL	10.00	poor	poor	10.50	middle	middle
beef fillet	1 kg	Sup Sar	10.55	middle	middle	12.73	good	middle
		Ret Sar	11.53	middle	middle	n/a		
		Av. BL	11.00	poor	middle	n/a		
porc ham/fillet	1kg	Sup Sar	11.45	middle	middle	13.00	good	middle
		Ret Sar				n/a		
		Av. BL	7.00	poor	middle	n/a		
poultry	1 kg	Sup Sar	6.90	middle	middle	10.35	good	good
		Ret Sar	6.74	middle	middle	9.70	good	good
		Av. BL	4.50	middle	middle	5.50	good	good
fruit juice (here: strawberry) (here: apple)	1litre	Sup Sar	2.24	middle	middle	2.82	good	good
		Ret Sar	2.48	middle	middle	2.94	good	good
		Av. BL	1.55	middle	middle	2.00	good	good
jam, glass (here: mix) (here: strawberry) 850 g	890 g	Sup Sar	2.83	middle	good	4.83	good	good
		Ret Sar	2.84	middle	good	4.94	good	good
		Av. BL	3.00	middle	middle	3.35	good	good
Ajvar (pepper) in glass	700 g	Sup Sar	3.94	good	good	4.40	good	good
		Ret Sar	4.55	middle/good	good	4.64	good/middle	good
		Av. BL	3.30	middle	poor	3.25	middle	middle
Potato chips, In aluminium bag	37 g	Sup Sar	n/a			0.46	good	good
		Ret Sar	n/a			0.48	good	good
		Av. BL	0.60	good	poor	1.00	good	good

Source: Market investigation (not representative) within the framework of this study

(/1 Super Sar = average of 2 supermarkets in Sarajevo, Ret. Av: average = 5 retail shops in Sarajevo; Av. BL: average of 2 supermarkets and 5 retail shops in Banja Luka)

(/2 Imported products: Milk from Slovenia, Croatia, Hungary; yoghurt from Slovenia, Croatia; cheese (mozzarella) from Slovenia, Croatia, Germany; meat from Slovenia, fruit juices and jam from Slovenia, Croatia and Hungary; potato chips from Hungary and Austria)

A major problem is the packaging of local products, which is not as attractive as that of imported products. Sometimes consumers also doubt the quality of local products. Within the scope of this study, 75 consumers were questioned about the differences between local and imported food. In Sarajevo (FBH), 62% see the price of local products as advantageous and 54% prefer the quality of local products, but only 44% prefer the taste of local products. 98%(!) believe that the packaging of imported goods is more attractive than that of local products. In Banja Luka (RS), only 20% regard the prices of local products as cheaper compared to imported ones, but 80% prefer the quality and 72% the taste of local products. Regarding packaging, imported products are considered by 76%(!) of the interviewees as being more attractive.

Locally-produced products that the interviewed persons prefer to buy are: meat and meat products, bread and pastries, fruit and vegetable products, as well as some milk and milk products. Imported goods are preferred when buying candy, snack products, milk and milk products (above all cheese), and drinks, sausages and baby food. Consumers have their doubts about food security as they think of weak food safety controls, while some are also afraid of chemicals and other additives in the food.

The domestic market is protected by **import duties** (since March 1998) **and additional duties** (since September 1999). In the following, a list of current duty rates for various food products is presented. In particular it can be seen that the additional taxes (Prelevmani) are very high, which can therefore be assumed to be one of the primary motivating factors for unregistered import.

Survey 5: Import duties and Prelevmani for selected food products in BH

Products	Import duty (%)	Prelevmani (DM/kg)
01. livestock		
cattle, pigs, sheep, goats	10 (partly 5)	0.50
poultry (up to 185 g)	0	0.20
fowls	10	0.80
ducks, turkey hens	10	0.90
02. meat		
meat (cow), fresh	10	2.40-2.50
meat (cow), frozen	10	1.50-2.00
meat (pig) fresh or frozen	10	
- ham	10	2.00-2,40
- other	10	1.20-1.50
meat (sheep, goat), fresh or frozen	10	2.00
meat (poultry), fresh or frozen	10 (partly 5)	1.50-2.00
meat, salted, dried, smoked	10	2.00-2.50
03. live fish (trout, carp)	10	0.75
04. milk and cream, < 1% fat	10	0.15
3-6%	10	0.25
6-21%	10	0.40
21-45%	10	0.45
milk and cream (concentrated, or with sugar)		

Products	Import duty (%)	Prelevmani (DM/kg)
milk powder, < 1,5 % fat	10	1.00-2.00
milk powder, >1,5% fat	10	0.60-1.00
yoghurt	10	0.30
butter	10	1.00
cheese, fresh and processed	10 (partly 5)	0.80-1.00
chicken eggs	5	0.08
natural honey	5	1.00
tomatoes	10	0.20
cabbage, lettuce, carrots	5	0.10
cucumber	5	0.15
peas, beans and other legumes	5	0.30
grapes, fresh	10	0.15
cherries, plums, peaches	10	0.10
apples, pears	10	0.20
flour (wheat, maize)	10	0.20
grain feed, pellets	10	0.15
meat products and sausages	10 (partly 5)	3.00-3.50
candy (chocolate, goodies)	10	1.00
processed vegetables (in vinegar)	10	0.40-0.50
potato chips	10	1.50
jam	10	1.00
juices	15	0.40
mineral water	15	0.20
soft drinks	10	0.20
table wine	15	0.20
quality wine	15	0.50
brandy, plum brandy	15	2.00

Source: Own compilation based on CAFAO data from the Gazette of Bosnia-Herzegovina (March 1998 und 15 Sept 1999)

Information on imports is only partly available, in this case only for the FBH in 1998/99. Certainly these data do not include 'grey market' imports. As the information basis is low, the estimation of the import demand (domestic demand minus domestic production, see overview 1) plays an important role in establishing total import quantities.

Import of wheat and wheat flour: The estimated import demand for wheat is more than 200,000 tons and exists mainly in the FBH. Wheat imports are mostly from Hungary and Croatia, while wheat flour is imported from Serbia. According to some estimates, about 100,000 tons of flour are illegally imported and used in bakeries (ONASA, 20 June 2001). Wheat is charged at 0.05 DM/kg import duty and wheat flour at 0.10 M/kg.

Import of feed: Though the production of maize and other cereals increased by 25% in the RS from 1991 until 1998, large amounts of corn are still imported from Serbia and Eastern Europe. During the NATO attacks on Serbia, corn imports from Serbia to BH were cut off, resulting in higher domestic prices for that period. A lot of animal feed concentrates are also imported, presumably due to the low import duty (5%) for mixed feed compared to the higher

import duty for corn (10%). The major part of mixed feed for poultry is imported from Serbia and Hungary, with some from Austria.

Import of milk: Various estimates of the import demand of milk vary between 100-200 million litres. Mainly diversified milk products (e.g. soft cheese, Emmentaler, Gouda, Swiss cheese, fruit yoghurts, butter, packed ice cream, mozzarella cheese for the pizza industry) are imported, as these products are rarely produced in the country.

Import of meat and meat products: According to CAFAO data (1999), the FBH imported approximately 20-25,000 tons of meat and meat products, mostly frozen beef, frozen pork as well as sausages and salami. The customs administration of RS reported that 5,388 tons of meat and meat products were imported. In addition to meat imports, FBH imported in 1998/1999 approximately 20-30,000 tons of livestock (for slaughtering and breeding) per year. These data show that only 50% of domestic demand is officially imported (USAID 2000). Imports of livestock and meat are charged at 10+1% import duty plus a fixed duty rate (Prelevmani) of 0.50 DM/kg.

According to CAFAO data, FBH imported in 1999 17,000 tons of **poultry meat**, whereas the import demand is estimated at 30,000 tons. Local enterprises mentioned the competition from cheap poultry meat from Hungary, which may be due to the fact that this is imported through the 'grey market'. A lot of the imported poultry meat consists of low quality parts such as legs and quarters. The average price of imported goods in 1999 amounted to 1.60 DM/kg, compared to local production costs of more than 2.18 DM/kg.

Import of eggs: Though the import duty for eggs is very high, producers mentioned the competition from cheap 'cold-stored' eggs from Germany and the Netherlands.

Import of fruits and vegetables: According to estimates, the total import of processed fruits and vegetables amounts to more than **45,000 tons** (USAID 2000). In 1999, FBH imported fruit juices and soft drinks to the value of more than 36 million DM, with 88% of the juices and drinks coming from Slovenia and Croatia. Fruit juices and soft drinks are 90% water, and therefore the mixing and filling of concentrates could be interesting for BH. Fresh grapes, citrus fruits and other fruits are imported, too. Among vegetables, the main import products are tomatoes, peppers and chilli peppers as well as potato plant material. Import duties for fruits and vegetables that are also produced in the country amount to 5-10% plus a Prelevmani of 0,10-0,30 DM/kg. There are no import duties on bananas and citrus fruits.

3.2 Regional markets

In general, it is doubtful whether Bosnia will ever be able to become a large food exporter. The locally produced quantities are small and cannot even satisfy the local demand. Nevertheless, some special and competitive products are exported to neighbouring countries (special meat products such as smoked ham, special processed fruit and vegetable products, freshwater fish, tea, and mushrooms).

According to official data, 28 tons of fresh berry fruits were exported in 1998 (USAID 2000). The central statistical agency in Sarajevo also registered exports of meat products (2,612

tons export versus 8,464 tons import, 1998), presumably by the enterprise Lijanovici that exports to Croatia. According to USAID (2000), a production surplus could occur for eggs, potatoes and plums, although the export potential is not great.

