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**AN ASSESSMENT OF  
AGRICULTURAL MARKETING CONSTRAINTS  
IN THE REPUBLIC OF MACEDONIA**

by

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**This report expresses the findings, conclusions, and recommendations of the consultants only and does not imply concurrence or agreement by the Agency for International Development or the Government of the Republic of Macedonia.**

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## ACRONYMS AND ABBREVIATIONS

bu	Bushel
CMEA	Council for Material Economic Assistance
CRIC	Centre Regionale International Cooperation
CRS	Catholic Relief Services
cwt	Hundredweight
DM	German Marks
Dn	Macedonian Denars
EU	European Union
ha	Hectares
hr	Hour
IFAD	International Food and Agriculture Development
kg	Kilograms
LOL	Land O' Lakes
lt	Liter
mt	Metric ton
MAFWE	Ministry of Agriculture, Forestry, and Water Economy
MCIC	Macedonian Center for International Cooperation
SME	Small and medium enterprise
SOAEs	Socially-owned agricultural enterprises
SOEs	Socially-owned enterprises
USAID	United States Agency for International Development
US\$	United States Dollars
VOCA	Volunteers in Overseas Cooperative Assistance

## EXECUTIVE SUMMARY

Historically, as part of Former Yugoslavia, Macedonia's agriculture and industrial production was marketed in the other 5 republics with imports coming primary from northern Former Yugoslavia. Traditionally, the postharvest processes of assembly, marketing, processing, distribution, and international trade were exclusively activities of the social sector (socially-owned enterprises) with indirect government control. Fixed prices were administered and social sector activities were directed by government planning authorities. In short, producer and processors in Macedonia provided agricultural products which flowed north in the Yugoslav state, were processed, and then distributed throughout the state and international markets. This process created a ready market for the produce output of private farmers as well as socially-owned agricultural enterprises (SOAEs).

In principle, the market was created through government planning and the only problem became production. With the advent of independence and the movement to a private-sector economy, marketing now becomes a critical element in the economy.

The most heard comment by the team during interviews with producers, processors, and traders alike was, to paraphrase, "where can we find a market for our products". This can be classified as limited access to markets. Access to markets can be limited for various reasons, and thus can be divided into a series of marketing constraints faced by both agriculture and agribusiness sectors alike.

### Findings

The team's finding is that there is no major market constraint, nor several major market constraints, which would be key components to resolve for an assured near-term improvement in the agricultural/agribusiness marketing system. The team finds that there are a series of constraints which must be addressed in some united fashion.

#### **Lack of Marketing Information**

The lack of a marketing information system which details prices and quantities in markets country-wide for all major commodities and food products.

#### **Lack of Market Intelligence**

The lack of a systematic process which provides an array of intelligence information on domestic as well as export markets.

### **Product Quality**

A lack of understanding of specific commodity standards whether it be quality issues related to health aspects or grades and standards systems, especially as related to pricing of products.

### **Limited Number of Viable Private-Sector Intermediaries in the Marketing System**

There has not been an clear emergence of a significant number of brokers, traders and wholesalers capable of facilitating the market clearing forces in Macedonia.

### **Cost of Production, Cost of Processing**

While this appears to be a production problem, it is in reality a marketing problem. No one really seems to know their cost of production, what margins are, or what margins should be.

### **Lack of Understanding of Current Market**

There is no accurate understanding of how the current system operates.

### **Lack of Understanding of Private-Enterprise Market Systems**

There is no fundamental understanding of a consumer demand-driven market system nor the concept of the consumer approach to marketing products.

### **Lack of Liquidity in the Market System**

The one thing that a viable marketing system requires is trade finance, or it may be called marketing finance. The absence of liquidity in this system jeopardizes the ability of private firms to perform regular and consistent business transactions.

### **Institutional Rigidity**

The government process seems to unduly complex and sometimes rigid in its approach towards a private-sector economy.

### **Commodity Sectors**

Vegetables and Fruits will have little if any increase in domestic consumption over the natural growth of population. Further, imports of fruits not produced in Macedonia will affect levels of domestic fruit consumption.

Vegetable production well exceeds some 430,000 mt annually. The principal commodities are tomatoes, potatoes, peppers, cabbage, onions, garlic, cucumbers, carrots, peas, beans, and lentils.

Nearly all of the total production is carried out by the small-scale private farmer. This production amounts to 207 kg per capita and consumption level is 87 Kg per capita (run clean numbers). This amounts to domestic consumption being 42% of production. As compared to Western Europe, vegetable consumption can be considered in the range where very little significant increase in domestic consumption will occur.

Fruit production normally ranges from 450,000 to 500,000 mt annually. The principal commodities are grapes (table and wine), melons, apples, plums, pears, cherries, peaches, apricots, and quinces. Of the total production, about 75% is produced by the small-scale private farmer. Fruit consumption is 49 kg, or 30% of production excluding wine grapes. Fruit consumption is somewhat understated because there is no measurement of citrus, bananas, or pineapple (import products) which can be found in wholesale market in substantial amounts. As compared to Western Europe, fruit consumption can be considered in a range in which there will be little increase.

Animal Products have an opportunity to access both increases in the domestic market and target specific products to the export market. Meat consumption only averages some 28 Kg per capita while milk products average 79 Kg per capita. However, per capita consumption of eggs is an average of 7 Kg. Imports of meat and dairy products to fill the deficit between consumer demand and domestic production are significant due to deficit domestic supplies.

In the internal market, there is a prospect for expanded sales through increasing domestic consumption of Macedonian products by offsetting the level of some of the products being imported. This import substitution approach to domestic marketing must be directed towards meeting import competition on the basis of cost and quality. This means that production costs will be as equally important as processing costs, and thus the aspect of the feed grains situation will be important.

Alternatively, there are specific surpluses in the animal sector, for example lamb and eggs. These will need to be addressed from either an export market stance, in the case of lamb or eggs. In the case of lamb, the market development focus must be timing and quality specifications as well as price. In the case of eggs, further processing of eggs for external commercial bakery and processing markets must be evaluated as to production and processing feasibility.

Further, in the animal products group there is a great possibility that a change of product possibilities would dominate the scene. As an example, the switch from egg production, now a surplus commodity, if statistics are correct, to broiler production to compete against imports.

## Conclusions

The agricultural marketing constraints, while evident across all commodity sectors will be more easily addressed if remedial actions are commodity-sector oriented. The basis for a commodity perspective is that primary commodity groups each require different marketing approaches due to the characteristics of their market. The commodity sectors are therefore divided into two groups: (1) vegetables and fruits, and (2) animal products and supporting feed grain segment.

The major focus for market development in the fruits and vegetable sector must be on development of external markets; expanding knowledge of foreign markets; improvements in canned, frozen, and dried processing systems for processed products for external markets; quality, health, and safety standards of products destined for external markets; and such regulatory conditions as phytosanitary laws, label laws, and packaging regulations.

The major focus for market development in the animal products sector must be directed towards import substitution and the development of specific external markets. There is a potential for expansion of more than doubling domestically produced meat production. There is a potential for expanding dairy production by at least 25%.

Also, by focusing activities by commodity group, actions can utilize resources more efficiently in enabling the private farmer to gain access to markets. It is the teams' position that a focus on a commodity group may enhance the broad project activities of other donor agencies.

## Recommendations

Because of the difference in achieving end market needs, the team recommends that alleviating market constraints be approached on a commodity group basis. The products, current end markets, potential future markets, and market channels are different for each of the commodity sectors.

Four important issues should be examined in developing marketing approaches by commodity sectors.

1. There is a need to utilize marketing approaches that lead to demand-driven production rather than desperately trying to find markets for a commodity which has been historically produced by habit or command.
2. There is a need to determine the critical marketing impact points in each individual commodity. This means determination of the primary marketing advantage for that commodity: raw, processed, quality, low-cost, packaging, uniqueness.

3. Regardless of whether the target is the export market or internal market import substitution, it must be determined if the commodity can be price and quality competitive. Can the cost of production and cost of processing be reduced through the appropriate application of skill technology and management enhancement?
4. The export markets must not be viewed as just ordinary markets into which goods can be sold. They must be viewed from a specialty export market stance, what the trade normally calls niche or target markets.

### **Vegetable and Fruit Sector**

The key to resolving market limitation is external markets, but external markets for what type of product: particular vegetable or fruit, processed or raw, and in which proportion processed or raw. Value-added processing will have to be carefully addressed so as to position the country correctly in the export market place vis-a-vis its competitor countries.

This means that an overall program will have to be developed which addresses market constraints and assist in overall development of external marketing. Therefore the key points would be as follows.

Develop a market information system that is more than just a market price and quantity reporting structure. Such a system must also include (1) an analytical process which uncovers deficiencies in production cost, processing cost, transportation cost, and marketing cost patterns; (2) a descriptive analysis of how the current system is performing, its strengths and weaknesses, and exactly where these strengths and weaknesses lie within the market system; (3) analyses by individual commodity to determine what are primary market advantages and disadvantages; (4) an outlook analysis that details potential export markets and the activities within these markets, and (5) an outreach process that delivers these findings to market participants.

Construct a market development process which provides a knowledge base for assisting market participants. The immediate need, from a marketing standpoint, is to determine the following questions.

- \* What are primary products being produced now and what exactly are the specific surpluses?
- \* What are secondary products being produced and exactly what are the specific surpluses?
- \* What is saleable externally in raw form and what are quality specifications?
- \* What are prices and can Macedonian production be price competitive?
- \* What is saleable externally in processed form? Can it be processed to specifications required? What will it take to

process to specifications? What will be the costs of processing?

- \* What are prices and can Macedonian processed products be price competitive?
- \* What can be grown in Macedonia that is demanded and salable in external markets so as to get out of the tomato trap?
- \* What are the target markets and can they be accessed?
- \* How can existing and potential Macedonian enterprises be connected with import businesses in other countries.
- \* What market standards are necessary such as labeling, packaging, shipment containers, modes of transport, and health and sanitary regulations in an external market?

Create a **market organization development process** which provides training and technical assistance programs directed at improvements in the agribusiness sector for:

- \* enhancing marketing, financial, operational, and general management skills;
- \* reducing cost of production and processing by improving efficiencies of operation or introduction of appropriate cost effective technology;
- \* creating standards for quality and practices for maintaining quality of output; and
- \* formation of marketing associations that allow for marketing of a particular product in large lots, or the ability to supply several buyers at the same time.

#### **Animal Products Sector**

In this sector there is a need to follow an import substitution approach in the deficit product area and a selective export market approach in the surplus product area. These approaches will have to be combined in a united effort so as to allow for production conversion if so warranted.

In the animal products sector, the same basic approach must be undertaken as in the vegetable and fruits sector because marketing constraints which must be addressed are the same across all sectors. However, because of the dual approach in this sector, the focus of activities is quite different.

Further, there is the underlying need to address the question of the lack of feedstuff availability as well as protein supplements, which are essential in an animal industry production system. The key points are as follows.

Develop a **market information system** that is more than just a market price and quantity reporting structure. Such a system must also include (1) an analytical process which uncovers the cause for the lack of supply of animal products in the domestic market, either production or marketing reasons; (2) an analysis that deals with

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the supply situation of carbohydrate-based feeds and protein supplements, including reclaim systems in the meat industry (blood and bone meals and tankage); (3) an analysis of production factors and costs in basic livestock rearing practices and how these factors and costs relate to prices for livestock and livestock products; (4) feasibility analysis that deals with change of commodity production, for example from eggs to broiler; (5) an analysis that details potential domestic markets and the activities within these markets, (6) product specific analysis of surplus commodities with a determination of potential export possibilities and/or potential for product change; and (7) an outreach process that delivers these findings to participants in both the marketing and production segments of the animal products industry.

The critical point is that there appears to be a production efficiency constraint that may be a far greater problem to overcome in the import substitution approach to marketing, than the existing marketing constraints.

Construct a market development process which provides a knowledge base for assisting market participants. For example, the following questions need to be addressed.

- \* What is the quantity, quality, and prices of animal products now being imported?
- \* How do import products compare to domestically produced products in the terms of price and quality?
- \* What specific changes are required in Macedonian products to be competitive in the domestic market?
- \* What can be done to enhance the domestically-supplied feed-stuff and protein supplement industry in Macedonia?
- \* What specific marketing actions would increase Macedonian product sales in the domestic market?
- \* What broad range of markets exist for surplus products, and what are the potentials of this market?
- \* Where, if any, are target specific markets for strictly specialty items such as Macedonian cheese?
- \* What type of product-specific export market arrangements could be developed for surplus products?

Create a market organization development process which provides training and technical assistance programs directed at improvements in the production and marketing sector for:

- \* enhancing marketing, financial, operational, and general management skills;
- \* improving production efficiencies in livestock and meat industries;
- \* improving production capabilities in the grains sector to assure a supply of grains for the feed industry;
- \* improving production efficiencies in the dairy industry;

- \* improving, or creating, new opportunities for supplying feedstuffs to the animal industry;
- \* new product development or development of products not being currently produced; and
- \* formation of production and marketing associations to act as intermediaries in the dissemination of information which would increase their memberships knowledge of more efficient production and marketing practices.

## SECTION I THE SETTING

The former Yugoslav Republic of Macedonia officially became a sovereign state, The Republic of Macedonia, in September, 1991 through an election held in November, 1990, in which it proclaimed its statehood. The Republic of Macedonia was the only republic of Former Yugoslavia to gain independence peacefully. The term "Macedonia" is used in this report to represent the Republic of Macedonia for convenience; its use is not intended to have international, legal, or diplomatic significance.

### Availability of Information and Sources

The available information gathered on the Macedonian situation, relating to agriculture and agribusiness, is set forth in Annex II. Annexes III, IV, and V contain data sets on the general economy, agriculture, and agribusiness/trade, respectively. The statistical information provided is derived solely from reports of the Statistics Office for the purposes of consistency. Other statistical data sets exist which are at variance with the Statistical Office data.

Subsector reports are provided for dairy and meat, fruits and vegetables, and grains in Annexes VI, VII, and VIII, respectively. A list of contacts which the team interviewed is set forth in Annex IX.

One of the major problems in describing the characteristics of the total agriculture/agribusiness sector is the lack of any coherent descriptions of what is going on in any agri-product sector. For example, existing documents place the number of private farmers anywhere from 170,000 to 177,000. However, it is also stated that the last census (1990/91) placed the number of private farmers at 162,000. This was a decline from the prior census (1980/81) of 176,000 private farmers. Further, average farm size is quoted from 2.07 to 2.8 hectares with different percentages of farms by size, depending on the source. The number of socially-owned agricultural enterprises (SOAEs) is generally quoted as 216 or 217, but the Privatization Agency says there are over 300 agricultural enterprises in the transition process to privatization. Exact land occupation by SOAEs seems to range from 186,000 to 200,000 hectares in total, consequently leading to differences in average size statements.

Therefore the descriptive process will portray the best possible representation given the diversity in information sources as well as conflicts in interview results.

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## Country Background

Macedonia is a land-locked country bordered to the east by Bulgaria, south by Greece, west by Albania, and north by Serbia. Macedonia has a total land area of 2.57 million ha of which 1.3 million ha is classified as agricultural, nearly 51%. The agricultural land can be further classified as 661,000 ha of arable land composed of 382,000 ha of cropland and gardens, 20,000 ha of orchards, 32,000 ha of vineyards, 54,000 ha of meadows, and 227,000 ha called fallow land. There is 635,000 ha of permanent pasture and 2,000 ha of ponds, reed beds, and fishponds. A large area of Macedonia is classified as forest, composing 906,000 ha or 35% of the land area.

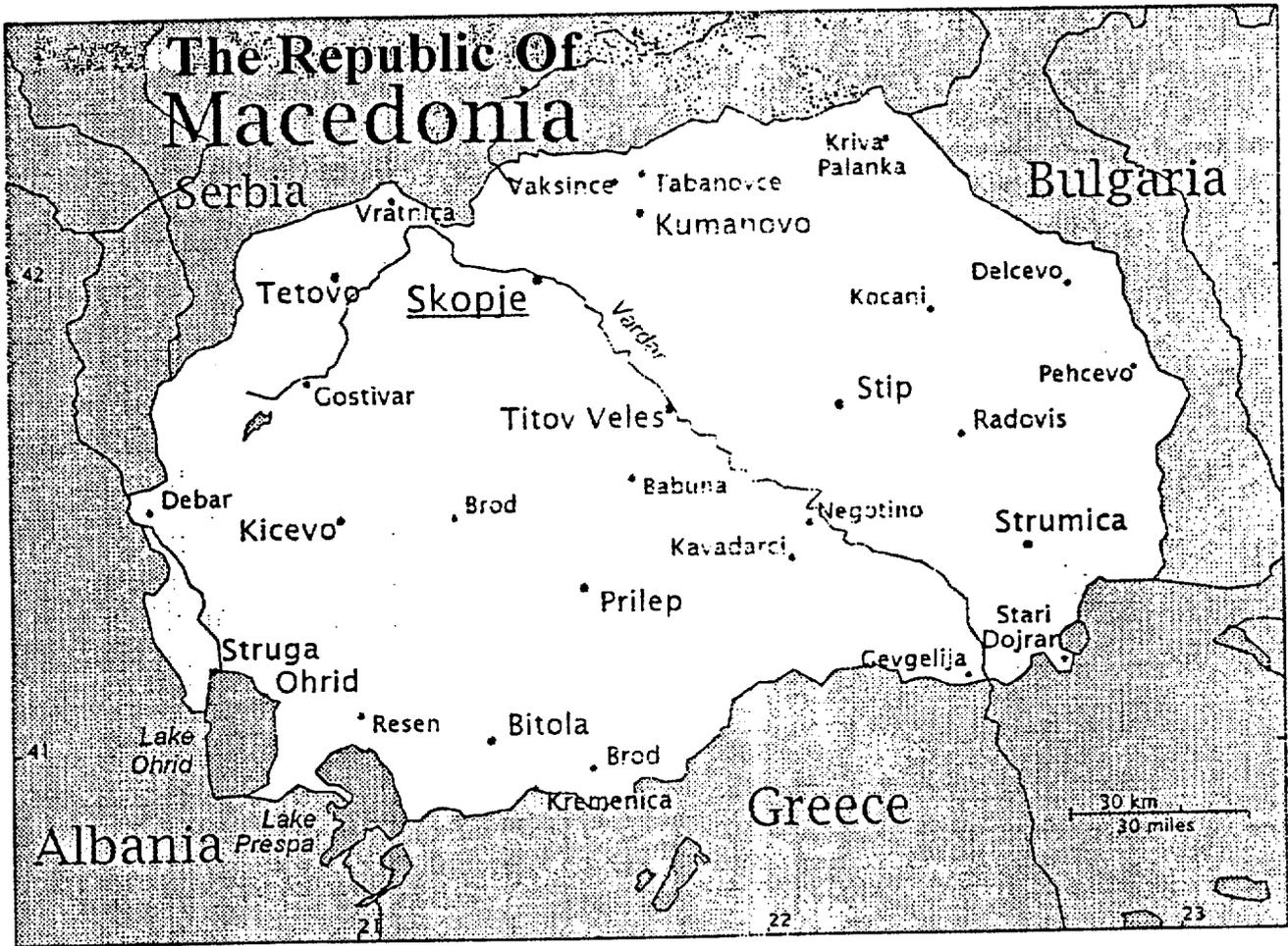
Macedonia's climate can be basically divided into 3 climatic zones: modified mediterranean (along the Vardar river), which is characterized by relatively mild winters and warm summers; modified continental (Bitola and Prilep area known as the Pelagonija Plain) which has cold winters and warm summers; and mountainous, which is characterized by cold winters and a short, wet, summer growing period.

The population of the country is 2.1 million with a density of 81 per square kilometer and an average household size of four. The population is divided 58% urban and 42% rural. The capital of Skopje has an estimated population of 460,000. The next 5 largest cities are Bitola, Prilep, Kumanova, Tetova, and Titov Veles, which have estimated populations of 85,000, 71,000, 70,000, 52,000, and 48,000, respectively.

## **Macro-Economic Situation**

Historical past policies of Former Yugoslavia promoted a wide range of vertically-integrated socially-owned enterprises (SOEs) in the industrial sector. Less developed regions, of which Macedonia was one, received large direct transfers of capital for industrial development, subsidized credit, fiscal incentives, preferential allocations of foreign exchange, and targeted markets within Former Yugoslavia and Council for Material Economic Assistance (CMEA) Countries (East European socialist countries).

Since Macedonia became a sovereign state, it has experienced economic difficulties because of external and historical factors. The economy suffered severe shocks due to the loss of markets in the middle east after the Persian Gulf War, and loss of markets due to the collapse of the Soviet Union. The military conflicts in the other republics of Former Yugoslavia, and a diplomatic dispute with Greece, led to the United Nations' sanctioned embargo imposed on the warring republics and the closure of the Greek Border, respectively. These embargoes lasted for a 2-year period and were finally lifted in December, 1995. The result was a further



breakdown in trade and capital flows, a deterioration in infrastructure, and a loss of historical market outlets for agricultural and manufactured products. Previously, as part of the Former Yugoslavia, 60% of Macedonia's agricultural and industrial trade was with the other 5 republics with imports coming primarily from these same republics. The Macedonian economy depends heavily on external sources for oil and gas, and modern machinery and parts as well as a market for agricultural products and manufactured goods.

The economy of the country is in a transitional stage from the social ownership structure inherited from Former Yugoslavia to a private-enterprise system. Under the previous system, capital was owned by society at large with enterprise management being guided by worker's councils. The government, during 1993/94 enacted basic laws to begin to transfer SOEs to the private sector.

A shrinking revenue base and the embargoes created a wage price spiral that led to hyperinflation in the early 1990s. Inflation is quoted as being 1,925% in 1992, 229% in 1993, and 54% in 1994. It should be noted that inflation rates quoted by different sources depends on which set of indexes or indicators are used to calculate an inflation rate. It is sufficient to say that the country has experienced a hyperinflation problem since independence which was encouraged by previously high rates of inflation prior to independence (Annex III). It appears that government has stabilized this situation with budgetary discipline and monetary policies since 1994. The cost of living index for 1995 was 16% over 1994 indicating the fiscal and monetary measures undertaken had reduced the inflationary spiral from a hyperinflation context to more controllable situation. This is further reinforced by the current estimates of the cost of living index for the January-September 1996 period being 3.9% less than December, 1995; and the retail price index, during this same period, being 2.5% lower than December 1995.

Unemployment as based on workforce numbers composed of employment plus registered unemployed results in a current rate of nearly 40%. The economically active population which includes those employed in economic, noneconomic (government, health, education), private-sector owners/workers and their employees, and the small private farmer segment ranges from 905,000 to 950,000. Using this base to compare unemployment results in a current rate of 24%. Regardless of which approach is utilized, these rates of unemployment are indicative of the economic strain under which the country operates. Industrial employment has declined some 42% while the agriculture/agribusiness sector has declined only 24%, for a total decline in employment rolls of 38%.

The foreign trade situation is as equally discouraging as employment. Trade balances have been negative, reaching over US\$400 million in 1990 and nearly the same amount in 1994; and reaching an

estimated deficit of over US\$500 million in 1995. The total trade deficit since 1990 has amounted to approximately US\$1.7 billion.

The foreign trade situation is reported to be further deteriorating in 1996. Exports during the first half of 1996 have declined by 30%, while imports only declined by 2.8%, compared to the same period in 1995. The negative trade balance in the first half of 1996 is estimated at US\$311 million. If this continues, the trade deficit at the end of 1996 could well exceed US\$600 million.

Macedonia's principal trading partners in 1994 were Bulgaria and Germany with secondary trading partners being Italy and Slovenia. Approximately 90% of external trade was with countries located in Europe.

### **Agriculture**

Agriculture is highly important to the Macedonian economy because

- \* agriculture currently generates 22.8% of social product in real terms;
- \* agriculture has only declined 12% (index of production) in real terms, while the industrial sector (index of production) has declined 52% in real terms, since 1990; and
- \* the agricultural private sector has provided the support that limited the production decline to 12% through holding its own production decline to 6%, while public sector agriculture declined 42% (nearly as much as the industrial sector).

It is stated that agriculture makes only a minor contribution to economic employment. If one takes into account the economically active population, the stated level of the agriculturally employed, and the small farmer; then the agriculture production section provides about 38% percent of the employment opportunities for the economically active population. If one further includes agribusiness employment, then agriculture and agribusiness provide 43% of the employment opportunities. This emphasizes the importance of agriculture and agribusiness in the structure of the overall economy.

As previously described, the land base for agricultural production is 1.298 million hectares composed of 661,000 hectares considered cultivatable and 637,000 hectares of pasture and other land. The cultivatable land is divided into 382,000 ha of cropland, 20,000 ha of orchards, 32,000 ha of vineyards, and 227,000 ha of what is called fallow land. Production on cropland is divided into 242,000

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ha of cereals, 47,000 ha of industrial crops<sup>1</sup>, 57,000 ha of vegetable crops, and 36,000 ha of feed crops<sup>2</sup>.

In contrast to other sectors, agricultural production has been predominately a private sector activity in the country. A large number of SOAEs were established as a strategy to promote growth of social sector agriculture to achieve large-scale production units and self-sufficiency in food. The social sector operated on land with more irrigation infrastructure and modern technology; and had greater access to capital. However, these large-scale units never replaced the private-sector farmer.

The structure of agricultural production is comprised of some 162,000 small private farmers and over 200 large SOAEs, known as agro-kombinats and cooperatives. The average size of small farms is somewhere over 2.5 hectares while the average size for SOAEs is about 1,000 hectares.

Private farmers cultivate some 200,000 hectares producing 75% of total production, while the SOAEs farm about 182,000 hectares producing 25% of production. Essentially, SOAEs cultivate 48% of the productive land area and produce 25% of total agricultural produce, whereas the private farmer cultivates 52% of the productive land and generates 75% of the total agricultural produce. This includes animal production as well as plant production.

#### Donor Activities in Agricultural Development

Donor development activities within the Macedonian agriculture/agribusiness sector encompass a wide variety of actions which are described as grouped by donor agency.

#### **World Bank**

Currently, the World Bank is initiating 3 lending projects which are related to agriculture and agribusiness.

- \* Private Farmer Support Project -- The project's objectives are to develop a system of market price information; support the privatization of veterinary services; improvement of the quarantine and veterinary services through training and technical equipment; encourage the shifting of responsibility for agricultural extension services to some type of cost-sharing basis with farmer organizations; and carry out applied agricultural research. Funding is estimated at US\$ 19.5 million with project implementation to begin in 1997. US\$9.1

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<sup>1</sup> Sunflower, Tobacco, Sugar Beets, Industrial Peppers, Cotton, and Poppy Seed.

<sup>2</sup> Alfalfa, Clover, Hay, and various fodders.

million is to be directed towards the food industry for processing and technical improvement.

- \* Private Sector Development Project -- The project's objectives are to promote the growth of the private sector and improve conditions for effective supply response from private enterprise and farmers; facilitate adoption of safe and sound banking practices; and promote credit market competition. The project is comprised of 2 components: a private investment finance component for investment and working capital for private enterprises; and a private farmer finance component for investments by private farmers to expand agricultural output. Funding is estimated at US\$12 million with project implementation to begin in 1997.
- \* Irrigation Restructuring and Rehabilitation Project -- The project's objectives are to rehabilitate and improve irrigation systems that benefit private farmers with user participation, and promote the transfer of irrigation management to users. Funding is estimated at US\$24.0 million. The project is currently under preparation with implementation some time in late 1997.
- \* Structural Adjustment Loan and Credit -- The objectives are to promote basic economic reformation by liberalizing further current trade policies; reform in agricultural policies; further privatization of agriculture; and complete privatization of industrial and commercial enterprises. In trade policy the principal aim is to reform tariffs and surcharges on wheat, wheat flour, sugar, milk, cheese, and edible oil. In agricultural policy, the effort is to reduce interventions in output price, end input subsidies, limit and reform the operations of the Agency for Strategic Reserves, and reorient the Ministry of Agriculture, Forestry, and Water Economy (MAFWE) away from intervention actions and towards policy support for private agriculture and agribusiness. Agricultural policy actions will also encourage privatization of 214 SOAEs composed of 163 agro-kombinats and 51 cooperatives; and ceasing interventions in output price and subsidization involving wheat, tobacco, sugar beets, sunflower, and the retail price of bread. This loan is currently being negotiated with the Government of Macedonia.

Projects under consideration by the World Bank involving loans as well as non-lending services are as follows.

- Agricultural Support Services -- This is a proposed project for 1999 which would build on the current Private Farmer Support Project and establish the institutional basis to access and adapt technological and managerial innovations for a sustainable, competitive agriculture sector.

- **Agricultural Input Guarantee Project --** A non-lending service targeted for 1997 which would meet the needs for short- and medium-term working capital finance in support of the country's efforts to reform agricultural input supply, production, and processing sectors. The proposed action is a 6-year project at a level of US\$50 million. This project is not a loan, but a contract guarantee mechanism with an annual guarantee fee which is passed on by the lenders to those purchasing guarantee coverage for supplying inputs on credit to Macedonian agribusiness firms.
- **Agricultural Policy Study Tour --** A non-lending service targeted for 1997 to enable government leaders to interact with New Zealand policy makers who have had the practical experience of working through liberalization of their agricultural economy.
- **Agricultural Coordination and Strategy --** A non-lending service targeted for 1997 to assist MAFWE in donor coordination to insure complementary, non-duplicative support for agriculture; and formation of a Macedonian agricultural strategy document.

**United States Agency for International Development**

- \* **Volunteers in Overseas Cooperative Assistance (VOCA) Macedonia Program --** The project activities provide technical assistance and training in the areas of veterinary and dairy industry, private agricultural production, private association development, food processing, rural agricultural credit, and business planning and management for rural entrepreneurs.
- \* **Macedonia Resource Business Center --** This project provides technical assistance and training in marketing, business techniques, and management to private-sector commercial and agribusiness firms as well as evolving entrepreneurs in the private sector.
- \* **Livestock and Dairy Project --** This project encompasses animal health, marketing, and association development to improve the quality of animal and dairy products and assists with determination and expansion of animal products in the export market.
- \* **Rural Finance Project --** This project concentrates on rural finance through the formation of credit union style savings organizations in rural areas where there is little, if any, access to financial services.
- \* **Improved Marketing Opportunities for Rural Communities in Macedonia --** This is a small enterprise development pilot project to provide marketing and business assistance to farmer/producers at village level.

## **EC/PHARE**

The European Community's development program has three projects related to agriculture and agribusiness which have been negotiated with the Government of Macedonia. Project implementation is expected to begin in 1997.

- \* **Agriculture Project** -- The activities include improving current as well as new phytosanitary programs; improving veterinary practices and activities; land-reform activities which will support privatization actions in agriculture including research on issues of landholding policies; assistance in land registration procedures; program management structures and techniques including establishing a project coordination unit in MAFWE; and policy advise. Funding is estimated at US\$4 million.
- \* **Private Sector Enhancement Project** -- Activities include establishing a national Small and Medium Enterprise (SME) Center with 2 regional offices and 2 satellite offices. This center will be an independent agency as now envisioned with linkages to the Ministries of Economy, Finance, and Development. This project also involves a pilot credit scheme for providing loan assistance to SMEs. Funding is estimated at US\$4 million.
- \* **Statistics Project** -- Activities include enhancing the capability of the Statistical Office of Macedonia through the application of technical assistance, computer hardware including client servers, data classification support, and creation of registers and databases. Funding is estimated at US\$2.2 million.

## **Other Bilateral Donors**

As many other bilateral donors were identified as possible, although the team believes that there exists more bilateral donors and private voluntary organization which it could not identify.

- \* **Japan:** Funding through the World Bank Trust Fund to provide assistance in privatizing agro-kombinats.
- \* **Austria:** Funding through the World Bank Trust Fund to develop a horticulture wholesale market.
- \* **Netherlands:** Funding through the World Bank Trust Fund to provide additional resources for the Agricultural Inputs Guarantee Project.
- \* **Germany:** Potential development assistance in the irrigation subsector, however details and structure are unknown.

Credit program of DM20 million through the Almako Bank with loans available to agriculture and agribusiness. The bank has loaned funds to dairy, swine, fish, poultry, and beef cattle operations.

Westphalia Germany small rural loans program of DM500,000, however the details and structure are unknown.

- \* International Food and Agriculture Development (IFAD): Providing assistance for a rural rehabilitation program in mountainous areas. Funding estimated at US\$10.2 million.

#### **Private Voluntary and Non-Government Organizations**

In addition to the activities of Volunteers in Overseas Cooperative Assistance (VOCA), Land O' Lakes (LOL), and Catholic Relief Services (CRS) projects supported by the United States Agency for International Development (USAID) and previously described, two other organizations were identified with activities related to agriculture.

- \* Macedonia Center for International Cooperation (MCIC) -- A Macedonian non-government organization funded primarily by organizations in Denmark, Netherlands, and Switzerland. Primary activities are in the areas of community development, promotion of employment, health systems, and water supply at village level. As a result of perceived need, they have developed a market price notification process that informs villages of weekly prices of 55 agricultural products in 6 different major market centers. The notification system uses a summary code to approximate quantities in the market which operates on the principal of available supplies versus amounts being purchased. A pricing sheet is sent weekly to, and posted in, every village where MCIC has activities. This is considered a pilot program which has only been in actual operation since April, 1996.
- \* Centre Regionale International Cooperation (CRIC) -- An Italian private voluntary organization which previously worked in humanitarian assistance and is currently developing a live-stock program in milk pasteurization.