Until now, BH products have been rarely available in regional markets . However, their export potential may be explored:

- Along the Croatian coast, e.g. for fresh products, fruits and vegetables. Croatia has 4 million inhabitants with increasing purchasing power and 20 million tourist overnight stays per year.
- Macedonia, Kosovo and Albania are potential markets for meat products, as they produce little meat. However, products have to be price-competitive as the purchasing power is low.
- There could also be chances for trade with the Republic of Yugoslavia for some processed products which BH has developed stronger technologies and marketing, in areas where the Serbian food industry has not yet modernised. However, the low purchasing power should also be considered.

Advantages in regional trade are the similar languages, the existing networks and trade relations and their proximity. Export to these countries is also possible with the existing certification system in BH. Furthermore, a free trade agreement has been signed between BH and Croatia (in force since 01 January 2001). However, Croatia has issued an import stop on livestock and meat from BH for the time being. Bosnia has also entered into negotiations with the Republic of Yugoslavia.

Disadvantages in regional trade are the difficulties of transportation through the mountainous areas and the lasting political problems and conflicts in South East Europe. There is also strong competition from Italian and German products on the Croatian and Slovenian markets (milk and cheese products, sausages, candy).

3.3 The EU

BH hardly exports anything to the EU even though the EU imposes import duties on few food products. The main exporters of food products to the EU are countries from Central Europe such as Hungary, Poland and the Czech Republic. BH has only limited quantities for export, and is mostly unable to cope with non-tariff barriers (standards, quality norms). For the export of animal products, a certifying body at the state level and slaughterhouses certified to EU standards are missing.

Market opportunities exist mainly for products such as berry fruits, fruit, ethnic food (e.g. Ajvar, Djuvec, Balkan salad) for South East Europeans living in the EU, as well as for noble fish, tea, medicinal and aromatic plants, mushrooms and lamb.

Organic products may also be increasingly produced in Central and Eastern Europe for the EU market. A reason for this is the high labour intensity of the organic production, the relatively low labour costs and the rare use of mineral fertilisers and plant-protection chemicals in BH and other transition countries over the last ten years. However, exports

could be less attractive to consumers in the EU because of long transport distances (and in connection with this, high energy consumption) and because controls in the transition countries are assumed to be less intensive. At present, BH still lacks a certifying body for ecological products, and there are few specialised advisory services or possibilities for control.

3.4 Other markets

Like in the EU, there is also a demand for ethnic food in America, Canada and Australia, above all by Europeans living there. Predominantly, processed vegetables based on special recipes are demanded, i.e. vegetables that are more sour and less sweet than usual for American taste. One of the BH processors exports, for example, Ajvar, baby pickles and mixed vegetables to Canada to an importer who originally comes from BH. Competitors for ethnic food are mainly Bulgaria, Macedonia and Turkey.

3.5 Competitors and benchmarking

3.5.1 The most important competitors in the region

As mentioned above, it is important for BH to win back market share on the domestic market. Therefore, we will first look at the main competitors on the domestic market:

Overview 6: Countries of origin for BH imports

Product	Main countries of origin for BH imports
Wheat	Hungary, Croatia, Serbia
Wheat flour	Serbia
Maize/corn	Serbia, (Eastern Europe)
Mixed concentrate feed	Serbia, Hungary, (Austria)
Livestock	Poland, Hungary, (Germany, Austria, Romania, Serbia)
Meat and meat products	Croatia, Slovenia, Austria, Germany, (the Netherlands, Italy, Hungary, Poland, Denmark, Belgium, Serbia)
Poultry	The Netherlands, Slovenia, Croatia, Hungary
Milk and milk products	Croatia, Slovenia, Germany, Hungary
Fruit juices	Slovenia, (Croatia)
Fruit and vegetable products	Hungary, Italy, Croatia, Macedonia
Grapes and citrus fruits, fresh	Italy, Greece, Slovenia, Spain, Turkey
Other fresh fruit	Slovenia, Italy, Austria

Source: Own compilation based on data from USAID (2000) and interviews during the study.

Main competitors on the domestic market are Croatia, Slovenia, the Republic of Yugoslavia as well as Hungary, mostly in the area of milk and milk products, livestock, meat and meat products, fruit and vegetable products and drinks. Furthermore, there are imports of cattle and meat products from Hungary and Romania, as well as imports of special vegetables from Macedonia.

Overview 7: Total area, share of agriculture of the GDP, agricultural foreign trade balance in selected countries in the region (1998/99)

Country	Total area (million ha)	Agricultural area (million ha)	Arable land (million ha)	Pastures and meadows (million ha)	Share of agriculture of the GDP (1999) (%)	Agricultural foreign trade balance (1998) (million US\$)
BH	5.11	1.85	*0.65	1.20	(98) 16.0	-402
Croatia	5.65	3.15	1.46	1.56	(98) 10.0	-81
Slovenia	2.02	0.78	0.23	0.29	4.0	-404
Macedonia	2.57	1.29	0.59	0.64	(98) 11.4	52
Rep. Yugoslavia	10.22	6.18	6.18	3.69	19.4	-265
Hungary	9.30	6.19	4.71	1.15	5.0	1,535

Source: ZMP 2000 (*data differ: sometimes, only 0.5 million ha are documented)

BH is a rather 'small producer' in the region, and can currently hardly compete with imports from neighbouring countries.

Overview 8: Production of selected products (in 1000 tons, 1998/99) in selected countries in the region

Land	Slaughter weight beef (1999)	Slaughter weight pork (1998)	Poultry (1998)	Milk (1999)	Wheat (1999)	Potatoes (1999)	Eggs (million pieces*) (1999)
BH	9	5	8	214	(98) 130	438	185
Croatia	51	151	86	631	470	729	818
Slovenia	56	63	72	644	150	221	349
Macedonia	7	9	2	178	377	180	(98) 439
Rep. Yugosl.	(98) 123	300	80	(98) 2,056	2,167	810	(98) 1,850
Hungary	52	554	581	2,011	2,636	1,035	3,200

Source: ZMP 2000

3.5.2 Croatia

Since the start of 2000, Croatia has started to develop well, compared to the little progress in transition from 1991 until the end of 1999. Cattle stocks, which made up 40% of the total animal stock, dropped to 438,000 animals in 1999 compared to 830,000 in 1990. The total production in 1999 was only 65% of the average level in the years 1989-91. According to

ZMP (2000), the reasons for this are the losses during the war, the loss of traditional export markets, lack of investment, and insufficient support by the state.

Nevertheless, Croatia delivers milk and milk products (e.g. by the company Dukat) and meat and meat products to BH (above all to FBH). Short distances, the same language as well as ethnic similarities and partly political proximity allow Croatia to supply the market without difficulties. The great number of border crossing points also eases unregistered trade. Since the beginning of 2001, a free trade agreement has been in place with BH, including a gradual elimination of duties on agricultural products until 2004. Croatia has also established free trade agreements with other countries like Slovenia and Macedonia.

The government is trying to protect the domestic market through import duties of approx. 20%. Meanwhile Croatia has built up a modern agricultural market and price information system. Data on agricultural markets are regularly collected (e.g. producer, wholesaler and retailer prices), edited and disseminated to the market participants.

3.5.3 Slovenia

Slovenia is economically the most developed republic of the former Yugoslavia. Even when part of former Yugoslavia, Slovenia was already very active in agro-processing. Slovenia, which is a first round EU candidate, has reformed its food market, and now produces many products according to EU standards concerning quality, packaging and marketing. After the setbacks between 1990 and 1993, the food sector has developed very well again. Agriculture contributes 4-5% to the GDP. Small private companies (of which two-thirds cultivate less than 5 ha) utilise 93% of the agricultural area, and produce almost 90% of the total agricultural production. Slovenia has been able to supply its own market with most of its food products, and exports relatively large amount of fish, milk, wine and alcoholic drinks. Food imports mostly consist of processed products.

On the BH market, Slovenia is, in particular, a competitor for fruit juices (mainly the brand 'Fructal'), processed vegetables, milk products (mainly the brand 'Alpsko') and meat products. Slovenia produces mostly in accordance with international quality standards and is very strong in the area of marketing (product range and diversity, product development, marketing plan, quality management, packaging, brand production, advertisement etc.).

The Slovenian government decided on a "rural development plan" for the period from 2000-2006 (169 million Euro for 7 years). It is planned to improve the competitiveness of the agricultural sector through specific investments mainly in processing, marketing, and strengthening the technical basis and rural infrastructure.

3.5.4 The Republic of Yugoslavia

The economy in the Republic of Yugoslavia has been weakened due to the conflicts, particularly as a result of the embargo introduced during the Kosovo conflict in 1999, together with the NATO attacks, which combined caused an estimated US\$ 130 billion of material

damage. Furthermore, large parts of the fertiliser factory were destroyed as well as the anti-hail station and radar centres, which resulted in partial losses in production.

The GDP dropped from an estimated US\$ 1,700 per capita in 1998 to US\$ 900 today. The transition from a planned economy to a free market has hardly begun. Nevertheless, the Republic of Yugoslavia is a strong food producer in the region and has been able to export some products in the last few years. In 1999 Serbia exported, for example, fresh and processed fruits and vegetables (mainly berry fruits) valued at almost US\$ 140 million, whereas imports in this market segment amounted only to US\$ 40 million.

The food industry's infrastructure was almost unaffected by the NATO attacks. However, its capacities are under-utilised (e.g. only 20% of processing capacity of about 450,000 tons of fruits and vegetables, 1999).