## SECTION II THE MACEDONIA POSTHARVEST SYSTEM

Historically, as part of Former Yugoslavia, Macedonia's agriculture and industrial production was marketed in the other 5 republics with imports coming primary from northern Former Yugoslavia. Traditionally, the postharvest processes of assembly, marketing, processing, distribution, and international trade were exclusively activities of the social sector (socially-owned enterprises) with indirect government control. Fixed prices were administered and social sector activities were directed by government planning authorities. In short, producer and processors in Macedonia provided agricultural products which flowed north in the Yugoslav state, were processed, and then distributed throughout the state and international markets. This process created a ready market for the produce output of private farmers as well as SOAEs.

In principle, the market was created through government planning and the only problem became production. With the advent of independence and the movement to a private-sector economy, marketing now becomes a critical element in the economy.

### Commodities

Sources and interviews quote that the categories of produce grown in Macedonia should be ranked in importance as fruits and vegetables; dairy and meats; and finally cereals.

In terms of production numbers, this holds some logic since tonnage of fruits and vegetables equals some 850,000 mt, animal products equates to about 205,000 mt, and cereal crops (including those for animal feed) equals 600,000 mt. Further, the emphasis on what is ranked first and second is focused on the need to develop markets for surpluses in the fruit and vegetable sector; and the need to further develop the milk and meat industries to meet current and future consumption patterns as well as to remove the surplus of eggs from the market.

The focus on grains is minimal since wheat is being imported to meet consumption demand. The animal feed industry seems to have been somewhat forgotten even though there is a deficit of feedstuffs, especially protein-based supplements for efficient production.

### Consumption

The expenditure on food in 1989 was 35% of the household budget. By 1990 this had risen to slightly over 44%. In 1992 it reached a peak of nearly 49%; then in 1994 it declined to slightly over 47%.

Average expenditures as a percent of household for food products during the 1992-94 period were 21% for meat, 22% for cereal products (primarily bread and flour), 18% for dairy products, 10% for vegetables, and 9% for fruits.

Per capita consumption of food products is dominated by wheat products with averages of 122, 47, and 9 kg, for bread, flour, and other cereals, respectively. Vegetable consumption averages 87 kg per capita while fruits average 46 kg per capita. Meat consumption only averages 28 kg per capita while milk products average 79 kg per capita. Per capita consumption of eggs is an average of 7 kg.

On the whole, the only food category that can be considered low is the consumption of meat and processed meat products.

### Internal Markets

The loss of historical markets described above resulted in a number of ways that producers are attempting to market their output. Some of these procedures have been historically in place, however others are relatively new approaches in the attempt to find markets.

- \* **Sales of produce to SOAEs** -- Sales of produce to SOAEs, which had been a historical pattern, substantially declined throughout the 1990s. The only major commodity not to reveal a decline is wheat. In other agricultural produce the decline was: corn volume by over 50%; potatoes volume by 600%; apple volume (once nearly 3,000 mt) to less than 50 mt; eggs by 400%; cattle numbers from nearly 6,000 annually to less than 300 head; pigs from 2,000 annually to less than 100 head; and sheep from a peak of over 20,000 to 3,000 head.

Further, the processing sector of SOAEs or former SOAEs (now newly privatized businesses) has declined substantially in some product areas. For example, fruit processing in 1994 was 1/4 of the volume in 1990; and fresh meat output in 1994 was 1/2 of the volume in 1990. While canned vegetables did not decline in volume, it stagnated and did not grow.

- \* **Green Markets** -- The green markets in cities (free peasant markets) where everyone is entitled to come sell agricultural produce (generally fruits and vegetables, but also other products such as nuts and honey) regardless of whether they are producers or brokers. While the prices in these markets are set by supply and demand (amount of produce available and number of willing buyers), they seem to be limited by regional specialization as evidenced in a review of the MCIC price and quantity sheets currently being produced.

- \* **Wholesale Markets** -- Markets located in major cities concentrated mainly in social sector establishment control which generally sell produce in large lots. Availability of local

produce appears to be sporadic according to MCIC market sheets. Pricing of produce also seems to be near the level found in the green markets.

\* **Terminal Markets** -- Terminal markets for cattle do exist in many cities with the largest being the Skopje and Titova markets. Butchers buy both from the terminal market as well as directly from private owners of cattle.

\* **Private Treaty** -- Pigs are sold mainly by private treaty between butchers and individual owners. Like cattle, pigs are purchased and transported by the butcher to the local meat plants to be slaughtered.

The market for mutton seems to be unorganized because mutton is seen as an inferior product with little value. Mutton seems to be sold mainly in the rural areas.

\* **Individual Sales Operations** -- The poultry industry is directed towards egg production. The market channel is relatively short with producers selling eggs directly to the retail market and to private wholesalers.

\* **New Private Businesses** -- New private businesses such as the dairy processing plant at Bitola provides dairy producers with an outlet for milk.

\* **Producer Associations** -- A successful lamb sale was promoted last April, 1996 for the Debar Sheep Producers Association. In collaboration with an extension officer in MAFWE, producers sold their lambs to a principle export trader who paid a premium price of Dn85 per kg, Dn5 per kg over the market price.

One of the problems that continually surfaced in interviews with producers, and was admitted to by some processors, was that of delayed payments to producers because of cash flow problems in the processing organization. There is strong evidence of the marketing system being illiquid and the use of barter to pay for raw commodities, which in some cases the producer seems to have no say.

#### External Markets

While the external trade in agricultural/agribusiness products has been mostly in a deficit trade balance position, this sector provided 20% of the export earning while being responsible for 25% of the value of imports. Food products compose 10% of export earnings, and were as high as 15% in 1992. Food products composed 19% of import costs in 1994 and have risen through the 1990s from 6.3% in 1990 to 13.7% in 1992 to 19% in 1994. The positive position in this case is that this is an indication of two potential market areas that could be expanded: (1) export enhan-

cement through support of the agribusiness sectors in the export market, and (2) lowering import costs through import substitution approaches.

The following table provides an illustration of some of the key agricultural commodities which were imported and exported over the 1990 through 1994 period.

<u>Commodity</u>	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
<b>Imports in Metric Tons</b>					
Corn	34,468	28,042			82,860
Durum Wheat				27,327	43,305
Wheat					75,441
Flour				31,671	20,626
Oilmeals				13,017	
Melons	19,372	44,640			
Tomatoes	12,436	15,559			
Potatoes					17,845
Other Veg.	4,861	8,126		36,068	13,418
Meat				3,782	
Poultry				9,588	12,093
Milk Products					12,672
Cheese	6,357	5,414		6,365	5,211
Sugar				29,737	43,265
<b>Exports in Metric Tons</b>					
Rice				9,001	
Beans	412	2,727			
Tomatoes				17,921	12,961
Cucumbers				3,944	5,310
Other Vegetables				17,752	30,760
Wine				45,416	44,340
Apples				32,274	26,657
Grapes				10,119	12,773
Prepared Fruit					5,590
Beef	1,524	818		1,582	1,745
Lamb	1,129	1,509		1,152	
Tobacco	5,417	15,736		12,989	10,424

### Prices

The pricing process of agricultural products as well as food products could not be determined because of the insufficiency of information.

The Statistical Office provides average annual national retail prices of food products in its yearbook as well as average annual retail prices by 8 major market centers. The Monthly Statistical Bulletin provides average monthly prices for food products on a national basis and for the same 8 major market centers. Producer

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price indexes are provided in the Monthly Statistical Bulletin by commodity grouping category. No other information is available.

MCIC provides weekly market information for wholesale and retail prices for 8 major markets in its market information reporting sheet. This is a relatively new program which was initiated on a pilot project basis and has only been in operation for 6 months.

Pricing as a function of cost is difficult to determine for the production of all products. Data is not readily available on costs of production for different types and sizes of operations, e.g. agro-kombinats and private producers. Further, pricing in the dairy industry and wheat industry is influenced by government policy.

No price analysis of any form could be discovered. One of the major constraints in conducting a rough analysis of retail prices is the rapid change in prices due to the inflationary spiral as well as devaluation of the currency. A quick and dirty analysis of average annual prices for selected retail products was conducted using a series of different deflators. The results were all different by a significant degree and the exercise was worthless.

While the team gathered price information where ever possible, the limited amount procured did not provide any type of coherent structure from which to determine trends or gain a substantial understanding of how prices were being set.

Obviously, some market price analysis needs to be conducted to grasp an understanding of pricing in the agricultural and food system. Further, more detailed analytical work is needed in developing cost estimates for both production and processing systems. The information would be useful in evaluating marketing programs, investment decisions, and product development projects.

### Market Information

The only formal market information system that could be located was the major market price and quantity information weekly sheet being produced by MCIC.

There is no formal market research information in terms of consumer behavior, new market opportunities or requirements, intensity of competition, price behavior, barriers to trade, or any other type of analysis.

### Market Associations

While many producer associations have been developed through the auspices of donor agencies and assistance by the Extension Service of MAFWE, most of these producer associations were formed to confront problems other than marketing of production. Even though

this was the case, there exists evidence that producer associations have used their cohesiveness to market products.

There exists a strong disagreement between a number of parties as to whether or not producer associations formed for economic purposes are legal under current government policies, laws, and regulations. Several government officials, when queried about this, decided it was more important to discuss other aspects of agricultural/agribusiness development processes.

### Summary

To present an overview of what has occurred in the agricultural marketing system the following table of formal market flows is provided.

<u>Year</u>	<u>Grains</u>	<u>Vegetables</u>	<u>Fruits*</u>	<u>Animal Products</u>
	Mt	Mt	Mt	Mt
1985	181,273	196,413	81,419	90,453
1986	213,562	146,570	64,215	80,981
1987	202,593	128,563	77,485	87,504
1988	234,049	128,740	67,327	85,791
1989	191,554	97,704	70,961	83,351
1990	110,788	78,657	53,970	46,582
1991	202,606	74,483	38,012	71,860
1992	157,899	60,352	46,286	64,320
1993	182,675	44,196	31,707	60,412
1994	198,290	43,361	21,767	69,367

\* Without Wine Grapes

Formal market flows are the movement of commodities through recognized institutions, in this case SOAEs and SOEs, by which commodity movement can be measured. It does not include private market sales, sales in green markets, or other market arrangements. In this particular case, collecting numbers and arranging them according to certain concepts is rather like practicing black magic, you never know what you will come up with.

These formal market flows present 3 findings:

1. Little change has occurred in the cereals system and that differences over time are more due to production variations than any market changes.
2. The decrease in both vegetables and fruits by 75% supports the dramatic hunt for markets that the team uncovered in interviews and discussions.
3. That in spite of the fact of not being self-sufficient in meat and dairy products, there was a gradual decline in formal market flows. The only reason that could be established is

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that market disruptions forced high-cost producers and processors, as well as those producers and processors which lost formal marketing contacts, from the market place.

The above more or less places a finality on the loss of market as presented in the succeeding section, especially for vegetable and fruit producers. In this commodity segment nearly over 90% of production is performed by small-scale private farmers.

**SECTION III  
CONSTRAINTS IN AGRICULTURAL MARKETING**

The most heard comment by the team during interviews with producers, processors, and traders alike was, to paraphrase, "where can we find a market for our products". This can be classified as limited access to markets. Access to markets can be limited for various reasons, and thus can be divided into a series of marketing constraints faced by both agriculture and agribusiness sectors alike.

**Constraints**

The team's finding is that there is no major market constraint, nor several major market constraints, which would be key components to resolve for an assured near-term improvement in the agricultural/agribusiness marketing system. The team finds that there are a series of constraints which must be addressed in some united fashion. To the best of its' ability, the team has attempted to define marketing constraints in an orderly progression from severe to less severe. However, in the current Macedonian system, these differences are quite small, and even in some case considered negligible.

1. **Lack of Marketing Information** -- The lack of a marketing information system which details prices and quantities in markets country-wide for all major commodities and food products; and which is widely distributed and open to all participants in the agriculture/agribusiness sector.
2. **Lack of Market Intelligence** -- The lack of a systematic process which provides an array of intelligence information such as:

domestic commodity and food outlooks (perspectives and information on current marketing actions as well as future marketing actions) including emphasis on food product imports and prices to enable domestic producers and processors to understand their competition;

foreign commodity and food market outlooks which would cover foreign market commodity and food prices and quantities, external trade activities in markets which Macedonia might access, and potential opportunities in external markets; and

development of trade leads in external markets by providing contact lists of foreign trade companies and their specialties.

The above must also include information on the quality standards of both products being imported and product opportunities in external markets.

3. **Product quality** -- A lack of understanding of specific commodity standards whether it be quality issues related to health aspects or grades and standards systems, especially as related to pricing of products.
4. **Limited number of viable private-sector intermediaries in the marketing system** -- There has not been an clear emergence of a significant number of brokers, traders and wholesalers capable of facilitating the market clearing forces in Macedonia. The market agents that operate do not have the necessary entrepreneurial skills and financial capabilities to purchase, store, distribute and market agricultural products. Producers and processors are left without an efficient means to sell their products and continue with their production or processing activities.
5. **Cost of production, cost of processing** -- While this appears to be a production problem, it is in reality a marketing problem. No one really seems to know their cost of production, what margins are, what margins should be, etc., and etc. A producer or processor can not market a product at a price that does not cover the full cost of production, including capital, and stay in business.

There seems to be a lack of understanding of production costs and contribution margins as applied to business decision-making. Without these simple concepts it is difficult for businesses to make good decisions. Pricing and marketing strategies are often a function of knowing your break-even costs.

6. **Lack of understanding of current market** -- There is no accurate understanding of how the current system operates. No one could accurately describe the total marketing process, including such characteristics as product flows, excesses, shortages, prices over time, or spot market opportunities in any given commodity group covered by the team. If one thinks current market participants are perplexed, the writer is quite confused about several elements of the current system.
7. **Lack of understanding of private-enterprise market systems** -- There is no fundamental understanding of a consumer demand-driven market system nor the concept of the consumer approach to marketing products.
8. **Lack of liquidity in the market system** -- The one thing that a viable marketing system requires is trade finance, or it may be called marketing finance. It is working capital to

maintain inventories, to supply nominal credit terms to buyers, to provide specialized services to raw product contractors, provide adequate insurance coverage, and a host of other costs which facilitate trade. The absence of liquidity in this system jeopardizes the ability of private firms to perform regular and consistent business transactions. Producers are unable to receive payment for their products and in turn unable to reinvest in inputs, expand production and make capital improvements.

9. **Institutional rigidity** -- The government process seems to unduly complex and sometimes rigid in its approach towards a private-sector economy. Such considerations as rights of ownership, land tenure laws and ownership, contract law and commercial codes specifying conduct of finance and trade, and the simple application of regulatory processes need to be developed and refined to meet the needs of a private-sector business system. Such considerations, as well as the application of a simple bureaucratic process, are aimed at lowering barriers to external and internal trade, enticing foreign capital investment, and, above all, lowering the cost of conducting business for the private sector.

#### Relationship of Constraints

A private-sector marketing system is composed of three basic sets of functions: (1) transaction, (2) physical, and (3) auxiliary. Transaction functions consist buying and selling a product. Physical functions consist of assembly, handling, storage, processing, packaging, and transport of a product. Auxiliary, or supporting, functions consist of market information and intelligence systems, grades and standards systems, financial systems, risk aversion systems, and educational/knowledge processes and programs.

The first two sets of market functions are conducted solely by the private sector. Auxiliary functions are the role of government, or non-profit trade associations operating under government regulation or statute. This allows such auxiliary functions as market information to be provided equally to all participants in the market system without any bias caused by favoritism.

The constraints listed above primarily fall into 3 categories:

- 1) Constraints of lack of marketing information, lack of market intelligence, product quality, cost of production and cost of processing, lack of understanding of current market, and lack of understanding of private-enterprise market systems are all the result of no auxiliary marketing function system being available.

- 2) The constraint involving the limited number of viable private-sector intermediaries in the marketing system is partially the result of the lack of auxiliary functions in a marketing system. Auxiliary marketing functions provide assistance to prospective entrepreneurs in developing skills to become viable market operators.
- 3) The constraints of lack of liquidity in the market system, and institutional rigidity are governmental policy constraints which are related to the constraints listed under auxiliary functions. Governmental policies are apparently being made without an underlying analytical structure which provides the capability for policy-makers to understand the outcome of their decisions.

### Government Policies

A review of available information and results of discussions infer that government policy concerning the agricultural marketing system is best defined as an absence of policies and strategies.

The two general policies of government which impact on the agricultural sector are the privatization of socially-owned agricultural enterprises and subsidation and price control of wheat and milk products. In the latter case, the Government of Macedonia seems to have recognized that price subsidies and price controls are not market efficient. In the former, the Government of Macedonia is proceeding with the process of privatization of socially-owned agricultural enterprises without any other policy directions that involve trade, ease of exit and entry from markets, or financial system improvement.

The question of the legality of producer association for economic gain needs to be addressed to determine whether it is permitted under current policy and law. And, if not allowed by policy and law, develop a process which will change government policy and allow the private-sector system, now being created, to function.