There is a special ethnic and political connection between the Serb Republic and Serbia. The RS and Rep. of Yugoslavia have agreed on a kind of free trade agreement, and a general trade agreement between BH and Yugoslavia is currently being negotiated. Along the border, intensive trade takes place. Serbia delivers mainly grain, flour, feed, livestock and meat to BH. It is assumed that most of these imports are unregistered.

3.5.5 Hungary

At the end of the 1990s, Hungary was assumed to be working at only 60% of its potential productivity level, according to local politicians. One of the reasons mentioned for this is the state of transition in the agricultural sector, e.g. the complex and lasting procedure of compensation of former land owners and, linked to this, the fragmentation of plots. The Hungarian food industry has suffered from inflation (10% per annum since 1998) as well as from lost markets in Russia. Agriculture contributes 5% to the GDP.

Hungary, a first round EU candidate, is far more decisive and active in transition than BH or the Republic of Yugoslavia. Its cattle stock is registered and identified, and a national land register has been developed. At present, there are about 11,000 large-scale agricultural enterprises in Hungary, with an average of about 260 ha of agricultural land. Furthermore, there are about 26,000 registered individual farms and 1,9 million very small farms mostly operating part-time. A survey carried out by the Hungarian Chamber of Agriculture concluded that approximately two-thirds of Hungarian enterprises can face competition within the EU.

Roughly two-thirds of Hungarian agricultural products are currently processed. The privatisation of the food industry is practically finished. A wave of concentration has now begun, especially in the meat and poultry processing industries, as well as in dairies. In 1997, DM 508 million was invested in the food industry, with probably a similar amount in the following years. Most of the finance comes from foreign investors. The foreign investments are mostly in about 180 strong and export-orientated enterprises, whereas a great number of other companies are regarded as uncompetitive under EU conditions. By privatising the food industry, about US\$ 1 billion came into the country, and the same amount is estimated to have been spent on the modernisation of the processing plants. The share of foreign capital

in the food industry is currently probably about 65% (compared to a foreign capital share of about 10% in the food industry in the EU).

Until 1995, agricultural exports contributed significantly to the national economy; however, the food sector's relative importance decreased later on. At the end of the 1990s, Hungary profited from the difficult situation in the region, and was able to double its wheat exports from 1997 to 1998. In 1998, total agricultural export in Hungary amounted to DM 5.2 billion (of which Germany was the most important market, with DM 1 billion) compared to DM 1.2 billion of agricultural imports. Nevertheless, the agricultural sector lost in importance compared to the tourism sector.

Hungary subsidises its domestic food sector with market subsidies (e.g. export subsidies for chicken meat), subsidies for production and investments, a fund supporting modern co-operatives, providing insurance policies for farms, and with a support program for young farmers. The dairy industry in Hungary also finances a fund for export subsidies. However, since the year 2000, the Hungarian Ministry of Agriculture has been confronted with drastic budgetary constraints that are now also influencing the subsidy policy.

The Hungarian Ministry of Agriculture finances a Centre for Agricultural Marketing (AMC). A financial contribution of the private sector to this centre is planned based on the 'agricultural marketing law'. In 1999, a quality seal for 'excellent Hungarian food product' (for producers with ISO and HACCP certificates) was introduced and was well received in the country and abroad. Hungary is also active in organic production. In 1999, the area dedicated to organic production was about 30,000 ha, and this is planned to be increased tenfold by 2006. In 1999, 700 Hungarian enterprises were certified by Biokultura (one of the few certifying bodies outside the EU).

3.5.6 Competitors from the EU

Among the EU countries, mainly Austria, Germany, Italy and the Netherlands are represented on the BH market with food products and food additives, equipment and agricultural inputs. Food products such as milk and milk products, frozen fish, frozen and fresh ready-made products, candy, snack products, frozen French fries, canned fruit and vegetable products, fresh fruits and vegetables, jam and wheat are imported. Furthermore, other products are imported such as spices, stabiliser, and additives. Among agricultural inputs, there are imports of machines and equipment, seed potatoes, other seeds, sperm for artificial insemination, feed concentrates, fertiliser, plant protection chemicals, and vaccines. Packaging material is also partly imported from the EU.

In 1999, Germany exported food and related products with a value of DM 79 million to BH, whereas the value of BH exports to Germany only totalled DM 3 million (ZMP 2000). German exports to BH consist of 15.6% livestock, 41.6% animal products, 32.6% plant products, and 10% natural stimulants. According to a survey carried out in 1999, German products represented 40% of the international product range in BH, followed by Croatian and Hungarian products (USAID 2000).

EU countries are strong competitors on the BH market and other markets in the region. Their competitive advantages are the wide range of products, product quality, and the professionalism in logistics and marketing. Exports to the region are sometimes subsidised: there was, for example, a subsidy for German milk powder exports to BH until summer 2001.

Overview 9: German agricultural exports to the region (1997/98, in million DM)

Country	1997	1998
BH	79.5	76.5
Croatia	200.3	154.1
Slovenia	115.5	144.4
Republic of Yugoslavia	114.1	97.3

Source: German Federal Statistical Office, in: ZMP 2000

Some products are imported from other agro-ecological areas, such as coffee beans and citrus fruits. Some of these products also lead to a substitution of the consumption of domestic products (e.g. consumption of citrus fruit is increasing, whereas consumption of domestic fruits is decreasing).

3.6 Market opportunities and perspectives

3.6.1 Overview

The main market opportunities for the food industry are on the domestic market. BH should use this potential by reducing its domestic weaknesses in order to regain domestic market share, and to become competitive with its niche products on foreign markets.

The strengths of the food sector in BH on the local market are:

- domestic demand is still not met by local production
- proximity to local markets (important for fresh products, perishable products with low to mid-durability and for products with high storage and transport costs),
- knowledge of local consumer behaviour
- many years of experience in various sub-sectors
- the availability of sufficient pasture and meadows for cattle farming
- price advantages with some fruit and vegetable products

The weaknesses of the food sector in BH are:

- insufficient efforts concerning quality management, food safety control and marketing
- the low productivity of agricultural primary production compared to other transition countries, and the related high production costs

- a business environment that does not support investments and innovations sufficiently. Companies often have to struggle on their own, and are confronted with a state of institutional chaos without being supported sufficiently by state, semi-state or private organisations. This is particularly the case in the areas of import policy, food control, financing, taxation as well as training, advisory and information services.

3.6.2 Sub sectors

Potential on the domestic market is mainly to be found in the following sub-sectors:

- Pastry production (Bakeries)
- Meat industry, in particular the poultry industry
- Dairy industry
- Fruits and vegetables

An export potential exists mainly for niche products such as berry fruits and ethnic food.

Overview 10: Market opportunities, local supply and competitors in selected sub-sectors

Product	Domestic demand	Domestic supply	Availability of raw material	Main competitors
Pastries	Consumption of about 393,000 tons of wheat flour, of which approx. 45% is processed in bakeries (approx. 177,000 t); increasing demand for frozen products possible if income increases	Bread, pastries, frozen pastries, increasing product range	Import demand, wheat production covers only about 63% of demand, but sufficient capacities in the mills	Croatia, Serbia
Meat and meat products	Consumption of about 90,000 tons slaughter weight; increasing demand for poultry, decreasing demand for expensive beef and lamb; fish demand may increase if income increases	Except for sausage production, so far little further processing (e.g. bone-free finished products)	Could be increased (sufficient pastures for cattle production, short term investments in poultry possible), at present huge imports of live stock and frozen meat	Slovenia, Croatia, Germany, the Netherlands, Austria
Milk and milk products	300-400 million litre consumption; demand for products with long durability and diversified processed products, e.g. sour cream, 0.5 litre milk; increasing demand for fresh milk in the long run (once the cooling logistics are better)	UHT and pasteurised milk, fresh cheese, yoghurt; too little product development, insufficient cooling logistics	Could be increased, at present insufficient production, high production and collection costs, insufficient quality control, and huge import levels	Croatia, Slovenia, Germany, Hungary
Fruit and vegetable products	At present demand for cheap fresh and processed fruits and vegetables. Increasing demand for juices (in future more multi-vitamin and 100% fruit juices); increasing demand from the gastronomy sector (e.g. 0,2 litre bottles), increasing demand for snack products (e.g. potato chips)	Increasing efforts in quality management and packaging; local products are mostly cheaper than imported ones	At present insufficient raw material, contract production has gradually developed, production of vegetables increasing, but few long term investments in fruit production	Slovenia (fruit juices) Hungary, Italy, Croatia, Macedonia (processed products)

Source: Own compilation

4. Development strategy for the sector

4.1 Objectives

The stability pact for South East Europe (Cologne, June 1999) focuses on peace, stability and economic development in the region as key objectives. The EU initiated the stability pact; however, it is also used as a framework for the co-operation between the EU, USA, Russia, Japan and South East European countries. Within the framework of the stability pact, BH and the other four countries in the region were offered the prospect of integration into the EU. The main objectives of the current support to BH are the consolidation of the peace process and inter-entity co-operation, supporting ethnical co-existence and the return of refugees and 'displaced persons', as well as the establishing of functioning institutions and a viable democracy, creating a firm basis for sustainable economic recovery and development, and bringing BH closer to EU standards and principles.

The Ministries of Agriculture of both entities mostly refer to the Mid Term Strategies for the agricultural sector developed in co-operation with FAO. These strategies are intended to increase productivity in private agribusiness companies, strengthen the land market and improve access to finance.

In the following section, a strategy with a specific focus on the agro-processing industry is proposed. It will be important to discuss these propositions with relevant BH representatives.