### The Commodity Market Concept

The one other major issue that continually surfaced was the commodity market concept: in the terms of reference; in discussions with other donor agencies; and in discussions with MAFWE officials. In many instances there was a difference of understanding as to the definition of commodity market depending on with whom the conversation was conducted. The understanding ranged all the way from a wholesale market to a supporting organization which would attempt to facilitate the agricultural marketing process.

The Government of Macedonia, through Parliament, established in 1992, a public company known as Agro-Berza, probably best translat-

ed as Agricultural Bourse (i.e. some type of commodity market). This is a public company held by government in which operational management is directed by a management committee composed of 2/3s Parliament members and 1/3 Agricultural Bourse staff. The stated general purpose of this organization is to do what is necessary to promote the flow of agricultural produce from producer to consumer. At this time the organization is not yet functional and no specific direction for attaining the general purpose has been created.

A commodity market as a physical/transactional market place is a concept ahead of its time. It is not that a commodity market will not work per se; however, it needs the critical elements of a market system that the team has found lacking in the Macedonian market system.

The underlying requirements for such a market are not in place. For the commodity market concept to begin to become a functional concept, a set of decisions will have to be undertaken and implemented.

- Is the commodity market to be a physical market? This means that commodities will flow to a central place called a commodity market and the physical sale of the commodities will be made at that location and physical possession passes from the seller to the buyer. At the point of sale the buyer pays the seller.
- Is the commodity market to be a transactions market? This means that commodities do not actually arrive at a central market location, but the market is strictly a location for buyers and sellers where a quantity of commodity is purchased for a given price. Once the sale is consummated, the seller ships the commodity to the buyer who pays the seller on receipt of commodity.
- What type of commodities, or products, will be offered in the commodity market? There are some varying physical requirements depending upon the type of market as set forth above and the category of commodities or products. For example, fruits and vegetables must arrive at market packed in containers for handling purposes. As a perishable they require refrigeration. Generally, markets that cater to these commodities are 6-day markets which operate on that time frame to be able to move perishable product. Grains, on the other hand, are really what is known as bulk commodities with low density to volume. While they are near-term non-perishable, they do require adequate storage from weather and pests.
- Who will operate the market? Government or some non-profit trade association? What will the rules of the market be? How will disputes be settled? What will be financial support for market operations (who pays fees and will these add to

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business costs which will reduce commodity movement into the market). How will the element of fraudulent marketing practices be handled?

Further, there are some critical elements necessary to make any commodity market operate efficiently and effectively, regardless of whether it is a cash market or some type of a future pricing market.

- The element of what is known as liquidity, which has two factors.

First, it is the number of buyers and sellers in a market place. Without an adequate number of buyers and sellers, a market place will not function. If a seller comes to market and finds a limited number of buyers, the seller then has a non-competitive market, which will result in a lower price to the seller. Conversely, if a buyer comes to market and can not find sufficient supply for the buyer's needs, other marketing means will be adopted and the buyer may leave this particular market. In both cases, the market place suffers.

Second, ability of buyers to pay sellers and have enough working capital to clear the market. This is known as transaction payability.

- A knowledge of prices in all areas of the country as well as a knowledge of prices in external markets. Buyers are purchasing for resale or processing. Why pay a higher price in a central market, if it can be bought cheaper in a regional market so that even with transport costs, the total price is lower. The same concept applies to the seller. Is the commodity market price worth the difference between some regional price and transport cost?
- A grades and standards systems that creates uniformity in quality aspects of commodities and which is understood by buyers and sellers. This reduces transaction costs as the buyer does not have to dig through a box of apples or a bag of grain to determine what was put on the bottom. This allows the buyer to reject the sale if some standard is not met.

What is imperative to note is that the marketing constraints outlined by the team involved price knowledge, grades and standards, limited intermediaries in the market place, illiquidity of financial markets, not to mention institutional rigidity.

The lack of auxiliary marketing functions, as addressed in the list of marketing constraints developed by the team, unless first resolved, would create a commodity market that resembles the current wholesale market now in Skopje. Unless the intent is to replace the current wholesale market with a nice set of bricks and

mortar, then this concept needs to staged for development after achieving some reasonable degree of implementation of auxiliary marketing functions which would have the capability of supporting a central market place.

SECTION IV  
AGRICULTURAL MARKETING IMPROVEMENT

The Macedonian agricultural marketing system operates, but not with the efficiency and effectiveness to serve all clients, marketers, processors, and producers alike. Consumers are able to procure food, although at nearly half of their disposable income.

Key Considerations

The agricultural marketing constraints previously enumerated have related needs, target audiences, and expected outcomes of remedial activities. Before structuring these relationships, a series of key considerations needs to be evaluated.

The first key consideration is to categorize the constraints into what is known as activity clusters so as to provide for development of future action plans for agricultural marketing improvement.

1. **Market Information** -- This area includes lack of marketing information, lack of knowledge of cost of production and cost of processing (not mention such things as transport and packaging costs), lack of understanding of current market, and lack of understanding of private-enterprise market systems.
2. **Market Development** -- This area includes lack of market intelligence and product quality issues related to different markets.
3. **Marketing Organization Development** -- This area is directed to the limited number of viable private-sector intermediaries in the marketing system.
4. **Policy Problems** -- This area includes the lack of liquidity in the market system and institutional rigidity which are primarily policy constraint issues dealing with financial system, trade, ease of exit and entry, and daily conduct of business.

Developmental actions in categories 1, 2, and 3 are near-term necessities to the system as a whole. Category 4 will become a longer-term venture in that the necessary underlying analytical information to support policy reform must flow from work conducted in category 1 and be used in an educational process that is targeted at policy-makers. Therefore, categories 1, 2, and 3 are ranked first in priority, with category 4 being addressed subsequently to other actions.

The second key consideration is where to focus primary efforts. One of the basic problems observed in the current development process is a lack of focus, in other words trying to be everything

to everybody, with the result being a loss of continuity, and a decreased degree of commodity specific impact.

Therefore, commodity sectors need to be evaluated and ranked based upon what is really important to the small private-sector farmer. Given the consideration of loss of market and limited internal market, the priorities of commodity groups would be as follows:

- \* Vegetable and Fruits - Approximately 90% small farmer production;
- \* Animal Products - Approximately 75% small farmer production; and
- \* Grain Products - Approximately 60% small farmer production with the underlying need of feed grains for support of animal industry.

The third key consideration is the anticipated results of undertaking activities which are intended to alleviate the listed agricultural marketing constraints. Results of what is proposed in restorative actions addressing the agricultural marketing constraints need to be well defined. As an example:

<b>Constraint</b>	<b>Action Result</b>
Lack of information	Better information
Knowledge of costs	Import substitution if it is cost effective
Export market intelligence	Niche markets or special commodity sales

The fourth key consideration is how any undertaken activities will connect to and combine with (1) current activities under the Agency for International Development program for Macedonia, and (2) current and proposed activities of other donor agencies operating in Macedonia.

The fifth key consideration is sustainability of improvements in the agricultural marketing sector. What benchmarks are needed to determine success. Some possible benchmarks would be:

- creditable and viable producer associations based on profitability of organization and membership;
- enough profitable entrepreneurs to clear markets, especially in some commodity areas now in surplus;
- increased volume levels of commodity marketing indicating profitable commodity sectors;

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- creation of a cadre of support organizations that provide fee-oriented services to either agricultural production or agricultural marketing sectors.

### Agricultural Marketing Development Program Parameters

The agricultural marketing constraints, while evident across all commodity sectors will be more easily addressed if remedial actions are commodity-sector oriented.

#### **Commodity Groups**

The basis for program parameters on a commodity perspective is that primary commodity groups each require different marketing approaches due to the characteristics of their market. The commodity sectors are divided into two groups: (1) vegetables and fruits, and (2) animal products and supporting feed grain segment.

**Vegetables and Fruits** will have little if any increase in domestic consumption over the natural growth of population. Further, imports of fruits not produced in Macedonia will affect levels of domestic fruit consumption.

Vegetable production well exceeds some 430,000 mt annually. The principal commodities are tomatoes, potatoes, peppers, cabbage, onions, garlic, cucumbers, carrots, peas, beans, and lentils. Nearly all of the total production is carried out by the small-scale private farmer. This production amounts to 207 kg per capita and consumption level is 87 Kg per capita. This amounts to domestic consumption being 42% of production. As compared to Western Europe, vegetable consumption can be considered in the range where very little significant increase in domestic consumption will occur.

Fruit production normally ranges from 450,000 to 500,000 mt annually. The principal commodities are grapes (table and wine), melons, apples, plums, pears, cherries, peaches, apricots, and quinces. Of the total production, about 75% is produced by the small-scale private farmer. Fruit consumption is 49 kg, or 30% of production excluding wine grapes. Fruit consumption is somewhat understated because there is no measurement of citrus, bananas, or pineapple (import products) which can be found in wholesale market in substantial amounts. As compared to Western Europe, fruit consumption can be considered in a range in which there will be little increase.

Therefore, the major focus of market development in this commodity area must be on development of external markets; expanding knowledge of foreign markets; improvements in canned, frozen, and dried processing systems for processed products for external markets; quality, health, and safety standards of products destined

for external markets; and such regulatory conditions as phytosanitary laws, label laws, and packaging regulations.

Animal Products have an opportunity to access both increases in the domestic market and target specific products to the export market. Meat consumption only averages some 28 Kg per capita while milk products average 79 Kg per capita. However, per capita consumption of eggs is an average of 7 Kg. Imports of meat and dairy products to fill the deficit between consumer demand and domestic production are significant due to deficit domestic supplies.

In the internal market, there is a prospect for expanded sales through increasing domestic consumption of Macedonian products by offsetting the level of some of the products being imported. This import substitution approach to domestic marketing must be directed towards meeting import competition on the basis of cost and quality. This means that production costs will be as equally important as processing costs, and thus the aspect of the feed grains situation will be important.

Alternatively, there are specific surpluses in the animal sector, for example lamb and eggs. These will need to be addressed from either an export market stance, in the case of lamb or eggs. In the case of lamb, the market development focus must be timing and quality specifications as well as price. In the case of eggs, further processing of eggs for external commercial bakery and processing markets must be evaluated as to production and processing feasibility.

Further, in the animal products group there is a great possibility that a change of product possibilities would dominate the scene. As an example, the switch from egg production, now a surplus commodity, if statistics are correct, to broiler production to compete against imports.

Therefore, the major focus of market development in this commodity area must be directed towards import substitution and the development of specific external markets. There is a potential for expansion of more than doubling domestically produced meat production. There is a potential for expanding dairy production by at least 25%.

### **Correcting Constraints**

Correcting constraints needs to be based on needs, envisioned target audiences, as well as expected outcomes and achievement benchmarks. Macedonia is a small country with a small domestic market. Therefore, it is paramount that capability be developed to accomplish import substitution, increase export marketing, and through educational processes prevent the expenditure of scarce capital in duplicative efforts in agricultural marketing and agribusiness sectors.

<b>CONSTRAINT CATEGORY</b>	*	Market information
<b>NEEDS</b>	1.	Market price and quantity information system
	2.	Descriptive analysis of production and marketing systems Cost of production studies Cost of processing studies Cost of transportation studies Marketing cost studies Price analysis
	3.	Educational outreach process to improve knowledge of marketing system and marketing system components: current Macedonian and other private-enterprise systems
<b>TARGET AUDIENCE</b>	1.	All participants in marketing system including agricultural producers
	2.	Producers on an association basis <del>Trade associations</del>
	3.	Producers on an association basis <i>Processors</i> <del>Trade associations</del>
<b>OUTCOME</b>	1.	Widely distributed information system (print, radio media) of prices and quantities in internal markets. Not only better information, but information availability.
	2.	A series of benchmarks, based on both on the Macedonian situation and what is possible, of all types of operating costs against which producers and processors can measure their operations.  An understanding of costs in private-sector business systems, their measurement and control.
	3.	An understanding of private-sector markets; and components of private-sector markets.
<b>ACHIEVEMENT BENCHMARKS</b>	1.	Market information available to all villages, producer associations, market locations, and trade associations.
	2.	Market measurement of volumes that reveals (a) increased exports, and (b) import substitution effect from knowledge of costs, and technical

assistance and training programs directed towards cost controls and production efficiencies.

3. Increased number of participants in the market place.

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CONSTRAINT CATEGORY	* Market intelligence <sup>3</sup>
NEEDS	<ol style="list-style-type: none"><li>1. Domestic market commodity and food outlooks</li><li>2. External market commodity and food outlooks</li><li>3. Development of trade leads in external markets</li><li>4. Quality standards and other regulatory requirements</li></ol>
TARGET AUDIENCE	1-4 Producer associations Trade associations Individual businesses
OUTCOME	<ol style="list-style-type: none"><li>1-2. Widely distributed information series providing more information than is currently available on external markets.</li><li>3. Provision of contact lists, registers of foreign trade companies and their specialties.</li><li>4. Development of capability to meet international standards, health codes, and processing requirement qualities for export markets. Development of at least rudimentary systems of grades and standards for domestic markets based on knowledge of international standards.</li></ol>
ACHIEVEMENT BENCHMARKS	<ol style="list-style-type: none"><li>1-3 Amount and quality of information available to producer associations, trade associations, and individual businesses</li><li>4. Degree of quality standards in the market place.</li></ol>

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<sup>3</sup> Market intelligence is considered separately from market information. This is because market intelligence deals with collecting specific market and marketing information which is distinctly directed towards potential penetration of targeted markets, not just an information source.

<b>CONSTRAINT CATEGORY</b>	*	Market organization development
<b>NEEDS</b>	1.	Producer associations capable of massing quantity and controlling quality for any specific market
	2.	Increased number of private-sector agribusiness operations
	3.	Large-scale SOAEs being privatized without adequate marketing skills
<b>TARGET AUDIENCE</b>	1.	Producers/Producer Associations in the production sector of agriculture
	2.	Entrepreneurs/startups in the small enterprise sector
	3.	Selected Large-scale enterprises
<b>OUTCOME</b>	1.	Creditable and viable producer associations based on profitability of organization and membership.
	2-3.	Profitable entrepreneurs to clear markets, especially in some commodity areas now in surplus.
<b>ACHIEVEMENT BENCHMARKS</b>	1.	Increased volume levels of commodity marketing indicating profitable commodity sectors
	2-3	A cadre of support organizations that provide fee-oriented services to either agricultural production or agricultural marketing sectors.

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<b>CONSTRAINT CATEGORY</b>	*	Policy
<b>NEEDS</b>	1.	Sectorial analysis of agricultural production sector
	2.	Sectorial analysis of agricultural marketing sector including processing
	3.	Working papers which address the needs of a sector as presented in the analysis and relationships to either current government policies or government policies which need to be established
<b>TARGET</b>	1-3	Policy makers with special emphasis on MAFWE

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## AUDIENCE

OUTCOME	1-3	Policies which address the questions of illiquidity and institutional rigidities
ACHIEVEMENT BENCHMARKS	1.	Creditable and viable producer marketing associations based on profitability of organization and membership.
	2-3	Profitable entrepreneurs clearing markets, especially in some commodity areas now in surplus.
		Increased volume levels of commodity marketing indicating profitable commodity sectors

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In summary, the above areas of needs as related to constraint categories can be positioned into 3 broad components:

1. An analytical/policy component which provides the necessary background and technical analysis for understanding the production and marketing system throughout agriculture and agribusiness.
2. A marketing development component which provides market information and market intelligence services.
3. A marketing organization development component which provides technical assistance and training process to develop businesses and associations to improve operational capabilities in marketing agricultural produce.

### Potential Connections to Other Donor Activities

As presented in Section I, there are numerous sets of donor activities which, in one way or another, are related to agriculture and agribusiness.

In the area of market information, the World Bank's private farmer support project intends to develop a system of market price information, reportedly, through the Statistical Office. MCIC currently has a pilot program in market price and quantity reporting. Given this base, then this would leave a commodity-oriented project in the position of only having to assure that market information distributed reached all participants in the production and marketing sectors of that commodity group.

The World Bank's farmer support project provides for reform within the extension service which could link to further development of

farmer associations as one of the means of increasing the number of intermediaries in the market system.

The World Bank's structural adjustment loan includes reform in agricultural policies. The EC/PHARE agriculture project also has a policy component. Linkages to these projects would provide the capability of transmitting sectorial analysis as the supporting mechanisms for changes in policy structure affecting commodity groups.

There are numerous potential possibilities for ties to other donor activities such as

EC/PHARE's private sector enhancement project which could enable technical business services as well as credit possibilities to new intermediaries in the market;

the German credit program; and

the World Bank's agriculture inputs credit guarantee program.

A review of other donor activities concludes that any project activity in alleviating market constraints is not duplication of any other efforts. No other donor activities could be found which dealt specifically with these problems, or specifically with commodity sectors.