BH should aim at increasing its competitiveness in order to regain its market share on the domestic market. This is not aiming at self-sufficiency in all products, as every country only has comparative advantages with some products. The long, medium and short-term objectives should be:

Long term objective	To make the food industry in BH internationally competitive and able to compete on integrated regional markets, and even on international markets for some niche products.
Medium term objective	To bring the competitiveness of the food industry in BH in line with the competitiveness of the other South East European countries (Croatia, Slovenia, Hungary) in terms of productivity, production costs, quality management, food control and marketing.
Short term objective	To increase BH's market share on the domestic market.

4.2 Strategic approach

According to the interviewed processing companies, the major areas for improvement are marketing, quality management and control, and a reduction of import duties on raw materials (particularly the Prelevmani), although these should stay stable or be increased for processed products. Imports should be controlled more intensively, and the government

should support domestic production with either subsidies or other support mechanisms. The author of this study supports these points, but sees a strong additional need for a productivity increase in primary agriculture, as well as to actively attract and protect foreign direct investments. Without increased productivity, decreased production costs and an inflow of foreign capital to modernise production and processing, BH will have few chances in the increasingly competitive markets of the future.

The following four intervention areas are proposed:

1. Improvement of the **quality management** and **food safety control** of food products at all levels of the value chain
2. Improvement of the **marketing** of local products through capacity-building in the areas of marketing, market research, marketing support and promotion
3. Support measures to **increase the productivity** and **reduce costs** in agricultural production, processing and trade
4. Creation of a business environment that enhances **investment and innovations**

4.3 Measures for market penetration

Marketing consists not only of sales and advertisements, but also of quality management, market research, development of marketing concepts (product range and diversification, product development, pricing, promotion of brand products and family brands), certification, packaging (material, labelling, durability), logistics (storage, transport, distribution) and distribution (trade partners, product positioning, payment systems, discount policy).

Generally, four marketing strategies can be applied: market penetration, product development, market development, or diversification, depending on whether the emphasis is on existing or new markets and products.

Survey 11: Marketing strategies

	Existing products	New products
Existing markets	1. Market penetration (including product adaptation)	2. Product development
New markets	3. Market development	4. Diversification

Source: Philip Kotler: Marketing Management 1997

It is important for Bosnia and Herzegovina to exploit the existing domestic market and to maintain and improve their position not only with existing products but also particularly with new products. Therefore, the marketing strategy in BH should focus on **market penetration and product development**.

The preconditions for expanding domestic market share are, besides marketing itself, the above mentioned areas of quality management and food safety control, productivity increases and cost reductions, as well as the creation of an adequate business environment.

The following areas for specific marketing activities are recommended:

- **Capacity Building** in the area of marketing and management, training-of-trainers, practical training and further vocational training in the country and abroad, consulting, creation of MBA courses;
- **Market research:** Reviving a Market Information System, development of a concept for creating market research institutions that are sustainable financed, co-operation between market research and advisory services;
- **Dissemination of information** e.g. via a food magazine, radio and television, manuals and brochures about quality management, production and marketing, eventual dissemination through the creation of business centres and market information centres;
- **Marketing support and promotion:** Supporting the development of marketing concepts, establishment of national quality seals or support to quality seals of associations, promotion of BH products on the domestic market, participation at regional and international fairs, development of catalogues and websites presenting local companies and products.

4.4 Measures for a better integration of the sector

Successful integration of the whole value chain from agricultural inputs to agricultural products to processing and trade is important. Examples in BH and other countries of linking investment loans to a processing company with support activities for the primary production of associated farmers have often proven to be successful

There are ways to support organised production (contracts between processors and farmers or between traders and farmers). Projects for the modernisation or expansion of a processing company can be linked to technical and management advice and seasonal credits to farmers or co-operatives in the respective area. Furthermore, contracts between farmers and wholesale traders or traders of inputs can be supported in a similar way.

4.5 Activities in the areas of capacity-building, research and development

Capacity-building is needed above all in the areas of quality management, food safety control, marketing, and in modern technologies through practical vocational training. In the short run, local experts can be supported during education and training abroad. In the medium to long run, a modernisation of the education and training system has to take place, such as the new courses on quality management and food safety control at the University of Banja Luka, which are supported by an EU project. Another important activity is the development of a sustainable system of continuous training parallel to the job.

In the area of **marketing**, practical education and training are needed. These could be carried out in special private marketing schools (with an MBA degree in marketing, perhaps even with a specialisation in food marketing). Various experts such as economists,

sociologists, agricultural engineers and nutritionists could attend the training programme. The MBA course could consist of a period of six months of practical training (or one year parallel to existing jobs) plus a six month practical training period in a modern processing or trade company, plus further 1-6 months practical training in a country that has a quite developed marketing system (e.g. in an EU country, USA, Slovenia, or Hungary).

In the long run, establishing a practical vocational training system not only for farmers, but also for small-scale processing like bakers, butchers etc. is recommended. Institutional, financial and legal concepts should be developed considering the possibilities of public-private-partnerships, and co-operation with extension and advisory services. The concepts should also include curricula, criteria for company selection and the training-of-trainers. Such a concept could be developed rather quickly, whereas the implementation of such a new system requires long term planning.

Applied research and international exchanges are needed in the areas of food technology, product development, food safety control, quality management, marketing and management, agriculture, rural business management, integrated pest management, and organic agriculture. Financing concepts should consider contributions from the private sector for applied research or participation in international conferences, e.g. by sponsoring activities and through laboratory contract work. It should be noted that there is great need for training and modern equipment for food safety control in the latter.

4.6 Financing

It will be difficult to ensure the financial resources needed for the implementation of this sector strategy. The public and the private sector in BH are usually confronted by insufficient financial means. Therefore, already several projects have not been continued after the donor finance ran out.

Considering the financial constraints, it is important to set priorities! Therefore, it is recommended that the main efforts for the food sector in BH should be made in the area of **food safety control and quality management** to avoid further losses in consumer confidence. Improving the image of local products will have a positive effect on the entire food sector.

Furthermore, various financial sources have to be explored, and their use should be optimised in planning, e.g. by:

- intensive measures to attract foreign and domestic investment (e.g. acceleration of the privatisation process, and providing incentives for investors)
- public-private-partnerships concerning service organisations (e.g. advisory services, research, training, information management) with a large share of private investment.

It is also important to create a business environment with a regulatory framework as well as public and private services that are attractive to foreign investors and that allow innovation and product development. The most important areas are: legal security, fast privatisation, the

tax system, administrative procedures, clear political and administrative responsibilities, transparent information as well as the regional and international integration of the country.

4.7 Approaches and activities of other donor organisations

This food sector strategy has been developed at a late stage. Most donors have already developed strategies and sub-strategies, and are already implementing projects in the areas of animal identification, training in food safety control, management and marketing, rural credit, strengthening of extension services and ministries, supporting privatisation and farmers' co-operatives.

The strategies of the various donors have a democratic orientation and aim at a market economy by supporting structural reforms for the transition of the public and private sectors as well as of societal institutions.

As the local bodies have limited resources, current activities in the agricultural and food sector strongly depend on donor finance. It is rather doubtful that the donor organisations that are already active will now insert their activities and plans into a new sector strategy.

Overview 12: Current and planned projects in the food sector and in the area of business support in BH (2001)

Donor	Current and planned projects
EU	<ul style="list-style-type: none"> • Strengthening the Ministries of Agriculture in BH • Agricultural Extension Project • Rural Credit Facility • Micro Credit Facility, District of Brcko • Animal Identification Project (in preparation) • Agribusiness, Textile and Leather Sectors' Restructuring • Regional and Enterprise Development • Privatisation
World Bank	<ul style="list-style-type: none"> • Local Initiatives Project (LIP I, LIP II) • Small-Scale Commercial Agricultural Development Project (in preparation)
FAO	<ul style="list-style-type: none"> • Soil Inventory
GTZ	<ul style="list-style-type: none"> • Agricultural Sector Support Project • Privatisation Project • Economic Law Reform Project • Reform of the Tax System • Private Sector Support
IFC /SEED	<ul style="list-style-type: none"> • Training in marketing and management • Consulting services to companies • Establishment of sector associations
Dutch Cooperation (PSO)	<ul style="list-style-type: none"> • Business-to-Business Projects in the areas of: <ul style="list-style-type: none"> - Agriculture and food processing - Energy and the environment - Private sector development
Swiss Cooperation	<ul style="list-style-type: none"> • 'Project for Promotion of Entrepreneurship in the Fruit and Vegetable Sector in the Region of Tuzla and Banja Luka' (implemented by GTZ) • 'Rural Credit Pilot Scheme' (2001-02), in co-operation with KfW • 'SIPPO' (Swiss Import Promotion Programme), • Business Development Services
USAID	<ul style="list-style-type: none"> • USAID Business Consulting (until end of 2001) • USAID Business Finance • Privatisation
SIDA	<ul style="list-style-type: none"> • Establishment of a local organic certification body
IFAD	<ul style="list-style-type: none"> • Livestock and Rural Finance Development Project (in preparation)
British Know-how Fund	<ul style="list-style-type: none"> • Privatisation • Enterprise restructuring
World Vision (NGO)	<ul style="list-style-type: none"> • Providing support to farmers' co-operatives • Implementation of agricultural and rural credit schemes for USDA, SIDA and UNDP.

Donor	Current and planned projects
CARE Int.	<ul style="list-style-type: none"> Quick Impact Facility
Other NGOs	<ul style="list-style-type: none"> various small-scale projects in the areas of agriculture and rural development

Source: Own compilation based on interviews and project information material, June 2001

5. Activities in the food sector (Proposition)

Activities	Period	Enterprises and institutions	Donor activities
1. Improvement of quality management and food safety control at all levels of the value chain		Associations, institutes and others.	
1.1. Adjustment of the legislation in accordance with EU standards and quality norms	Short	Food industry associations	EU GTZ
1.2. Creation of an active state certification body for animal products with sufficient authority and sufficient technical, financial and staff resources	Short	Food industry associations, farmers' associations, veterinary office	GTZ (Agricultural project), EU (animal identification, planned)
1.3. Introduction of an identification system for animals	short-medium	Veterinary centre Banja Luka, veterinary faculties	EU (animal identification, planned)
1.4. Clear definition of responsibilities of ministries and various institutes and laboratories	short-medium	Public health institutes (various levels), veterinary centre in Banja Luka, veterinary faculties, hygiene institute, agricultural institutes	EU (reform of agricultural ministry)
1.5. Modernisation of the equipment of laboratories	short-	Public health institutes	EU

Activities	Period	Enterprises and institutions	Do-nor activities
and institutes for food safety control	medium	(various levels), laboratories of the veterinary institute in Banja Luka and of the veterinary faculty in Sarajevo, hygiene institutes, agricultural institutes	GTZ
1.6. Training in the area of quality management and food safety control, and supporting in-house training	short-medium	Chambers, universities, research institutes, the food industry, private consulting companies	EU (ECOS / Chamber of Economy) SEED/ IFC GTZ
1.7. Sustainable modernisation of university courses for quality management and food safety control	medium long	Universities (e.g. Technology Faculties), institutes for food safety control	EU (Technology Faculty Banja Luka)
1.8. Improvement of the technical, financial and staff resources in inspection institutions, and an increase in the penalties for non-compliance	medium long	Chambers, associations of the food industry, trade associations, BH customs administration	EU (CAFA O, customs and tax system)
2. Improvement of the marketing of local products through capacity-building in the area of marketing, and through market research, marketing support and promotion			
2.1. Capacity building in the area of marketing through: training, scholarships for marketing studies abroad, development and implementation of a concept for a financial	short-medium	Chambers, associations of the food industry, cooperatives, consulting enterprises	SEED/ IFC, GTZ (Agricu

Activities	Period	Enterprises and institutions	Donor activities
viable (MBA) marketing course			lture), EU (ECOS /Cham ber)
2.2. Financial support and advice for marketing activities of trade associations and private consulting companies (including supporting participation in regional and international fairs, elaboration of information material, joint marketing campaigns)	short- medium	Associations, consulting companies, chambers	
2.3. Reviving the agricultural market information system (AMIS) and development of an information dissemination system (email, websites, magazines, manuals)	short- medium	Consulting companies, NGOs	EU (until beginn ing of 2000)
2.4. Concept development and feasibility study for the creation of market research agencies or centres (semi-state or private)	medium long	Consulting companies, NGOs, chambers, associations	
2.5. Marketing support by combining support to investments in the food industry or trade with support measures for associated primary production (organised contract production)	medium long	Associations, co- operatives	USAID / GTZ Agricul tural Project ; Dutch Coop.
2.6. Development and control of a national quality seal, including promotion activities, and/or supporting the development of private quality seals (e.g. of a food industry association)	medium	Associations, chambers	
2.7. Development of organic production by supporting advisory services and certification efforts	medium long	Chambers, associations, farmers' organisations, NGOs	Swiss Coope ration and GTZ (SIPP O), SIDA
3. Support of productivity-increasing and cost decreasing measures in primary production, processing and trade			
3.1. Development of sustainable <u>finance systems</u>	medium	Banks, NGOs, consulting	USAID

Activities	Period	Enterprises and institutions	Do-nor activities
addressing agriculture, food industry and trade for mid to long term investments into improved technologies (e.g. credit lines for young farmers, investments in quality improvement, improved storage capacities, production of organic products)		companies, associations	Switzerland / KfW; EU, EBRD, World Bank
3.2. Development and implementation of a concept to introduce a <u>practical vocational training programme</u> for the sector: agriculture (including horticulture, home economics, agricultural mechanics) and processing industry (e.g. bakers, butchers)	medium long	Farmers' associations, trade associations, chambers of economy and trade, advisory companies, extension services, private schools	
3.3. Support for <u>applied research</u> and international research exchange (with state or private finance) in the sectors of agriculture, rural business management, integrated pest management, organic agriculture, food technology, quality control, quality management, marketing and management	medium long	research institutes/ faculties, associations, private companies, industry associations, farmers' associations and others	EU Tempus (regional exchange)
3.4. Assistance to the establishment and operation of private or semi-state consulting companies (e.g. in agriculture, management, marketing, quality management)	medium long	consulting companies, individual consultants, NGOs	SEED/ IFC
3.5. Support for <u>organisations of producers, processors and traders</u> (e.g. agricultural production or marketing co-operatives, machinery pools, farmers' associations, associations of the food industry, product-related associations of producers, processors and traders)	medium	Cooperatives, associations, machinery rings, trade associations, chambers, consulting companies, NGOs	GTZ (Agricultural Project) EU/GTZ (machinery rings) World Vision (cooperatives) SEED
3.6. Harmonising the policies of the Ministries of Industry and Agriculture (e.g. a price policy for	short-medium	Farmers' associations, associations of the food	GTZ (Agrar)

Activities	Period	Enterprises and institutions	Do-nor activities
milk)		industry	EU (MAFW)
4. Creation of a favourable business environment for investment and innovation			
4.1. Acceleration of the privatisation process and active measures to attract foreign direct investors, legal security, preparation and editing of detailed and transparent information, lower requirements to be fulfilled by investors, elaboration of a mechanism for investment guarantees, investment promotion activities)	medium long	Enterprises in privatisation, associations of food industry, chambers, banks	GTZ (Agricultural Sector Support, Privatisation Support, Economic reform, EU (CAFAO, FIPA)
4.2. Creation of a common tax legislation, simplification and harmonisation of the tax system, tax exemptions for investors	medium long	Associations, chambers	EU (CAFAO) GTZ (tax reform)
4.3. Improvement and acceleration of bureaucratic procedures	medium		GTZ (economic reform)
4.4. Analysis and (if possible) adjustment of import duties and additional duties (Prelevmani), according to economic requirements (e.g. lower import duties for raw materials than for processed products)	medium	Industry and farmers' associations, chambers	
4.5. Restructuring of Ministries of Agriculture and Industry (e.g. to integrate the food industry	medium long	industry and farmers' associations	EU (Minist

Activities	Period	Enterprises and institutions	Do-nor activities
into the Ministry of Agriculture)			ries of Agriculture)
4.6. Increasing the efficiency, financial resources and co-operation of the statistical services	medium long		EU (Statistical project)
4.7. Support for the regional economic integration of South East Europe (free trade agreements/zones) as well as integration into international organisations (WTO, EU, TIR, international associations/NGOs, etc)	medium to long	Associations	EU
4.8. Assistance to the international exchange of private associations, chambers and trade associations	short-medium	Associations, chambers	GTZ (Agricultural Project) NL (PSO Programme)

Annex 1: Agribusiness Companies in Bosnia and Herzegovina

Group	Company	Main products	SIC Code	FED/ RS	City
Animal Feed	AGROZEM	Prepared feeds, nec	Agriculture	FED	Gracanica
Animal Feed	KREHIC	Food preparations, nec	Cattle Food, Hens Laying,	FED	Zenica
Animal Feed	AGROMIKS	Prepared feeds, nec	Cattle food & broilers	RS	Gradiska
Animal Feed	AGROUNIJA	Prepared feeds, nec	Chicken farm	RS	Srbac
Animal Feed	DEELGROS KOMERC	Prepared feeds, nec	Animal feed	RS	Zvornik
Animal Feed	JORGOS	Prepared feeds, nec	Cattle food	RS	Bijeljina
Animal Feed	KIKO	Prepared feeds, nec	Cattle feed	RS	Bijeljina
Cattle Feeding	NASCO	Beef cattle feedlots	Cattle breeding	FED	Gracanica
Cattle Feeding	ZZ SLATKI	Meat packing plants	Bull Cavles	FED	Zivinice
Cattle Feeding	AGROSPED	Beef cattle feedlots	Wheat flour	RS	Laktasi
Cattle Feeding	BULLS EXPORT	Beef cattle feedlots	Beef cattle, feedlot	RS	Bijeljina
Cattle Feeding	DIMETRA	Beef cattle feedlots	Bulls breeding	RS	B. Gradiska
Cattle Feeding	GVOZDENAC	Beef cattle feedlots	Cattle farm	RS	B. Gradiska
Cattle Feeding	JAZ	Beef cattle feedlots	Bulls fat., potato growng	RS	Bos. Gradiska
Cattle Feeding	Mirjanic Komerc	General farms, primarily animal	cattle breeding	RS	Gradiska
Cattle Feeding	MSS	Beef cattle feedlots	Cattle feedlot	RS	Loncari-Brcko