#### Team Recommendations

Because of the difference in achieving end market needs, the team recommends that alleviating market constraints be approached on a commodity group basis. The end market must be the guiding principle. Specifically, the end market target for vegetables and fruits must be external given the level of domestic per capita consumption in these products. The ability to increase the level of consumption in the internal market is limited. Population growth is low. Any additional purchasing power may move into increased consumption of animal products rather than vegetables and fruits.

For animal products, import substitution and specific external markets must be targeted. As a case in point, the team finds that in open markets in Vienna, there is cheese from Greece and Bulgaria. With the proper production, processing, and marketing, it is believed that Macedonia could compete in this market. The price spread appears strong enough to warrant the effort, as shown below.

Product	Macedonia	Vienna
	Price US\$	Price US\$
Soft White Cheese	6.00	16.00
Feta Cheese	5.50	18.00

Goat Cheese		22.00
Cow/Sheep Blend		15.00
Kaskeval	9.50	15.00

It is the teams' position that a focus on a commodity group may enhance the broad project activities of other donor agencies. Also, by focusing activities on one commodity group, activities can utilize resources more efficiently in enabling the private farmer to gain access to markets. The team makes no recommendations as to priority of commodity groups.

### **Marketing Approaches by Commodity Sectors**

Four important issues should be examined in developing marketing approaches by commodity sectors.

1. There is a need to utilize marketing approaches that lead to demand-driven production rather than desperately trying to find markets for a commodity which has been historically produced by habit or command.
2. There is a need to determine the critical marketing impact points in each individual commodity, meaning where is the primary marketing advantage for that commodity: raw, processed, quality, low-cost, packaging, uniqueness.
3. Regardless of whether the target is the export market or internal market import substitution, it must be determined if the commodity can be price and quality competitive. Can the cost of production and cost of processing be reduced through the appropriate application of skill technology and management enhancement?
4. The export markets must not be viewed as just ordinary markets into which goods can be sold. They must be viewed from a specialty export market stance, meaning, what the trade normally calls niche or target markets. There are two prime examples in Macedonia for this viewpoint. In the fruits and vegetable sector, Macedonia produces a near world-class wine in merlots and cabernaet sauvignons. While other production can best be classified as less than ordinary table wine, there is a window of opportunity for exports. The options are bulk wine sales for blending (which is already occurring) and targeting niche markets which have upper-scale buying power and what is being sold is uniqueness (a product of Macedonia) as well as quality. However, it has to be priced in the market range to compete, although uniqueness allows the seller to slightly premium price. And, quality must be maintained.

In the case of cheese produced in Macedonia, again there is the niche market concept. A market that is populated by buyers who prefer this type of cheese.

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In the vegetable and fruit sector, the key to resolving market limitation is external markets, but external markets for what type of product: particular vegetable or fruit, processed or raw, and in which proportion processed or raw. Value-added processing will have to be carefully addressed so as to position the country correctly in the export market place vis-a-vis its competitor countries.

This means that an overall program will have to be developed which addresses market constraints and assist in overall development of external marketing. Therefore the key points are:

Develop a market information system that is more than just a market price and quantity reporting structure. Such a system must also include (1) an analytical process which uncovers deficiencies in production cost, processing cost, transportation cost, and marketing cost patterns; (2) a descriptive analysis of how the current system is performing, its strengths and weaknesses, and exactly where these strengths and weaknesses lie within the market system; (3) analyses by individual commodity to determine what are primary market advantages and disadvantages; (4) an outlook analysis that details potential export markets and the activities within these markets, and (5) an outreach process that delivers these findings to market participants.

Construct a market development process which provides a knowledge base for assisting market participants. The immediate need, from a marketing standpoint, is to determine:

- \* What are primary products being produced now and what exactly are the specific surpluses?
- \* What are secondary products being produced and exactly what are the specific surpluses?
- \* What is saleable externally in raw form and what are quality specifications?
- \* What are prices and can Macedonian production be price competitive?
- \* What is saleable externally in processed form? Can it be processed to specifications required? What will it take to process to specifications? What will be the costs of processing?
- \* What are prices and can Macedonian processed products be price competitive?
- \* What can be grown in Macedonia that is demanded and saleable in external markets so as to get out of the tomato trap? This means demand-driven production rather than production-driven marketing.
- \* What are the target markets and can they be accessed? In Western Europe, 5 countries have vegetable consumption above 125 kg per capita of which 2 countries are above 200 kg per capita: France, Italy, Portugal, Spain, and Greece. In Western Europe, 4 countries have fruit consumption above 100 kg

per capita: Italy, Netherlands, Spain, and Greece. What is the market potential in Eastern Europe and how can a market be developed? What is the market potential in other markets and how can a market be developed?

- \* How can existing and potential Macedonian enterprises be connected with import businesses in other countries.
- \* What market standards are necessary such as labeling, packaging, shipment containers, modes of transport, and health and sanitary regulations in an external market?

Create a **market organization development process** which provides training and technical assistance programs directed at improvements in the agribusiness sector for:

- \* enhancing marketing, financial, operational, and general management skills;
- \* reducing cost of production and processing by improving efficiencies of operation or introduction of appropriate cost effective technology;
- \* creating standards for quality and practices for maintaining quality of output; and
- \* formation of marketing associations that allow for marketing of a particular product(s) in large lots, or the ability to supply several buyers at the same time.

In the animal products sector, the same basic approach must be undertaken as in the vegetable and fruits sector because marketing constraints which must be addressed are the same across all sectors. However, because of the dual approach in this sector, the focus of activities is quite different.

Further, there is the underlying need to address the question of the lack of feedstuff availability as well as protein supplements, which are essential in an animal industry production system.

Develop a **market information system** that is more than just a market price and quantity reporting structure. Such a system must also include (1) an analytical process which uncovers the cause for the lack of supply of animal products in the domestic market, either production or marketing reasons; (2) an analysis that deals with the supply situation of carbohydrate-based feeds and protein supplement, including reclaim systems in the meat industry (blood and bone meals and tankage); (3) an analysis of production factors and costs in basic livestock rearing practices and how these factors and costs relate to prices for livestock and livestock products; (4) feasibility analysis that deals with change of commodity production, for example from eggs to broiler; (5) an analysis that details potential domestic markets and the activities within these markets, (6) product specific analysis of surplus commodities with a determination of potential export possibilities and/or potential for product change; and (7) an outreach process

that delivers these findings to participants in both the marketing and production segments of the animal products industry.

The critical point is that there appears to be a production efficiency constraint that may be a far greater problem to overcome in the import substitution approach to marketing, than the existing marketing constraints.

Construct a market development process which provides a knowledge base for assisting market participants.

- \* What is the quantity, quality, and prices of animal products now being imported?
- \* How do import products compare to domestically produced products in the terms of price and quality?
- \* What specific changes are required in Macedonian products to be competitive in the domestic market?
- \* What can be done to enhance the domestically-supplied feed-stuff and protein supplement industry in Macedonia?
- \* What specific marketing actions would increase Macedonian product sales in the domestic market?
- \* What broad range of markets exist for surplus products, and what are the potentials of this market? For example, in the case of eggs, is there a market for breakers or frozen breakers for bakery items.
- \* Where, if any, are target specific markets for strictly specialty items such as Macedonian cheese?
- \* What type of product-specific export market arrangements could be developed for surplus products?

Create a market organization development process which provides training and technical assistance programs directed at improvements in the agribusiness sector for:

- \* enhancing marketing, financial, operational, and general management skills;
- \* improving production efficiencies in livestock and meat industries;
- \* improving production capabilities in the grains sector to assure a supply of grains for the feed industry;
- \* improving production efficiencies in the dairy industry;
- \* improving, or creating, new opportunities for supplying feedstuffs to the animal industry;
- \* new product development or development of products not being currently produced; and
- \* formation of production and marketing associations to act as intermediaries in the dissemination of information which would increase their memberships knowledge of more efficient production and marketing practices.

The study team shall identify constraints to the marketing of agricultural commodities and create a national plan for addressing these constraints. The team shall develop an RFP that will take into consideration the development work of other donor's work in related sectors and sub-sectors.

The overall purpose of the assessment is to (a) identify constraints that can be addressed by training and/or technical assistance, taking into account what other donors are doing; and (b) design and prepare a Request for Proposal.

The assessment team shall:

1. Identify major constraints for Macedonia in the areas of postharvest and especially marketing and pricing of grains, legumes, seeds and perishable fruits and vegetables, meat and other animal products which could be solved through technical assistance and training.
2. Review the whole postharvest agricultural marketing system from the producer to the consumer and identify the major bottlenecks in these market chains for different commodities. Major components and their constraints should be prioritized taking into consideration cost, potential impact, and length of time in solving them.
3. Investigate constraints in policies to postharvest marketing, such as quality standards, packaging, sanitation, prices, government programs, etc.
4. Consider market statistics and information and dissemination thereof.
5. Investigate pricing as a key consideration in marketing, with special focus on the state of the art in computing costs as a component of price.
6. Consider the formation or strengthening of market associations.
7. Assess the potential for formation of an agricultural commodity market and the type of commodities.
8. Develop a plan for best and most cost efficient technology transfer of postharvest methods and marketing applicable for Macedonia, including the areas which other donor countries are providing assistance or are planning to do so in the near future.



9. Describe how this initiative will interact and maximize the potential synergism with other USAID supported initiatives, other international donor projects, activities of the USDA and other federal agencies, PVO's, and other institutional collaborators.
10. Develop a Request for Proposal and the criteria for selection.

In order to fulfil the requirements of the purchase order the contractor shall:

1. Review projects of other donors, especially of the World Bank and EU, in order to avoid duplication and to encourage synergism.
2. Review Macedonia's present policies that affect marketing.

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## ECONOMIC DATA

## ANNEX III

Table 1, Social Product in 1972 Prices (Denars)

Year	Public	Private	Total	Agriculture	Agriculture
					as a % of
					Total
1987	2,015,000	315,500	2,330,500	388,100	16.7
1988	1,953,300	301,400	2,254,700	361,200	16.0
1989	1,980,500	317,500	2,298,000	377,200	16.4
1990	1,770,100	310,100	2,080,200	338,700	16.3
1991	1,485,700	387,400	1,873,100	398,300	21.3
1992	1,230,100	409,100	1,639,200	400,000	24.4
1993	1,033,800	361,600	1,395,400	318,400	22.8

Source: Statistical Yearbook of the Republic of Macedonia

Table 2, National Income in 1972 Prices (Denars)

Year	Public	Private	Total	Agri-	Agri-	Agri-	Agri-	
				culture	culture	culture	culture	
				Public	Private	Total	as a %	
				Total				of Total
1987	1,775,900	293,700	2,069,600	124,400	246,000	370,400	17.9	
1988	1,722,400	280,200	2,002,600	117,900	227,000	344,900	17.2	
1989	1,736,600	295,200	2,031,800	118,000	242,000	360,000	17.7	
1990	1,542,900	287,200	1,830,100	106,200	216,800	323,000	17.6	
1991	1,284,400	360,200	1,644,600	104,200	273,800	378,000	23.0	
1992	1,057,900	379,600	1,437,500	100,100	279,500	379,600	26.4	
1993	887,400	334,600	1,222,000	71,800	230,100	301,900	24.7	

Source: Statistical Yearbook of the Republic of Macedonia

Table 3, Index of Production, 1960=100

Year	Industry	Agriculture	Construction
1987	1054.6	226.8	266.6
1988	1017.0	208.9	241.9
1989	1060.7	218.3	236.3
1990	947.7	196.0	217.2
1991	784.7	230.5	172.5
1992	660.7	231.4	148.8
1993	568.9	184.2	130.3
1994	509.2	198.6	--

Source: Statistical Yearbook of the Republic of Macedonia

Table 4, Cost of Living Index, 1990 = 100

Year	Total	Food	Pay Index	% Increase
				Total Index
1987	0.4	0.2		
1988	1.1	0.4		175.0
1989	14.4	1.1		1209.1
1990	100.0	100.0	100.0	594.4
1991	210.8	204.5	184.4	110.8
1992	3396.6	3522.4	1984.4	1511.3
1993	15692.4	15692.4	11018.8	362.0
1994	35825.7	35307.9	24231.3	128.3

Source: Statistical Yearbook of the Republic of Macedonia

Table 5, Gross Domestic Product Shares as a Percentage of Value Added

Category	1990	1991	1992	1993
Agriculture & Fisheries	8.3	13.2	18.0	11.1
Commercial	72.9	60.3	61.8	66.7
Government	6.5	8.4	6.6	7.8
Health/Education	12.2	18.1	13.7	14.4
Total	100.0	100.0	100.0	100.0

Commercial includes all other productive output outside of agriculture production.

Source: Statistical Yearbook of the Republic of Macedonia

Table 6, Trends in Social Product Over Time (1000 Denars)

Year	Constant 1972 Price	Real Growth %	Current Prices	Current Growth %	Hypothetical Inflation Rate
1972	1,369		1,369		
1973	1,457	6.4	1,732	26.5	20.1
1974	1,545	6.0	2,557	47.6	41.6
1975	1,621	4.9	2,869	12.2	7.3
1976	1,698	4.8	3,275	14.2	9.4
1977	1,811	6.7	4,039	23.3	16.7
1978	1,963	8.4	5,040	24.8	16.4
1979	2,109	7.4	6,580	30.6	23.1
1980	2,145	1.7	8,552	30.0	28.3
1981	2,172	1.3	12,139	41.9	40.7
1982	2,199	1.2	16,728	37.8	36.6
1983	2,154	-2.0	23,344	39.6	41.6
1984	2,221	3.1	36,952	58.3	55.2
1985	2,205	-0.7	63,881	72.9	73.6
1986	2,361	7.1	126,934	98.7	91.6
1987	2,330	-1.3	266,729	110.1	111.4
1988	2,255	-3.2	800,987	200.3	203.5
1989	2,298	1.9	12,623,863	1476.0	1474.1
1990	2,080	-9.5	55,070,646	336.2	345.7
1991	1,975	-5.0	113,646,748	106.4	111.4
1992	1,639	-17.0	1,601,564,200	1309.2	1326.3
1993	1,395	-14.9	6,041,108,500	277.2	292.1

Source: Statistical Yearbook of the Republic of Macedonia

**Table 7, Total Employment**

Year	Popula- tion (1000s)	Total Employment			Unem- ployment	Work- force	Unemployment as a % of Workforce
		Economic	Non- Economic	Total			
1987	1,955	427,829	88,232	516,061	144,080	660,141	21.8
1988	2,007	425,902	89,084	514,986	143,140	658,126	21.7
1989	2,018	427,060	89,474	516,534	153,527	670,061	22.9
1990	2,028	417,485	89,839	507,324	159,307	666,631	23.9
1991	2,039	381,924	86,448	468,372	166,873	635,245	26.3
1992	2,056	361,405	84,712	446,117	173,350	619,467	28.0
1993	2,066	336,801	84,227	421,028	177,156	598,184	29.6
1994	2,075	310,969	84,717	395,686	196,280	591,966	33.2
1995	2,084	272,006	84,611	356,617	212,222	568,839	37.3
1996 June		264,019	85,257	349,276	231,484	580,760	39.9

Economic is agriculture, goods, and service output sectors. Non-economic is health, education, and government sectors. Workforce considered total employed plus unemployed.

Source: Statistical Yearbook of the Republic of Macedonia  
Monthly Statistical Bulletin of the Republic of Macedonia

**Table 8, Agriculture Sector Employment Information**

Year	Agriculture and Fisheries		Agriculture Production and Services		SOAE Agriculture	SOAE Agriculture as % Total
	Fisheries	Fisheries	Services	Services		
1987	40,690	345	40,345	31,509		78.1
1988	42,764	356	42,408	31,519		74.3
1989	45,525	349	45,176	31,597		69.9
1990	38,153	551	37,602	30,312		80.6
1991	35,389	915	34,474	28,443		82.5
1992	34,128	525	33,603	27,158		80.8
1993	30,363	607	29,756	26,393		88.7
1994	30,333	527	29,806	23,440		78.6

Source: Statistical Yearbook of the Republic of Macedonia

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Table 9, Agriculture and Agribusiness Sector Employment

Year	Food								Total
	Agriculture & Fisheries	Forestry	Processing Industry	Beverage Industry	Feed Mfg	Tobacco Industry	Wood Industry	Leather Industry	
1987	40,690	4,444	13,414	3,903	231	8,297	12,046	10,352	93,377
1988	42,764	4,427	15,161	3,211	188	7,697	11,270	10,610	95,328
1989	45,525	4,264	13,275	3,373	171	7,896	11,228	10,836	96,568
1990	38,153	4,031	12,813	2,776	429	6,974	10,734	11,253	87,163
1991	35,389	3,916	13,484	2,791	367	5,916	9,076	9,770	80,709
1992	34,128	3,696	12,715	2,537	339	6,191	9,487	9,042	78,135
1993	30,363	3,849	11,909	2,508	311	6,081	9,190	7,224	71,435
1994	30,333	3,592	11,491	2,519	303	6,032	8,866	7,043	70,179
1995	23,832	3,382							
1996 June	21,851	3,364							

Source: Statistical Yearbook of the Republic of Macedonia  
Monthly Statistical Bulletin of the Republic of Macedonia

Table 10, Agriculture and Agribusiness Sector Employment as a Percentage of Total Economic Employment

Year	Food								Total
	Agriculture & Fisheries	Forestry	Processing Industry	Beverage Industry	Feed Mfg	Tobacco Industry	Wood Industry	Leather Industry	
1987	9.5	1.0	3.1	0.9	0.1	1.9	2.8	2.4	21.8
1988	10.0	1.0	3.6	0.8	0.0	1.8	2.6	2.5	22.4
1989	10.7	1.0	3.1	0.8	0.0	1.8	2.6	2.5	22.6
1990	9.1	1.0	3.1	0.7	0.1	1.7	2.6	2.7	20.9
1991	9.3	1.0	3.5	0.7	0.1	1.5	2.4	2.6	21.1
1992	9.4	1.0	3.5	0.7	0.1	1.7	2.6	2.5	21.6
1993	9.0	1.1	3.5	0.7	0.1	1.8	2.7	2.1	21.2
1994	9.8	1.2	3.7	0.8	0.1	1.9	2.9	2.3	22.6

Source: Tables 7 and 8

Table 11, Exchange Rate New Denar = US\$1.00

<u>Year</u>	<u>Denar</u>
1990	0.113
1991	0.197
1992	5.091
1993	23.297
1994	43.259

Source: World Bank

Table 12, Summary Employment Estimates

<u>Year</u>	<u>Estimate of Economically Active Population</u>	<u>Private Farmers Self-Employment Level</u>	<u>Self Employed Owners</u>
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	1000s		
1987		335,200	
1988		332,400	
1989		329,600	
1990	905	326,800	
1991	916	324,000	
1992	927	321,200	
1993	937	318,400	25,525
1994	947	315,600	37,440

Source: Gathered from all sources in reference section  
 Farmers calculated on number of private farm holdings  
 1981 = 176,000 units; 1991 = 162,000 units  
 equivalent 2 persons per unit

AGRICULTURAL DATA

ANNEX IV

Table 1, Agriculture Production Cereals, Metric Tons

Year	Wheat	Corn	Rye	Barley	Oats	Rice*	Total
1985	288,455	79,194	18,136	123,258	4,685	36,188	549,916
1986	314,655	123,627	19,271	137,039	5,063	47,626	647,281
1987	292,326	95,419	16,825	90,642	4,189	49,117	548,518
1988	295,397	75,956	18,269	119,223	4,498	30,508	543,851
1989	313,752	136,700	17,961	160,165	7,029	27,475	663,082
1990	231,382	79,543	16,335	74,155	3,876	27,587	432,878
1991	340,747	134,958	14,814	163,483	4,920	37,501	696,423
1992	299,522	130,259	17,784	127,349	5,361	42,688	622,963
1993	249,789	101,063	11,414	103,455	2,668	9,455	477,844
1994	356,133	133,211	15,475	109,424	4,652	8,713	627,608

\* Rough Rice Assumed

Source: Statistical Yearbook of the Republic of Macedonia

Table 2, Agriculture Production of Cereals by SOAEs, Metric Tons

Year	Wheat	Corn	Rye	Barley	Oats	Rice*	Total
1985	140,593	4,314		60,152		3,772	208,831
1986	154,658	8,245		70,239		5,653	238,795
1987	150,279	3,139		42,937		5,774	202,129
1988	159,115	1,648		60,744		5,518	227,025
1989	151,805	8,094		85,784		3,405	249,088
1990	95,265	2,998		30,136		3,502	131,901
1991	157,827	7,645		78,954		4,089	248,515
1992	131,162	12,430		59,913		4,207	207,712
1993	106,558	9,332		52,223		1,024	169,137
1994	142,323	13,503		71,830		869	228,525

Source: Statistical Yearbook of the Republic of Macedonia

Table 3, Agriculture Production of Cereals by Private Sector Farmers, Metric Tons

Year	Wheat	Corn	Rye	Barley	Oats	Rice*	Total
1985	147,862	74,880		63,106		32,416	318,264
1986	159,997	115,382		66,800		41,973	384,152
1987	142,047	92,280		47,705		43,343	325,375
1988	136,282	74,308		58,479		24,990	294,059
1989	161,947	128,606		74,381		24,070	389,004
1990	136,117	76,545		44,019		24,085	280,766
1991	182,920	127,313		84,529		33,412	428,174
1992	168,360	117,829		67,436		38,481	392,106
1993	143,231	91,731		51,232		8,431	294,625
1994	213,810	119,708		37,594		7,844	378,956

Source: Tables 1 and 2

Table 4, Agriculture Production of Cereals by Private Sector Farmers as a % of Total Production

Year	Wheat	Corn	Rye	Barley	Oats	Rice*	Total
1985	51.3	94.6		51.2		89.6	57.9
1986	50.8	93.3		48.7		88.1	59.3
1987	48.6	96.7		52.6		88.2	59.3
1988	46.1	97.8		49.1		81.9	54.1
1989	51.6	94.1		46.4		87.6	58.7
1990	58.8	96.2		59.4		87.3	64.9
1991	53.7	94.3		51.7		89.1	61.5
1992	56.2	90.5		53.0		90.1	62.9
1993	57.3	90.8		49.5		89.2	61.7
1994	60.0	89.9		34.4		90.0	60.4

Source: Tables 2, 3 and 4

Table 5, Agriculture Production Beans and Lentils, Metric Tons

Year	Beans	Lentils	Total
1985	8,020	167	8,187
1986	8,989	186	9,175
1987	8,121	221	8,342
1988	9,551	166	9,717
1989	13,284	220	13,504
1990	8,983	139	9,122
1991	15,506	157	15,663
1992	13,460	254	13,714
1993	9,688	87	9,775
1994	11,773	104	11,877

Source: Statistical Yearbook of the Republic of Macedonia

Table 6, Agriculture Production Industrial Crops, Metric Tons

Year	Sugar Ind.					Total
	Beets	Tobacco	Sunflowr	Peppers	Cotton	
1985	107,880	30,728	19,515	4,465	889	163,477
1986	86,679	35,020	41,271	3,787	917	167,674
1987	117,592	28,648	32,951	6,734	423	186,348
1988	64,323	22,259	20,774	4,921	377	112,654
1989	152,995	27,538	46,345	2,980	687	230,545
1990	106,420	16,452	13,419	2,868	71	139,230
1991	81,722	25,195	36,685	9,159	42	152,803
1992	61,439	26,502	37,756	6,076	26	131,799
1993	55,102	24,062	18,841	4,035	15	102,055
1994	54,103	18,862	17,880	2,117	14	92,976

Source: Statistical Yearbook of the Republic of Macedonia

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Table 7, Agriculture Production of Industrial Crops by SOAEs, Metric Tons

Year	Sugar		Ind.		Cotton	Total
	Beets	Tobacco	Sunflowr	Peppers		
1985	30,968	1,066	11,410		673	44,117
1986	34,741	1,233	25,774		770	62,518
1987	34,724	1,172	19,811		292	55,999
1988	19,725	1,035	11,977		279	33,016
1989	39,385	1,265	24,196		561	65,407
1990	30,875	848	6,610		0	38,333
1991	41,357	953	20,785		0	63,095
1992	32,653	917	22,534		0	56,104
1993	32,455	632	10,588		0	43,675
1994	36,252	696	8,793		0	45,741

Source: Statistical Yearbook of the Republic of Macedonia

Table 8, Agriculture Production of Industrial Crops by Private Sector Farmers, Metric Tons

Year	Sugar		Ind.		Cotton	Total
	Beets	Tobacco	Sunflowr	Peppers		
1985	76,912	29,662	8,105	4,465	216	119,360
1986	51,938	33,787	15,497	3,787	147	105,156
1987	82,868	27,476	13,140	6,734	131	130,349
1988	44,598	21,224	8,797	4,921	98	79,638
1989	113,610	26,273	22,149	2,980	126	165,138
1990	75,545	15,604	6,809	2,868	71	100,897
1991	40,365	24,242	15,900	9,159	42	89,708
1992	28,786	25,585	15,222	6,076	26	75,695
1993	22,647	23,430	8,253	4,035	15	58,380
1994	17,851	18,166	9,087	2,117	14	47,235

Source: Tables 6 and 7

Table 9, Agriculture Production of Industrial Crops by Private Sector Farmers as a % Total Production

Year	Sugar		Ind.		Cotton	Total
	Beets	Tobacco	Sunflowr	Peppers		
1985	71.3	96.5	41.5		24.3	73.0
1986	59.9	96.5	37.5		16.0	62.7
1987	70.5	95.9	39.9		31.0	69.9
1988	69.3	95.4	42.3		26.0	70.7
1989	74.3	95.4	47.8		18.3	71.6
1990	71.0	94.8	50.7		100.0	72.5
1991	49.4	96.2	43.3		100.0	58.7
1992	46.9	96.5	40.3		100.0	57.4
1993	41.1	97.4	43.8		100.0	57.2
1994	33.0	96.3	50.8		100.0	50.8

Source: Tables 6, 7 and 8

**Table 10, Agriculture Production Vegetables, Metric Tons**

Year	Potatoes	Cabbage/ Kole	Peppers	Garlic	Tomatoes	Onions	Total
1985	77,167	45,199	125,475	3,315	147,961	35,151	434,268
1986	81,698	54,707	153,276	3,802	154,427	34,246	482,156
1987	64,363	53,890	154,044	3,882	153,001	30,583	459,763
1988	69,340	50,967	108,634	2,913	120,366	26,656	378,876
1989	97,648	62,092	79,975	4,648	135,487	37,606	417,456
1990	75,415	55,241	86,580	2,662	137,443	22,537	379,878
1991	118,733	51,154	114,413	3,412	169,170	34,029	490,911
1992	138,282	56,322	112,396	3,964	139,640	34,210	484,814
1993	107,763	53,447	81,030	3,097	125,672	30,853	401,862
1994	133,637	52,753	87,323	3,284	120,802	32,222	430,021

Source: Statistical Yearbook of the Republic of Macedonia

**Table 11, Agriculture Production Field Crops, Metric Tons**

Year	Clover	Alfalfa	Hay	Pea Fodder	Corn Fodder	S Beet Fodder	Total
1985	4,904	93,446	7,504	3,030	33,466	2,908	145,258
1986	5,589	103,797	8,651	3,960	49,672	3,803	175,472
1987	4,335	97,398	8,364	5,977	43,799	3,035	162,908
1988	4,332	86,273	7,000	7,410	37,805	3,848	146,668
1989	4,732	105,124	8,846	6,132	52,945	4,185	181,964
1990	4,463	94,963	7,804	5,195	51,228	3,455	167,108
1991	10,078	113,510	10,292	8,516	47,015	4,391	193,802
1992	6,267	106,641	10,488	8,621	35,646	4,861	172,524
1993	6,042	89,989	7,844	6,947	38,965	4,319	154,106
1994	7,286	95,783	7,131	4,763	43,152	3,671	161,786

Source: Statistical Yearbook of the Republic of Macedonia

Table 12, Agriculture Production Fruit, Metric Tons

Year	Melon	Apple	Pear	Quince	Plum	Cherry	Apricot	Peach	Grapes Vineyard	Total
1985	119,368	98,000	16,304	1,032	17,691	12,217	4,994	11,334	200,758	481,698
1986	123,269	74,769	21,800	1,328	30,532	13,960	9,200	13,319	303,581	591,758
1987	125,600	83,585	17,778	1,469	21,969	14,601	7,908	12,600	277,418	562,928
1988	109,890	76,297	15,775	1,333	14,133	12,451	8,896	10,500	236,451	485,726
1989	101,901	93,300	20,188	1,538	25,046	11,929	10,671	10,308	199,298	474,179
1990	107,589	88,246	16,658	1,359	20,582	11,832	11,518	9,170	192,807	459,761
1991	152,124	48,426	14,722	1,166	24,107	12,442	5,298	7,590	264,281	530,156
1992	118,890	87,642	16,527	1,223	27,821	13,204	6,758	8,386	264,614	545,065
1993	88,762	71,676	14,116	1,052	21,200	10,260	5,715	5,293	127,992	346,066
1994	110,665	70,060	11,632	780	25,230	9,556	5,066	5,405	205,486	443,880

Source: Statistical Yearbook of the Republic of Macedonia

Table 13, Agriculture Production of Fruit by SOAEs, Metric Tons

Year	Melon	Apple	Pear	Quince	Plum	Cherry	Apricot	Peach	Vineyard	Total
1985		16,079	7,383		1,254		2,238	7,472	107,276	141,702
1986		35,175	9,682		1,048		4,858	7,344	169,018	227,125
1987		38,600	7,779		838		3,356	6,982	143,285	200,840
1988		34,172	6,156		1,099		4,516	5,347	138,741	190,031
1989		35,661	8,928		877		5,418	4,786	92,359	148,029
1990		29,041	5,557		690		5,793	4,452	98,813	144,346
1991		11,456	5,279		1,303		1,817	2,972	123,434	146,261
1992		19,599	4,789		1,412		3,318	3,131	129,090	161,339
1993		16,522	4,556		824		2,026	1,657	58,147	83,732
1994		11,901	739		617		1,434	1,796	82,312	98,799

Source: Statistical Yearbook of the Republic of Macedonia

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Table 14, Agriculture Production of Fruit by Private Sector Farmers, Metric Tons

Year	Melon	Apple	Pear	Quince	Plum	Cherry	Apricot	Peach	Vineyard	Total
1985	119,368	81,921	8,921	1,032	16,437	12,217	2,756	3,862	93,482	339,996
1986	123,269	39,594	12,118	1,328	29,484	13,960	4,342	5,975	134,563	364,633
1987	125,600	44,985	9,999	1,469	21,131	14,601	4,552	5,618	134,133	362,088
1988	109,890	42,125	9,619	1,333	13,034	12,451	4,380	5,153	97,710	295,695
1989	101,901	57,639	11,260	1,538	24,169	11,929	5,253	5,522	106,939	326,150
1990	107,589	59,205	11,101	1,359	19,892	11,832	5,725	4,718	93,994	315,415
1991	152,124	36,970	9,443	1,166	22,804	12,442	3,481	4,618	140,847	383,895
1992	118,890	68,043	11,738	1,223	26,409	13,204	3,440	5,255	135,524	383,726
1993	88,762	55,154	9,560	1,052	20,376	10,260	3,689	3,636	69,845	262,334
1994	110,665	58,159	10,893	780	24,613	9,556	3,632	3,609	123,174	345,081

Source: Tables 12 and 13

Table 15, Agriculture Production of Fruit by Private Sector Farmers as a % of Total Production

Year	Melon	Apple	Pear	Quince	Plum	Cherry	Apricot	Peach	Vineyard	Total
1985		83.6	54.7		92.9		55.2	34.1	46.6	70.6
1986		53.0	55.6		96.6		47.2	44.9	44.3	61.6
1987		53.8	56.2		96.2		57.6	44.6	48.4	64.3
1988		55.2	61.0		92.2		49.2	49.1	41.3	60.9
1989		61.8	55.8		96.5		49.2	53.6	53.7	68.8
1990		67.1	66.6		96.6		49.7	51.5	48.8	68.6
1991		76.3	64.1		94.6		65.7	60.8	53.3	72.4
1992		77.6	71.0		94.9		50.9	62.7	51.2	70.4
1993		76.9	67.7		96.1		64.5	68.7	54.6	75.8
1994		83.0	93.6		97.6		71.7	66.8	59.9	77.7

Source: Tables 12, 13 and 14

**Table 16, Total Livestock (Exception of Horses), Number**

Year	Cattle	Hogs	Sheep	Poultry	Total
1985	272,834	147,752	2,320,417	4,884,688	7,625,691
1986	263,854	161,415	2,368,073	5,244,196	8,037,538
1987	289,137	186,685	2,503,206	4,956,007	7,935,035
1988	290,522	156,833	2,377,789	4,426,023	7,251,167
1989	287,630	161,207	2,495,510	4,450,326	7,394,673
1990	287,174	178,537	2,297,115	5,728,981	8,491,807
1991	282,349	170,975	2,250,549	4,562,497	7,266,370
1992	284,919	173,006	2,351,408	4,297,350	7,106,683
1993	280,324	184,920	2,458,648	4,392,721	7,316,613
1994	281,336	171,571	2,446,099	4,685,021	7,584,027

Source: Statistical Yearbook of the Republic of Macedonia

**Table 17, Livestock at SOAEs (Exception of Horses), Number**

Year	Cattle	Hogs	Sheep	Poultry	Total
1985	21,187	59,455	195,494	2,558,142	2,834,278
1986	21,620	74,484	198,165	2,819,281	3,113,550
1987	40,148	82,244	210,430	2,657,245	2,990,067
1988	40,570	69,362	214,531	2,379,705	2,704,168
1989	36,179	72,460	209,095	2,262,852	2,580,586
1990	27,943	82,502	208,835	3,531,767	3,851,047
1991	26,312	72,875	183,564	2,246,452	2,529,203
1992	27,346	77,366	174,874	1,767,255	2,046,841
1993	24,297	71,190	169,392	1,602,901	1,867,780
1994	24,029	65,570	157,779	1,708,578	1,955,956