Group	Company	Main products	SIC Code	FED/RS	City
Cattle Feeding	POLJASI	General farms, primarily animal	Fattened bulls and pigs	RS	Nova Topola
Cattle Feeding	POLJOPRODEKS	Beef cattle feedlots	Bulls, pigs	RS	Laktasi
Cattle Feeding	PULJAREVIC & SIN	Beef cattle feedlots	Bulls, pigs, corn & wheat	RS	Bos. Gradiska
Cattle Feeding	TERRANOVA	Beef cattle feedlots	Bullocks, worms, humus,	RS	Bos. Gradiska
Flour	DUKAT	Flour and other grain mill products	Wheat & corn flour	FED	Tesanj
Flour	MLIN "HUSINSKI RUDAR"	Flour and other grain mill products	Flour production	FED	Tuzla
Flour	INTER-KLAS	Flour and other grain mill products	Flour mill	RS	Novi
Flour	JOVANIC-GRGA	Flour and other grain mill products	Flour and cattle mill	RS	Banja Luka
Flour	KLAS - BRCKO	Flour and other grain mill products	Flour, bakery prdcts	RS	Brcko
Flour	LOPROM	Flour and other grain mill products	Wheat flour prdctn	RS	Lopare
Flour	ZITOPOSAVINA	Flour and other grain mill products	flour and fodded producti	RS	Brcko
Flour	ZLATNO ZRNO	Flour and other grain mill products	Flour, bread, pastry	RS	Bos. Gradiska
Bakery	DERVIC	Bread, cake, and related products	bread,pastry	FED	Novi Travnik
Bakery	G&S INDUSTRY	Prepared flour mixes and doughs	Bakery goods, dough	FED	Tuzla
Bakery	GASI-PROM	Bread, cake, and related products	Bakery prdcts	FED	Travnik
Bakery	GOLD KLASS JERKOVIC	-Bread, cake, and related products	Bread	FED	Zepce
Bakery	KLAS	Bread, cake, and related products	Bread,rolls,cakes	FED	Sarajevo
Bakery	MODENA KAMBER	Bread, cake, and related products	Processed food	FED	Gracanica
Bakery	PARIZ	Bread, cake, and related products	Backery	FED	Zenica
Bakery	SALCINOVIC	Food preparations, nec	Bread, Cookies and Meat	FED	Zenica

Group	Company	Main products	SIC Code	FED/ RS	City
Bakery	SOJTARIC	Bread, cake, and related products	bread,rolls,pasta	FED	Travnik
Bakery	SPRIND	Bread, cake, and related products	Bread,related products	FED	Sarajevo
Bakery	DJURIC	Bread, cake, and related products	Bread	RS	Modrica
Bakery	MARIC PRODUKT	Bread, cake, and related products	Bread, rolls	RS	Laktasi
Bakery	PAVLOVIC	Bread, cake, and related products	Bread	RS	Banjaluka
Bakery	PINGVIN 2B	Ice cream and frozen desserts	Ice-cream, bakery, pastry	RS	Laktasi
Bakery	PEKARA		Bread, bakery products	FED	Tuzla
Bakery	VEKA KOMERC	Bread, cake, and related products	Mini Bakery	RS	Brcko
Milk	AD-TIPO	Fluid milk	Dairy products	FED	Olovo
Milk	MEGGLE		Trade with dairy products	FED	Posusje
Milk	SAPPIT		Milk & milk products	FED	Posusje
Milk	MILCOS	Fluid milk	Milk & milk products	FED	Sarajevo
Milk	PERSPEKTIVA	Fluid milk	Milk & milk products	FED	Travnik
Milk	PINGO ICE	Fluid milk	Ice cream	FED	Lukavac
Milk	SARAJ-MILK	Fluid milk	Milk, milk products	FED	Maglaj
Milk	SPRECA	General farms, primarily crop	General farms, prim.corp	FED	Kalesija
Milk	AGRICOLA	Fluid milk	Milk production	RS	Banjaluka
Milk	MLIJEKOPRODUKT	Fluid milk	Milk, sour milk, yogurt	RS	Kozarska Dubica
Milk	STROGOKON	Fluid milk	Milk, cheese butter	RS	Bos. Gradiska
Milk	VITMARK	Fluid milk	Milk, cheese	RS	Kotor Varos
Milk	MJLIJEKARA		Milk & milk products		Sipovo
Milk	BORGHI		Milk & milk products		Tesanj
Milk	ZIM ZENICA		Milk & milk products	FED	Zenica
Milk	VOZD-KOMERC	Fluid milk	Pasteurized milk prdctn	RS	Brcko
Meat	GIN	Beef cattle feedlots	Fresh meat beef and lamb	FED	Sarajevo
Meat	GRANAP	Meat packing plants	Chicken prdctn	FED	Zivinice
Meat	HOLDING STANIC	Meat packing plants	Meat production	FED	Kresevo
Meat	OHRAN	Meat packing plants	Beef slhg	FED	Vogosca
Meat	PISKAVICA	Broiler, fryer, and roaster chickens	Chicken meat	FED	Gracanica
Meat	SAS-COMMERCE	Broiler, fryer, and roaster	Chicken meat	FED	Gracanica

Group	Company	Main products	SIC Code	FED/RS	City
		chickens			
Meat	SINTER KOMERC	Meat packing plants	Meat processing	FED	Gracanica
Meat	JEZERKA	Poultry slaughtering and processing	Poultry prdctn (broilers)	RS	Kotor Varos
Meat	PAM & S	Poultry slaughtering and processing	Chicken Meat	RS	Odzak
Hogs	AGROUSORA	Hogs	Pig Farm	FED	Usora
Hogs	VETERINA-AGRAR	Hogs	Hogs and cattle feed	FED	Tuzla
Hogs	BRAZDA	Hogs	Pigs fattening	RS	Laktasi
Sheep & Goats	SITEX	Sheep and goats	Goat Dairy	FED	Bugojno
Processed Meat	LIJANOVICI	Sausages and other prepared meats	meat production	FED	Siroko Brijeg
Processed Meat	ALKA	Sausages and other prepared meats	meat production	FED	Tuzla
Processed Meat	BAJRA	Meat packing plants	Meat processing	FED	Travnik
Processed Meat	LEJSI	Sausages and other prepared meats	Meat processing	FED	Sarajevo
Processed Meat	MENPROM	Sausages and other prepared meats	Meat	FED	Gornja Tuzla
Processed Meat	NEZIREVIC AG	Meat packing plants	Meat processing	FED	Sarajevo
Processed Meat	VIMAR	Meat packing plants	Meat products	FED	Visoko
Processed Meat	PASUSCURO	Sausages and other prepared meats	Salami, sausages	RS	Banjaluka
Poultry	ARGENT	Broiler, fryer, and roaster chickens	Production of chicken	FED	Srebrenik
Poultry	ARMEX-COMMERCE	Broiler, fryer, and roaster chickens	broiler production	FED	Gracanica
Poultry	DJENO	Broiler, fryer, and roaster chickens	Production of consumptio	FED	Orasje
Poultry	MESOPROMET	Poultry slaughtering and processing	Chicken meat	FED	Tuzla

Group	Company	Main products	SIC Code	FED/ RS	City
Poultry	MONOS	Broiler, fryer, and roaster chickens	broiler production	FED	Gracanica
Poultry	OKIPOL	Broiler, fryer, and roaster chickens	Broiler product	FED	Gracanica
Poultry	PASALICI PROMET	Broiler, fryer, and roaster chickens	Broiler product	FED	Gracanica
Poultry	PERADARSTVO PUTESIC	Broiler, fryer, and roaster chickens	Processed food	FED	Putesic
Poultry	PINK	Broiler, fryer, and roaster chickens	Poultry	FED	Fojnica
Poultry	RIZVIC-KOMERC	Broiler, fryer, and roaster chickens	production of chicken	FED	Zivinice
Poultry	AGREKS	General farms, primarily animal	Poultry breeding	RS	Donji Zabar
Poultry	AGROCIMEX	General farms, primarily animal	Chicken, bulls, potatoes	RS	Bos. Gradiska
Poultry	Kokakop		Hatchery	FED	Gracanica
Poultry	Posavina Koka		Layers	FED	Orasje
Eggs	BROKOKA	Chicken eggs	Eggs	FED	Gracanica
Eggs	EGGS-PRODUKT	Chicken eggs	Eggs	FED	Gracanica
Eggs	ESKO-PROM	Chicken eggs	eggs production	FED	Brcko
Eggs	FARMIN	Chicken eggs	eggs production	FED	Gracanica
Eggs	POLET EXPORT- IMPORT	Chicken eggs	Eggs production	FED	Tesanj
Eggs	POSAVINA-KOKA	Prepared feeds, nec	Chicken & edible eggs	FED	Orasje
Eggs	PPOIP	Chicken eggs	Chicken eggs	FED	Vares
Eggs	SAMIJA PROMET	Chicken eggs	Chicken, eggs	FED	Gracanica
Eggs	VECOM-HS	Dry, condensed, evaporated products	Eggs	FED	Srebrenik Bos.
Eggs	BETA COMMERCE	Chicken eggs	Consumable eggs	RS	Gradiska
Eggs	BRODJANI	Chicken eggs	consumable eggs	RS	Gradiska
Eggs	KOKA-BK	Chicken eggs	Eggs	RS	Laktasi
Fish	ZAKIR-COMMERCE	Animal aquaculture	Fish, fish food	FED	Sarajevo
Fish	SLAPOVI	Finfish	Fish	RS	Banja Luka
Fish	TROPIK-RIBARSTVO	Fresh or frozen prepared fish	Fish farming	RS	Banjaluka
Fruit Juices	BEST-PRODUKT	Bottled and canned soft drinks	Juice & soda	FED	Zenica
Fruit Juices	DZANANOVIC	Frozen fruits and vegetables	Frozen fruits; Juices	FED	Zenica
Fruit Juices	FRIGOS (FRUTEX)	Bottled and canned soft drinks	Food; juices	FED	Celic