Source: Statistical Yearbook of the Republic of Macedonia

**Table 18, Livestock Held by the Private Sector (Exception of Horses), Number**

Year	Cattle	Hogs	Sheep	Poultry	Total
1985	251,647	88,297	2,124,923	2,326,546	4,791,413
1986	242,234	86,931	2,169,908	2,424,915	4,923,988
1987	248,989	104,441	2,292,776	2,298,762	4,944,968
1988	249,952	87,471	2,163,258	2,046,318	4,546,999
1989	251,451	88,747	2,286,415	2,187,474	4,814,087
1990	259,231	96,035	2,088,280	2,197,214	4,640,760
1991	256,037	98,100	2,066,985	2,316,045	4,737,167
1992	257,573	95,640	2,176,534	2,530,095	5,059,842
1993	256,027	113,730	2,289,256	2,789,820	5,448,833
1994	257,307	106,001	2,288,320	2,976,443	5,628,071

Source: Tables 16 and 17

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Table 19, Livestock Held by the Private Sector (Exception of Horses) as a % of Total Livestock

<u>Year</u>	<u>Cattle</u>	<u>Hogs</u>	<u>Sheep</u>	<u>Poultry</u>	<u>Total</u>
1985	92.2	59.8	91.6	47.6	62.8
1986	91.8	53.9	91.6	46.2	61.3
1987	86.1	55.9	91.6	46.4	62.3
1988	86.0	55.8	91.0	46.2	62.7
1989	87.4	55.1	91.6	49.2	65.1
1990	90.3	53.8	90.9	38.4	54.6
1991	90.7	57.4	91.8	50.8	65.2
1992	90.4	55.3	92.6	58.9	71.2
1993	91.3	61.5	93.1	63.5	74.5
1994	91.5	61.8	93.5	63.5	74.2

Source: Tables 16, 17 and 18

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Table 20, Total Land Utilization, Harvested Area in Hectares

Group/ Commodity	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
<b>Grains</b>										
Wheat	111,789	112,720	118,751	122,640	103,031	112,750	112,783	111,961	116,987	122,031
Corn	42,343	41,452	41,535	45,734	43,932	41,181	42,169	43,772	44,693	42,719
Rye	14,220	13,192	13,285	13,277	10,983	13,636	11,325	10,884	10,717	10,286
Barley	53,988	52,933	44,035	50,048	56,294	50,687	54,429	55,421	56,424	59,697
Oats	5,086	4,972	4,694	4,771	5,265	4,609	4,531	4,211	3,282	3,710
Rice	9,081	9,325	9,675	8,636	6,056	8,880	8,692	8,465	5,143	1,731
Total	236,507	234,594	231,975	245,106	225,561	231,743	233,929	234,714	237,246	240,174
<b>Industrial Crops</b>										
Sugar Beets	3,062	2,844	3,602	3,794	4,369	4,002	2,211	2,380	2,259	1,616
Tobacco	28,503	30,219	25,458	18,538	24,451	20,818	18,321	22,496	21,609	14,569
Ind Pep	1,748	1,516	2,156	1,510	1,703	1,749	1,754	1,664	1,298	898
Cotton	1,531	1,043	549	564	947	120	48	25	16	11
Sunflowers	21,199	26,562	31,329	27,556	30,104	27,734	28,571	30,417	27,775	20,823
Poppy	1,390	987	404	2,191	988	915	543	373	910	997
Total	57,433	63,171	63,498	54,153	62,562	55,338	51,448	57,355	53,867	38,914
<b>Vegetables</b>										
Potato	11,803	12,098	11,691	12,057	12,907	13,042	12,643	12,808	12,851	13,575
Beans	5,263	5,562	5,668	5,977	6,504	6,168	5,917	6,230	6,417	6,519
Cabbage	2,807	2,778	2,884	3,770	3,743	4,003	4,256	3,585	3,583	3,501
Tomato	7,972	7,286	7,457	7,093	7,731	7,607	7,993	7,456	7,207	6,971
Peppers	9,371	8,866	10,252	9,206	8,896	8,890	9,060	8,633	7,944	7,950
Garlic	1,302	1,255	1,305	1,440	1,459	2,662	3,412	3,964	3,097	3,284
Onion	4,853	4,706	4,633	4,903	5,329	4,634	4,353	4,562	4,450	4,375
Melons	11,257	13,210	11,611	11,487	11,754	11,524	11,476	9,809	9,127	8,785
Lentils	274	250	305	276	293	327	262	320	250	206
Total	54,902	56,011	55,806	56,209	58,616	58,857	59,372	57,367	54,926	55,166
<b>Feed Crops</b>										
Peas	1,434	1,446	2,046	2,486	1,891	1,891	2,097	1,679	2,030	1,614
Corn	1,983	2,553	2,426	2,837	3,533	2,837	3,097	2,158	2,155	2,776
Sugar Beets	150	136	191	244	259	259	248	273	331	378
Clover	1,547	1,663	1,576	1,729	1,698	1,582	2,521	2,129	2,142	2,488
Alfalfa	18,395	18,479	18,399	19,049	19,647	19,647	19,706	18,901	19,357	19,740
Hay	3,801	4,301	4,382	4,216	4,276	4,276	4,940	3,981	4,444	4,609
Total	27,310	28,578	29,020	30,561	31,304	30,492	32,609	29,121	30,459	31,605
GRAND TOTAL	376,152	382,354	380,299	386,029	378,043	376,430	377,358	378,557	376,498	365,859

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Table 21, Orchards In Number of 1000 Trees

Commodity	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Apples	3,307	3,292	3,109	3,104	3,130	3,016	3,045	3,007	2,849	2,817
Pears	1,377	1,454	1,438	1,488	1,403	1,384	1,263	1,167	1,121	960
Quinces	87	91	93	115	95	88	73	64	65	51
Plums	1,747	1,822	1,785	1,801	1,761	1,503	1,481	1,541	1,512	1,459
Cherries	2,165	1,762	1,862	1,833	1,712	1,621	1,612	1,493	1,535	1,421
Apricots	736	862	881	892	821	786	671	582	495	444
Peaches	929	935	924	929	812	834	648	598	565	564
Walnuts	267	270	268	275	265	263	187	206	203	179
Total	10,615	10,488	10,360	10,437	9,999	9,495	8,980	8,658	8,345	7,895

Source: Statistical Yearbook of the Republic of Macedonia

Table 22, Yield in Kilograms per Hectare

Year	Wheat	Corn	Rye	Barley	Oats	Rice	Average Grains
1985	2,580	1,870	1,275	2,283	921	3,985	2,325
1986	2,791	2,982	1,461	2,589	1,018	5,107	2,759
1987	2,462	2,297	1,266	2,058	892	5,077	2,365
1988	2,409	1,661	1,376	2,382	943	3,533	2,219
1989	3,045	3,112	1,635	2,845	1,335	4,537	2,940
1990	2,052	1,932	1,198	1,463	841	3,107	1,868
1991	3,021	3,200	1,308	3,004	1,086	4,314	2,977
1992	2,675	2,976	1,634	2,298	1,273	5,043	2,654
1993	2,135	2,261	1,065	1,834	813	1,838	2,014
1994	2,918	3,118	1,504	1,833	1,254	5,034	2,613

Source: Statistical Yearbook of the Republic of Macedonia

Table 23, Yield Comparisons, Average for 1985-1995

Crop	Production mt	Harvested		Percent Divergence
		Area ha	Yield kg/ha	
<b>Wheat</b>				
Country	296,207	114,459	2,588	
SOAEs	138,956	47,647	2,916	
Private	157,251	66,812	2,354	23.9
<b>Corn</b>				
Country	108,794	42,953	2,533	
SOAEs	7,135	1,482	4,814	
Private	101,659	41,471	2,451	96.4
<b>Barley</b>				
Country	123,817	53,331	2,322	
SOAEs	61,291	20,946	2,926	
Private	62,526	32,385	1,931	51.6
<b>Rice</b>				
Country	32,184	7,565	4,254	
SOAEs	3,781	801	4,721	
Private	28,403	6,764	4,199	12.4

Source: Statistical Yearbook of the Republic of Macedonia

Table 24, Land Tenure Center Report Sample, Kilograms per Hectare, 1995

Crop	Average Yield	Values	No Samples	Range	
<b>Wheat</b>					
Country	3,196	1757833	550		
SOEs	2,463	24630	10		
Private	3,210	1733203	540	3,153	3,412
				Divergence %	8.2
<b>Corn</b>					
Country	3,976	1443359	363		
SOAEs	0	0	0		
Private	3,976	1443359	363	3,554	5,604
				Divergence %	57.7
<b>Barley</b>					
Country	2,833	705516	249		
SOAEs	3,135	21945	7		
Private	2,825	683571	242	2,538	3,079
				Divergence %	21.3
<b>Rice</b>					
Country	5,843	81802	14		
SOAEs	0	0	0		
Private	5,843	81802	14		

Source: Land Tenure Center Report

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Table 25, Agricultural Land Utilization, 1000 Hectares

Year	Agri- culture Land	Pasture	Other	Culti- vatable Land	Culti- vated Area	Orchard	Vine- yard	Meadow	Nursery	Fallow
1987	1,328	660	2	666	397	23	35	52	2	151
1988	1,324	656	2	666	404	23	35	53	2	149
1989	1,323	653	2	668	395	23	36	54	2	158
1990	1,320	651	2	667	400	23	35	54	2	153
1991	1,295	629	2	664	387	23	35	54	2	163
1992	1,308	644	2	662	392	23	34	55	1	157
1993	1,299	634	2	663	391	21	33	56	1	161
1994	1,298	635	2	661	382	20	32	56	1	170

Other - Ponds, reed beds, and fish ponds

Source: Statistical Yearbook of the Republic of Macedonia

Table 26, Cultivated Land Utilization, 1000 Ha

Year	Culti- vated Land	Cereals	Indus- trial Crops	Vegetables	Feed Crops
1987	397	234	66	61	36
1988	404	243	63	61	37
1989	395	227	66	64	38
1990	400	237	62	63	38
1991	387	237	53	61	36
1992	392	237	61	59	35
1993	391	240	58	57	36
1994	382	242	47	57	36

Source: Statistical Yearbook of the Republic of Macedonia

Table 27, Fertilizer Use

Year	Input mt	Culti- vated Land 1000 ha	Average Rate of Use kg/ha	Input mt	Culti- vated Land 1000 ha	Average Rate of Use kg/ha
	(1)			(2)		
1987	53,802	397	135.5	83,503	397	210.3
1988	47,686	404	118.0	79,252	404	196.2
1989	50,527	395	127.9	71,388	395	180.7
1990	37,203	400	93.0	53,242	400	133.1
1991	26,494	387	68.5	38,240	387	98.8
1992	30,809	392	78.6	N/A	392	
1993	24,254	391	62.0	N/A	391	
1994	22,853	382	59.8	N/A	382	

(1) Statistical Yearbook of the Republic of Macedonia

(2) Other Sources

Table 27, Socially-Owned Agricultural Enterprises

	Number	Employees	Average Number of Employees
Agro-kombinats	163	23,496	144
Cooperatives	51	2,897	57
Total	214	26,393	123

Source: World Bank

Table 28, Regional Distribution of Socially-Owned Agricultural Enterprises

Region	Percent of Total SOAEs %	Land Use ha	Number Employees no
Skopje/Kumanovo	15	20,515	3,179
East	7	16,536	1,464
Mediterranean	47	84,963	13,558
Pelagonja	15	49,427	4,531
Great Lakes	6	3,351	1,223
West	11	5,454	1,111
Total		180,246	25,066

Source: World Bank

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Table 29, Largest Socially-Owned Agricultural Enterprises by Employment

<u>Name &amp; Location</u>	<u>Employment</u>
Zik Ovce pole, St Nikole	2,419
Tikves, Kavaiarci	1,837
Pelagonja, Bitola	1,789
Zik Vinojug, Gevgrija (1)	1,764
Zik Crvena zvezda, Stip	1,486
Zik Strumica, Strumica	1,463
Zik Kumanovo, Kumanovo	1,448
Zik Povardariem Negotino	1,172
Lozar, Tito Veles	1,094
Arska reka, Valandovov	668
Agroplot	667
Kocansko Pole	<u>530</u>
Total	16,337

Source: World Bank

(1) Currently said to be already privatized

Table 30, Socially-Owned Agricultural Enterprises by Land Holding

<u>Land Area Ha</u>	<u>Number of Enterprises</u>	<u>Percent</u>
<50	73	33.8
50-99	16	7.4
100-499	40	18.5
500-000	19	8.8
1,000-2,499	23	10.6
2,500-4,999	15	6.9
>5,000	<u>30</u>	<u>13.9</u>
Total	216	100.0

Source: World Bank

Table 1, Per Capita Consumption of Food Items, Kilograms per Capita Unless Otherwise Noted

Item	1990	1991	1992	1993	1994
Bread	118.9	92.3	136.3	119.9	115.6
Flour	59.1	55.0	43.8	47.5	44.5
Pasta	3.1	N/A	2.8	3.4	3.1
Rice	5.7	5.0	4.4	5.1	4.8
Potatoes	22.8	24.6	22.6	24.2	23.1
Beans	6.9	N/A	5.6	6.4	5.4
Onion/Garlic	7.1	N/A	6.0	6.1	6.2
Cabbage	8.0	10.6	7.6	10.1	8.3
Tomatoes	19.0	18.1	15.5	14.8	15.2
Pepper	17.2	19.1	16.1	18.3	17.9
Peas/String Beans	1.1	N/A	1.0	1.2	1.4
Other Vegetables	5.2	N/A	5.3	5.8	8.1
Processed Vegetables	2.0	N/A	1.6	2.0	0.9
Apples/Pears	14.4	12.1	11.2	16.9	15.9
Cherries	2.0	19.3	1.8	2.2	1.6
Apricots/Peaches	1.9	N/A	1.9	1.8	2.7
Melons	13.9	N/A	12.3	11.7	12.5
Grapes	6.1	13.1	7.2	6.1	12.9
Other	2.6	N/A	3.3	3.9	3.5
Processed Fruit	4.1	N/A	2.8	3.2	3.9
Beef	4.0	8.0	5.8	6.8	7.4
Pork	7.4	6.9	6.8	7.8	8.3
Mutton/Lamb	1.4	1.4	1.2	2.3	2.5
Poultry	8.7	6.5	6.4	8.0	8.0
Other	0.2	N/A	0.2	0.2	1.3
Processed Meats	4.3	N/A	3.5	3.8	3.6
Milk (liters)	61.3	58.6	59.0	59.8	68.6
Sour Cream/Yogurt	8.5	12.2	7.4	7.3	10.4
Cheese	9.0	7.8	8.3	7.5	8.1
Other	0.2	N/A	0.4	0.2	0.2
Eggs (number)	121.3	150.0	149.5	136.7	161.6

Source: Statistical Yearbook of the Republic of Macedonia

Table 2, Percent of Household Expenditure Spent on Food, Not Including Beverages and Tobacco, Denars

Year	Total Expenses	Food Expenses	Food as a % of Total Expenses
1990	55,734	24,622	44.2
1991	N/A	N/A	N/A
1992	12,952	6,335	48.9
1993	63,532	30,627	48.2
1994	146,889	69,435	47.3

Source: Statistical Yearbook of the Republic of Macedonia

Table 3, Selected Food Item Expenditures, Percent of Household and Food Expenditures, Average Over 1992-94

Item	Household	Food
Meat	10.0	20.9
Cereals	10.7	22.2
Dairy	8.4	17.5
Vegetables	4.7	9.7
Fruit	3.7	7.8
Other	10.6	21.9
Total	48.1	100.0

Source: Statistical Yearbook of the Republic of Macedonia

Table 4, External Trade US\$1000

Year	Imports	Exports	Trade Balance
1990	1,530,851	1,112,186	(418,665)
1991	1,274,166	1,095,450	(178,716)
1992	1,206,108	1,198,626	(7,482)
1994	1,199,351	1,055,299	(144,052)
1994	1,484,092	1,086,343	(397,749)
1995 est	1,721,547	1,205,841	(515,706)

Source: Statistical Yearbook of the Republic of Macedonia

Table 5, External Trade in Agribusiness Products US\$1000

Year	Food Products	Beverages & Tobacco	Crude Materials	Leather Products	Wood Products	Total
<b>Imports</b>						
1990	96,334	46,388	32,720	21,715	8,364	205,521
1991	61,185	43,813	21,410	17,908	11,496	155,812
1992	164,735	23,851	18,841	13,960	30,264	251,651
1993	206,297	31,504	14,788	6,551	28,044	287,184
1994	282,272	24,456	20,341	3,834	45,815	376,718
Total	810,823	170,012	108,100	63,968	123,983	1,276,886
<b>Exports</b>						
1990	19,434	34,458	10,115	6,348	3,244	73,599
1991	42,188	77,888	15,904	7,739	4,742	148,461
1992	183,940	138,511	17,275	6,309	3,660	349,695
1993	116,300	100,415	26,553	5,696	4,749	253,713
1994	110,334	62,043	32,992	8,197	4,688	218,254
Total	472,196	413,315	102,839	34,289	21,083	1,043,722
<b>Trade Balance</b>						
1990	(76,900)	(11,930)	(22,605)	(15,367)	(5,120)	(131,922)
1991	(18,997)	34,075	(5,506)	(10,169)	(6,754)	(7,351)
1992	19,205	114,660	(1,566)	(7,651)	(26,604)	98,044
1993	(89,997)	68,911	11,765	(855)	(23,295)	(33,471)
1994	(171,938)	37,587	12,651	4,363	(41,127)	(158,464)
Total	(338,627)	243,303	(5,261)	(29,679)	(102,900)	(233,164)

Source: Statistical Yearbook of the Republic of Macedonia

Note: Food products also include feed. Crude materials include hides, oilseeds, wood framing & NEC crude animal and vegetable materials. Leather products include leather and leather manufactured products. Wood products include both wood and paper products.