Group	Company	Main products	SIC Code	FED/RS	City
Fruit Juices	ILISEVIC-VOCE KOMERC	Berry crops	Fruit growing	RS	Bos. Gradiska
Fruit Juices	STUDENAC	Bottled and canned soft drinks	Juices	RS	Brcko
Fruit Juices	SZR "D.S.W."	Bottled and canned soft drinks	food processing,juices	RS	Doboj
Fruits & Vegetables	VEGAFRUIT	Canned fruits and vegetables	Processed fruits & vgtbl	FED	Gracanica
Fruits & Vegetables	OMERBASIC	Canned fruits and vegetables	Fruit & vgtbls processing	FED	Odzak
Fruits & Vegetables	POLJOPROMET	Frozen fruits and vegetables	Fruits, berry production	FED	Celic
Fruits & Vegetables	RATAR	Berry crops	Berry crops	FED	Brcko
Fruits & Vegetables	VOCAR	Dehydrated fruits, vegetables, soups	Fruits - fresh and dried	FED	Brcko
Mushrooms	SAMPINJON	Food crops grown under cover	Mushrooms	FED	Breza
Mushrooms	HELIX - EXPORT	Dehydrated fruits, vegetables, soups	Snail meat & mushrooms	RS	Bratunac
Pasta	FENIKS	Macaroni and spaghetti	pastry,noodles and kadaif	FED	Travnik
Pasta	SAMY	Macaroni and spaghetti	Pasta and fish prdctn	RS	Brcko
Sugar	VEND-PROM	Dry, condensed, evaporated products	Sugar prdctn	FED	Gradacac
Candy	UPI ZORA	Chocolate and cocoa products	Chocolate	FED	Sarajevo
Candy	GOMEX	Chocolate and cocoa products	Kinder egg	RS	Laktasi
Vegetable Oil	ABA COMMERCE	Vegetable oil mills, nec	Oil bottling	FED	Sarajevo
Vegetable Oils	SPAHIC PROMEX	Edible fats and oils, nec	Cooking oil & plstc bttls	FED	Sarajevo
Potato Seed	VUKMIR DIMITRIJE	Food crops grown under cover	Potato seeds	RS	Laktasi
Fertilizer	NATURPRODUKT	Nitrogenous fertilizers	Fertilizers	FED	Gradacac

Source: GTZ Agricultural Support Project and own data collection (N.B. This is not a complete list)

Annex 2: Contacted persons in Bosnia and Herzegovina (during the mission of Inge Gaerke in BiH from 06.-26.06.2001)

Organisation	Name	Function	Telephone
Ministry of Industry and Technology (FBiH)	Vedad Hadžimusić	Head of Department for Food and Tobacco Industries	033-531 847 088 580 029
Ministry of Industry and Technology (RS)	Rade Rodić, Mirko Dobrinjać	Assistant Minister, Agro-industry Expert	051-218 641 051-218 649
Ministry of Foreign Trade and Economic Relations (BiH)	Enver Muratović	Department Manager	033-663 863, ext. 263
Ministry of Agriculture, Forestry and Water Resources (FBiH)	Bihija Hadžihajdrević	Minister	033-217 858
GTZ BiH	Andreas Clausing	Representative	033-260 920
GTZ Private Sector Support Project, and Sector Studies	Wulf Goretzky	Programme Manager	033- 220 596
GTZ Private Enterprise Support Project	Lijana Pavlović	Office Assistant	033-220 596
GTZ Agricultural Support Project	Armin Kloeckner	Project Coordinator	033-216 162
GTZ Agricultural Support Project	Nedim Džano	Project Assistant	033-216 162
GTZ Agricultural Sector Support Project	Peter Munzinger	Agro-economist, Consultant	(0049 3) 34 37 89 799
GTZ Office Banja Luka	Milenko Dulić	Representative	051 - 213 063
GTZ Privatisation Project	Charles Kuhn	Project Coordinator	033-668 433
GTZ Tax Reform Project	Roland von Frankenhorst	Project Coordinator	033-220 301
GTZ Tax Reform Project	Fahrudin Gvoždar	Advisor	033-220 301
Lijanovići, BUS. U. Slaughterhouse	Tomislav Ivanković	Director	039-384 000 039-384 113
Lijanovići (Meat processor)	Ingar Pehar	Chairman of Supervisory Board, Chief of Staff	039-384 000 039-384 109
Meggle Eastern Europe (trader of milk products)	Mr. Vučak	Director BiH	039-682 212
Golden Metro (producer of soft drinks and PET)	Radomir Predojević	General Manager	051-302 675 051-308 389

Organisation	Name	Function	Telephone
Unija-inn d.o.o. (vegetable processor)	Senad Kajimović	General Manager	066-106 273
Vegafruit	Edin Salibašić	Director, Marketing	035 – 722 797
Vegafruit	Fadil Salibašić	Director, Finance	035 – 722 797
Vegafruit (Fruit and vegetable processor)	Muharem Salibašić	General Director	035 – 722 797
Vitaminka	Dragan Pandžić	General Director	051- 300 049
Vitaminka	Selma Škrbić	Commercial Director	051- 300 064
Vitaminka (F&V processor)	Jonaš Ivan	Technical Director	051- 303 435
Voćepromet d.o.o (Trader)	Jasmin Hasanić	General Manager	032- 694 206
Chamber of Commerce, BiH	Faruk Jašarečić	Director, Institute for Education (ECOS)	033- 666 644 033-663 370
Chamber of Commerce, BiH	Enes Alisković	Expert for Fairs and Exhibitions, Foreign Economic Relations	
Veterinary Faculty, University of Sarajevo	Prof. Faruk H. Čaklovića	Dean	033-655 922, ext. 211
Veterinary Faculty, University of Sarajevo	Nihad Fejzić	Senior Assistant, Dpt. of Animal Health Economics	033 – 655 922, ext. 213
Veterinary Faculty, University of Sarajevo	Davor Alagić	Assistant, Dpt. For Food Hygiene & Technology	033-619 868
Faculty of Agriculture, University of Banja Luka	Vaško Željko	Economist	051-319 711
Faculty of Agriculture, University of Banja Luka	Doc. Dr. Gordana Durić	Fruit growing expert	051-461 392
Faculty of Agriculture, University of Sarajevo	Prof. Dr. Hamid Bogučanin	Dean	033-652 034
Faculty of Agriculture, University of Sarajevo	Prof. Dr. Vjekoslav Selak	Senior Agro-economist	033-652 034
Faculty of Agriculture, University of Sarajevo	Aleksandra Nikolić	Senior Agro-economist	033-652 034
Agricultural Institute, Sarajevo	Sead Jeleč	Advisor	033-623 203
Agricultural Institute, Sarajevo	Dr. Nezir Tanović	Director	033-623 203

Organisation	Name	Function	Telephone
OHR	Garold N. Larson	Senior Economic Advisor and Coordinator	033-283 833
OHR	Stuart Thompson	Legal Advisor for Natural Resources	033-283 500
Delegation of the EC to BiH	Mark Priestly	Task Manager	033-666 044
Delegation of the EC to BiH	Gerard van Driessche	Task Manager	033-666 044
Extension Service Project (EU)	Dr. John Barker	Teamleader	033-656 827
CAFAO	Flemming Larsen	Law and Procedures	033-666 040
Entwicklungsgesellschaft EG Tuzla	Hans A. Graf	Project Coordinator	035-255 350
SEED / IFC	Adnan Mededović	Financial Management Analyst	033-217 760
University of Banja Luka	Prof. Dr. Radoslav D. Grujić	Vice-Rector	051-460 884
USAID Business Consulting	Tom Thompson	Teamleader	033-665 770
Agri-Livestock Consultants Ltd.	Dr. Tony Callow	Managing Director	(0031 20) 626 2824
Agriplan (implementing PSO Senter project)	Kees van de Braak	Assistant Project Manager	033- 407 605

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Annex 4: Statistical Data

Country Data Bosnia and Herzegovina

Kennziffern	ME	1992	1993	1994	1995	1996	1997	1998	1999
Population (in country)	1.000	.	.	.	.	3.170	3.000	3.580	.
of which rural population	1.000	2.369	2.214	2.086	2.012	2.002	2.045	2.120	2.198
Employed (total)	1.000	.	.	.	.	260	350	.	.
Employed in the agroindustrial sector	1.000	.	.	.	.	.	.	.	.
Unemployment rate	%	.	.	.	.	50	65	35	.
Total area	1.000 ha	5.112	5.112	5.112	5.112	5.112	5.112	5.112	5.112
Agricultural area	1.000 ha	2.140	2.140	2.000	1.850	1.850	1.850	1.850	.
Arable land	1.000 ha	700	700	600	500	500	500	500	.
Pasture and meadows	1.000 ha	1200	1200	1200	1200	1200	1200	1200	.
Gross Domestic Product (GDP)	%age change p.a.	.	.	.	20,8	69,2	29,5	12,4	16,0
Share of agroindustrial sector of the GDP	%	.	.	.	24,6	20,5	17,5	16,0	.
Index for the agricultural production	1989-91=100	81,9	70,5	55,3	43,4	40,7	45,6	45,8	36,2
Index for crop production	1989-91=100	102,1	87,6	77,9	70,5	74,7	93,0	98,0	66,7
Index for animal production	1989-91=100	68,8	59,7	41,4	24,7	19,3	17,8	15,2	15,2
Consumer prices	%age change p.a.	64.218,3	38.825,1	553,5	-12,1	-21,2	11,8	4,9	-0,6
Producer prices in industry	%age change p.a.	70.374,7	10.967,6	1.184,8	68,7	-4,8	3,2	3,6	4,3
Total foreign trade									
Exports	USD mn	.	.	.	24	58	193	352	518
Imports	USD mn	.	.	.	524	1.204	1.555	2.120	2.431
Balance	USD mn	.	.	.	-500	-1.146	-1.362	-1.768	-1.913
of which agricultural products									
Exports	USD mn	41	19	2	3	3	3	3	.
Imports	USD mn	138	185	297	332	379	428	405	.
Balance	USD mn	-97	-166	-295	-329	-376	-425	-402	.

Crop production in Bosnia and Herzegovina

	1993	1994	1995	1996	1997	1998	1999	BiH (1) calculated 2000	FBiH (1) 2000	Republica Srpska (1) 2000
Kennziffern										
Cereals										
Crop area (1.000 ha)										
Cereals	327	275	258	273	353	375	364			
of which wheat	100	85	83	64	95	106	95	104	24	80
Barley	21	20	15	18	22	24	23	22	10	12
Rye	4	2	3	2	3	4	4		.	3
Grain maize	200	166	156	179	230	210	195	209	49	160
Yield (dt/ha)										
Cereals total	29,5	29,7	30,2	31,0	35,0	32,0	38,0			
of which wheat	23,2	24,0	26,1	25,0	30,0	32,0	.		26	34
Barley	28,6	20,0	23,3	22,0	27,0	26,0	.		17	29
Rye	20,0	25,0	20,0	17,0	24,0	25,0	.		.	27
Grain maize	32,8	33,7	32,8	34,0	35,0	33,0	.		22	23
Production (1.000 t)										
Cereals total	965	818	778	838	1.242	1.184	1.369			
of which wheat	232	204	217	156	287	341	258	336	61	275
Barley	60	40	35	39	58	63	56	53	17	36
Rye	8	5	6	3	7	9	9		.	9
Grain maize	656	559	512	601	830	704	.	472	105	367
Oats	.	.	.	37	59	66	.			
Oil seeds (rape)										
Crop area (1.000 ha)	3	2	1	1	2	1	1			
Yield (dt/ha)	21	17	20	10	12	15	16			14
Production (1.000 t)	6	3	2	1	2	1	2			0,042

								BiH (1) calculated	FBiH (1)	Republica Srpska (1)
Kennziffern	1993	1994	1995	1996	1997	1998	1999	2000	2000	2000
<u>Potatoes</u>										
Crop area (1.000 ha)	50	40	40	45	46	51	49		24	20
Yield (dt/ha)	46	72	75	85	93	82	90		67	64
Production (1.000 t)	230	287	299	379	424	413	438	287	159	128
<u>Sugar beets</u>										
Crop area (1.000 ha)	1	1	0,2	.	.	.	.		0	0
Yield (dt/ha)	550	307	300	.	.	.	.		0	0
Production (1.000 t)	55	16	6,5	.	.	.	.		0	0
<u>Soya beans</u>										
Crop area (1.000 ha)	7,0	3,0	2,0	3,2	3,8	4,5	3,8		0,3	3,2
Production (1.000 t)	10,0	5,0	2,0	5,8	6,5	7,2	8,0	4,2	1,0	3,2
<u>Forage plants</u>										
Production (1.000 t)										
Lucernes	110	94	79	108,1	151,9	145,7	161,9	102,6	50,2	52,4
Clover	200	150	142	192,8	227,2	195,7	213,6		.	.
Meadows (hay)	660	600	580	580	525				.	.
<u>Tobacco</u>										
Crop area (1.000 ha)	4,0	2,0	2,0	2,2	2,1	2,9	2,6	2,7	1,3	1,4
Yield (dt/ha)	15,0	15,0	15,0	13,0	13,0	16,0	17,0		13,0	11,0
Production (1.000 t)	6,0	3,0	3,0	2,9	2,8	4,6	4,3	3,2	1,7	1,5
<u>Fruits</u>										
Crop area (1.000 ha)	75,0	65,0	56,0	54,0	53,0	53,0	37,2		.	51,3
Production (1.000 t)	.	.	.	271,0	241,0	258,0	.			
Apples	24,0	22,0	19,0	18,0	25,0	.	18,0	41,3	14,4	26,9
Pears	17,0	15,0	13,0	10,0	12,0	.	6,4	18,7	8,0	10,7
Plums	50,0	48,0	42,0	56,0	63,0	.	25,0	91,4	26,7	64,7
Sweet cherries	12,0	10,0	8,0	5,0	7,0	.	2,0	6,1	4,6	1,5

								BiH (1) calculated	FBiH (1)	Republica Srpska (1)
Kennziffern	1993	1994	1995	1996	1997	1998	1999	2000	2000	2000
Sour cherries	4,2	3,8	3,0	5,0	2,5	.	3,0	5,3	1,0	4,3
Apricots	0,8	0,8	1,0	0,3	0,4	.	.	0,7	0,5	0,2
Peaches	4,2	4,0	3,0	1,0	1,0	.	0,5	4	3,5	0,5
Table Olives (t)	1,0	1,0	1,0	1,0	1,0	.	.	.	.	.
Figs (t)	0,7	1,0	0,6	0,5	0,5	.	0,3	.	28,0	.
<u>Grapes/Wine</u>										
Grape area (1000 ha)	5	5	4	3	3	4	3,4	3,5	3,0	0,5
Grape production (1000 t)	29	25	18	12	12	16	17	29,7	12,4	17,3
Wine production (mill. l)	12	12	10	5	7	5	6		4,8	.
<u>Vegetables</u>										
<u>Crop area (1000 ha)</u>	86	68	66	72	54	.	39		.	41,7
Beans	14	8	9	10	11	10	10	9,7	4,3	5,4
Cabbage	11	5	7	7,8	9,3	8,2	7,5	7,1	4,1	3,0
Tomatoes	4	4	4	4,4	4,6	5,1	4,7	4,4	2,0	2,4
Peppers	4	3	3	4,4	4,5	4,6	4,4	4,1	1,5	2,6
<u>Production (1000 t)</u>	.	.	.	.	681	685	.	.	.	.
Beans	20	10	11	14	11	14	14	5,3	2,2	3,1
Cabbage	70	64	56	73	98	96	112	69,1	43,0	26,1
Tomatoes	17	40	34	33	40	46	37	29,8	13,3	16,5
Peppers	15	25	21	25	35	36	42	29,2	11,5	17,7
Carotts	10	7	7	10	13	15	15	.	.	3,1
Onions	22	16	24	34	40	43	37	21,9	15,0	6,9
Garlic	4	3	4	7	9	11	9	25,5	3,0	22,5

Livestock Production in Bosnia and Herzegovina

	1993	1994	1995	1996	1997	1998	1999	2000	Federatio n F BiH (1)	Republica Srpska (1)
<u>Meat</u>										
Meat production total (1000t)										
including edible offals (1000 t)	89	67	48	44	35	24	24		.	.
of which edible offals	7	5	4	4	4	4	.		.	.
Meat consumption, total										
including edible offals (1000 t)	100	75	55	52	54	65	.		.	.
<u>Cattle</u>										
Cattle stock (1000 head)	630	550	380	205	217	230	350		.	.
of which dairy cows	470	380	250	152	159	165	.		.	.
Beef and veal production (1000 t slaughter weight)	34	22	13	15	13	16	8,8		.	.
Beef and veal consumption (1000 t slaughter weight)	34	24	16	16	18	20	.		.	.
<u>Pigs</u>										
Pig stocks (1.000 Heads)	460	280	175	91	81	85	80		.	.
of which breeding sows	100	60	45	12	13	15	.		.	.
Porc (1.000 t slaughter weight)										
Production	29	20	14	10	6	10	4,5		.	.
Consumption	28	25	20	20	18	20	.		.	.
<u>Sheep</u>										
Sheep stocks (1.000 Heads)	1.000	750	500	237	264	290	285		.	.
of which breeding ewes	720	620	340	171	189	200	.		.	.
Mutton production										

(1000 tons slaughter weight)	10	10	8	5	4	6	2,7			
									Federatio n F BiH (1)	Republica Srpska (1)
	1993	1994	1995	1996	1997	1998	1999	2000	2000	2000
Mutton consumption (1000 tons slaughter weight)	24	18	15	15	16	16	.		.	.
Wool production (tons)	1.100	900	600	322	364	390	350		.	.
Wool/Sheep (kg)	1,2	1,2	1,3	1,6	1,6	.	.		1,7	.
Milk production, sheep (1.000 t)	12	10	8	6	7	8	3,5		7	.
<u>Poultry/Eggs</u>										
Poultry stocks (1.000 Heads)	6.100	4.800	2.400	1.481	1.877	2.350	.		3.850	.
of which hens	3.650	2.900	1.560	1.090	1.178	1.400	.		2.300	.
laying hens	3.420	2.700	1.495	1.065	1.170	1.320	.		.	.
Geese	180	150	150	150	160	150	150		.	.
Turkey hens	150	120	120	120	140	.	.		.	.
Poultry meat production (1.000 t slaughter weight)	16	15	13	14	12	14	8,2		6	.
Laying performance per hen (eggs per year)	107	103	118	124	157	148	.		182	.
Egg production (mill.)	370	280	180	132	185	200	185		303	.
Egg consumption (mill.)	670	400	390	340	360	380	.		.	.
<u>Milk</u>										
Milk performance per cow (kg)	2.300	2.410	2.060	2.244	2.420	.	.		1.759	.
Milk production (1000 tons)	710	550	320	214	237	260	213,5		246	.
of which cow's milk	698	537	309	201	230	251	210		.	.
<u>Equines</u>										

Horse stock head (1.000 Heads)	75	60	40	18	19	22	50		17	.
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