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**Table 6, Agribusiness Products Imports as a Percentage of Total Imports**

Year	Food Products	Beverages & Tobacco	Crude Materials	Leather Products	Wood Products	Total
1990	6.3	3.0	2.1	1.4	0.5	13.4
1991	4.8	3.4	1.7	1.4	0.9	12.2
1992	13.7	2.0	1.6	1.2	2.5	20.9
1993	17.2	2.6	1.2	0.5	2.3	23.9
1994	19.0	1.6	1.4	0.3	3.1	25.4

**Table 7, Agribusiness Products Exports as a Percentage of Total Exports**

Year	Food Products	Beverages & Tobacco	Crude Materials	Leather Products	Wood Products	Total
1990	1.7	3.1	0.9	0.6	0.3	6.6
1991	3.9	7.1	1.5	0.7	0.4	13.6
1992	15.3	11.6	1.4	0.5	0.3	29.2
1993	11.0	9.5	2.5	0.5	0.5	24.0
1994	10.2	5.7	3.0	0.8	0.4	20.1

**Table 8, Key Agricultural Commodity/Product Imports and Exports for Years 1990 through 1994 in Metric Tons**

Commodity	1990	1991	1992	1993	1994
-----Imports-----					
Corn	34,468	28,042			82,860
Durum Wheat				27,327	43,305
Wheat					75,441
Flour				31,671	20,626
Oilmeals				13,017	
Melons	19,372	44,640			
Tomatoes	12,436	15,559			
Potatoes					17,845
Other Vegetables	4,861	8,126		36,068	13,418
Meat				3,782	
Poultry				9,588	12,093
Milk Products					12,672
Cheese	6,357	5,414		6,365	5,211
Sugar				29,737	43,265
-----Exports-----					
Rice				9,001	
Beans	412	2,727			
Tomatoes				17,921	12,961
Cucumbers				3,944	5,310
Other Vegetables				17,752	30,760
Wine				45,416	44,340
Apples				32,274	26,657
Grapes				10,119	12,773
Prepared Fruit					5,590
Beef	1,524	818		1,582	1,745
Lamb	1,129	1,509		1,152	
Tobacco	5,417	15,736		12,989	10,424

Source: Statistical Yearbook of the Republic of Macedonia

No data for 1992 could be located

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Table 9, Consumption of Raw Products in the Food Industry, Metric Tons

Year	Flour	Fresh Meat	Sugar	White		Fruit	Feed
				Cereals	Vegetables		Industry Corn
1990	83,943	1,718	11,306	200,485	26,456	12,153	76,587
1991	72,410	2,252	13,995	210,544	17,522	8,614	69,751
1992	82,624	1,375	9,652	309,405	17,401	9,966	55,816
1993	71,149	1,696	8,667	201,528	10,768	10,618	59,104
1994	70,845	1,460	4,929	216,327	15,342	4,045	46,421

Source: Statistical Yearbook of the Republic of Macedonia

Table 10, Average Annual Retail Prices Selected Products, Denars per Kg Unless Otherwise Specified

Year	1990	1991	1992	1993	1994
Rice	0.28	0.26	6.16	22.25	43.34
Wheat Flour	0.05	0.12	3.03	11.74	20.01
Bread	0.09	0.19	2.58	13.24	27.94
Noodles	0.18	0.31	8.31	31.18	68.00
Potatoes	0.07	0.61	2.15	12.72	24.45
Beans	0.33	0.51	5.32	20.92	88.53
Onions	0.10	0.68	2.34	14.51	29.85
Apples	0.09	0.20	2.67	11.20	22.99
Mutton	0.37	0.62	9.05	44.97	85.00
Lamb	0.76	6.32	20.93	69.86	173.09
Milk (liter)	0.07	0.15	2.06	10.67	24.59
Cheese	0.48	0.86	20.25	92.39	202.47
Butter	0.82	1.58	29.76	42.55	258.84

Source: Statistical Yearbook of the Republic of Macedonia

Table 11, Total Meat Production, Metric Tons

Year	Beef	Pork	Mutton	Poultry	Other	Total
1985	10,970	12,043	12,048	7,754	2077	44,892
1986	10,697	10,679	12,014	6,698	1856	41,944
1987	10,542	10,854	12,367	8,460	1875	44,098
1988	9,551	11,731	15,341	7,629	1738	45,990
1989	10,757	10,262	11,434	5,815	1769	40,037
1990	9,523	9,731	14,377	2,297	1618	37,546
1991	8,238	9,915	13,145	2,419	1541	35,258
1992	7,549	10,443	12,394	2,300	1428	34,114
1993	8,416	9,634	12,882	1,871	1206	34,009
1994	7,545	9,664	13,050	2,181	1347	33,787

Source: Statistical Yearbook of the Republic of Macedonia

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**Table 12, Total Animal Product Production**

<u>Year</u>	<u>Milk</u> <u>1000 lt</u>	<u>Wool</u> <u>mt</u>	<u>Eggs</u> <u>million</u>	<u>Honey</u> <u>mt</u>
1985	153,154	2,519	542	921
1986	157,720	2,550	603	895
1987	180,181	2,619	577	860
1988	173,016	2,703	548	536
1989	179,394	2,813	552	688
1990	179,946	2,597	587	766
1991	179,479	2,563	574	918
1992	175,790	2,642	516	1,608
1993	178,030	2,840	515	901
1994	177,179	3,147	510	920

Source: Statistical Yearbook of the Republic of Macedonia

**Table 13, Animal Product Production by SOAEs**

<u>Year</u>	<u>Milk</u> <u>1000 lt</u>	<u>Wool</u> <u>mt</u>	<u>Eggs</u> <u>million</u>	<u>Honey</u> <u>mt</u>
1985	34,742	323	408	
1986	36,109	318	456	
1987	37,524	335	443	
1988	36,724	369	436	
1989	40,031	346	412	
1990	42,082	344	449	
1991	40,184	333	406	
1992	37,655	294	336	
1993	38,069	256	317	
1994	36,349	273	295	

Source: Statistical Yearbook of the Republic of Macedonia

**Table 14, Animal Product Production by Private Sector**

<u>Year</u>	<u>Milk</u> <u>1000 lt</u>	<u>Wool</u> <u>mt</u>	<u>Eggs</u> <u>million</u>	<u>Honey</u> <u>mt</u>
1985	118,412	2,196	134	921
1986	121,611	2,232	147	895
1987	142,657	2,284	134	860
1988	136,292	2,334	112	536
1989	139,363	2,467	140	688
1990	137,864	2,253	138	766
1991	139,295	2,230	168	918
1992	138,135	2,348	180	1,608
1993	139,961	2,584	198	901
1994	140,830	2,874	215	920

Source: Tables 12 and 13

Table 15, Animal Product Production by Private Sector as a % of Total Production

Year	Milk	Wool	Eggs
1985	77.3	87.2	24.8
1986	77.1	87.5	24.3
1987	79.2	87.2	23.2
1988	78.8	86.3	20.4
1989	77.7	87.7	25.4
1990	76.6	86.8	23.5
1991	77.6	87.0	29.2
1992	78.6	88.9	35.0
1993	78.6	91.0	38.5
1994	79.5	91.3	42.1

Source: Tables 12, 13 and 14

Table 16, Purchase of Agricultural Products from Private Sector by Social Sector, Metric Tons

Year	Wheat/		Potatoes	Apples	Eggs	Cattle	Pigs	Sheep
	Rye	Corn						
1986	51,341	1,668	2,551	2,087	167	4,894	1,744	8,027
1987	51,384	1,279	1,307	2,721	431	5,558	1,894	13,084
1988	101,608	1,148	2,236	2,468	619	5,973	2,105	11,390
1989	39,771	417	2,882	1,465	328	4,711	1,221	20,112
1990	37,803	664	1,702	453	1,331	2,952	658	6,844
1991	48,282	703	960	752	129	4,106	1,138	8,642
1992	47,621	1,735	1,011	156	25	2,999	440	6,355
1993	81,847	618	876	178	38	2,778	443	3,631
1994	64,422	716	862	58	51	2,604	394	4,502
1995	82,845	763	355	26	24	294	96	3,165

Source: Statistical Yearbook of the Republic of Macedonia

Table 17, Processing Output, Metric Tons

Year	Flour	Rice	Pasta	Pro-	Canned	Fresh	Sausage	Livestock
				cessed	Vege-			Meat
1990	137,884	8,715	1,445	15,389	8,563	11,855	1,370	180,625
1991	141,433	8,633	1,618	15,787	9,192	10,921	1,555	167,137
1992	147,415	10,961	1,202	6,728	7,990	8,121	1,731	140,320
1993	141,160	6,578	1,025	6,108	6,928	7,128	1,891	143,034
1994	144,134	3,340	1,156	5,094	7,283	6,945	1,341	126,146
1995	170,970			4,489	6,053			126,583

Source: Statistical Yearbook of the Republic of Macedonia

**Table 18, Quantities of Total Purchases of Agricultural Products, Metric Tons**

<u>Year</u>	<u>Wheat</u>	<u>Corn</u>	<u>Rye</u>	<u>Barley</u>	<u>Oats</u>	<u>Rice*</u>	<u>Total</u>
1985	126,545	6,474	4,529	27,957	1	15,767	181,273
1986	155,674	4,977	3,101	25,487	7	24,316	213,562
1987	159,946	2,561	8,042	15,319	7	16,718	202,593
1988	188,478	1,725	3,944	22,183	99	17,620	234,049
1989	144,917	3,390	1,486	33,487	580	7,694	191,554
1990	90,951	775	4,978	8,554	144	5,386	110,788
1991	155,521	7,415	3,424	23,160	5	13,081	202,606
1992	128,404	3,072	1,040	18,091	851	6,441	157,899
1993	135,195	4,196	3,381	35,937	85	3,881	182,675
1994	156,578	9,423	342	31,206	0	741	198,290

\* Rough Rice

Source: Statistical Yearbook of the Republic of Macedonia

**Table 19, Quantities of Total Purchases of Agricultural Products as a % of Production**

<u>Year</u>	<u>Wheat</u>	<u>Corn</u>	<u>Rye</u>	<u>Barley</u>	<u>Oats</u>	<u>Rice*</u>	<u>Total</u>
1985	43.9	8.2	25.0	22.7	0.0	43.6	33.0
1986	49.5	4.0	16.1	18.6	0.1	51.1	33.0
1987	54.7	2.7	47.8	16.9	0.2	34.0	36.9
1988	63.8	2.3	21.6	18.6	2.2	57.8	43.0
1989	46.2	2.5	8.3	20.9	8.3	28.0	28.9
1990	39.3	1.0	30.5	11.5	3.7	19.5	25.6
1991	45.6	5.5	23.1	14.2	0.1	34.9	29.1
1992	42.9	2.4	5.8	14.2	15.9	15.1	25.3
1993	54.1	4.2	29.6	34.7	3.2	41.0	38.2
1994	44.0	7.1	2.2	28.5	0.0	8.5	31.6

Source: Tables 17 and 18



Table 20, Quantities of Total Purchases of Agricultural Products, Metric Tons

Year	Beans	Potatoes	Peas	Onion	Carrot	Cabbage	Garlic	Tomato	Pepper	Cucumber	Mellon	Other	Total
1985	1,279	3,623	247	4,902	169	10,529	102	73,035	73,190	9,231	15,008	5,098	196,413
1986	1,297	3,182	293	3,651	88	8,656	131	36,449	64,199	8,844	15,506	4,273	146,570
1987	2,900	1,502	41	2,318	85	6,676	44	31,996	47,824	8,623	23,497	3,057	128,563
1988	1,513	2,483	187	4,193	29	17,609	70	40,775	33,538	7,624	17,103	3,616	128,740
1989	1,002	3,315	36	6,154	950	7,285	166	39,343	15,524	11,161	10,358	2,410	97,704
1990	488	2,115	10	1,506	108	5,306	76	39,585	10,331	8,833	8,436	1,863	78,657
1991	1,258	1,179	9	905	215	4,472	8	22,695	20,648	11,587	10,216	1,291	74,483
1992	487	1,591	10	1,347	63	5,603	11	19,847	9,620	7,990	10,364	3,419	60,352
1993	608	1,291	1	499	153	1,489	2	16,945	5,933	8,229	5,639	3,407	44,196
1994	224	1,553	0	303	68	1,519	1	22,706	3,052	6,929	5,663	1,343	43,361

Source: Statistical Yearbook of the Republic of Macedonia

Table 21, Quantities of Total Purchases of Agricultural Products, Metric Tons

Year	Edible Proc.		Table Wine		Plum	Cherry	Sour		Apri-cots	Straw-			Total	Without
	Apple	Apple	Grapes	Grapes			Cherry	Cherry		Berry	Pears	Other		Wine Grapes
1985	20,900	15,151	30,075	74,868	930	23	4,446	811	5,196	40	3,226	621	156,287	81,419
1986	10,494	9,066	25,226	124,923	2,026	25	3,918	2,997	6,116	20	3,510	817	189,138	64,215
1987	21,397	15,828	23,223	120,913	497	204	6,790	1,378	4,631	17	2,848	672	198,398	77,485
1988	11,757	14,433	27,199	112,299	766	8	7,341	660	2,832	10	1,805	516	179,626	67,327
1989	14,596	19,165	22,973	77,387	359	147	3,838	2,458	3,517	65	3,465	378	148,348	70,961
1990	11,694	13,516	16,677	42,207	527	59	4,032	2,483	2,554	84	1,814	530	96,177	53,970
1991	8,110	4,352	17,717	94,633	358	38	2,824	1,072	1,826	1	908	806	132,645	38,012
1992	6,457	10,224	21,236	73,632	132	27	4,335	1,338	2,366	0	113	58	119,918	46,286
1993	6,901	15,656	6,182	26,403	94	4	1,639	553	590	1	37	50	58,110	31,707
1994	5,557	4,903	8,114	106,189	7	2	1,907	322	804	1	103	47	127,956	21,767

Source: Statistical Yearbook of the Republic of Macedonia

Table 22, Quantities of Total Purchases of Agricultural Products, Metric Tons

Year	Hogs	Cattle	Sheep	Lambs	Poultry	Eggs	Milk	Milk Products	Total
1985	11,704	8,485	2,426	8,691	1,992	17,600	37,385	2,170	90,453
1986	8,309	6,919	1,598	8,527	1,800	16,250	34,756	2,822	80,981
1987	10,222	7,221	2,296	12,427	1,848	18,300	32,995	2,195	87,504
1988	11,325	7,116	1,683	11,505	1,254	16,550	34,169	2,189	85,791
1989	8,408	5,702	2,006	19,480	932	15,250	29,689	1,884	83,351
1990	4,879	3,921	1,321	6,396	592	10,250	17,762	1,461	46,582
1991	8,602	6,772	1,300	8,786	618	12,650	31,542	1,590	71,860
1992	6,527	5,700	921	6,614	1,388	13,900	28,004	1,266	64,320
1993	5,615	5,110	945	4,549	423	11,100	31,343	1,327	60,412
1994	5,093	3,950	494	5,051	363	10,000	43,035	1,381	69,367

Source: Statistical Yearbook of the Republic of Macedonia

Table 23, Summary Table of Quantities of Total Purchases of Agricultural Products, Metric Tons

Year	Grains	Vegetables	Fruits*	Animal Products
1985	181,273	196,413	81,419	90,453
1986	213,562	146,570	64,215	80,981
1987	202,593	128,563	77,485	87,504
1988	234,049	128,740	67,327	85,791
1989	191,554	97,704	70,961	83,351
1990	110,788	78,657	53,970	46,582
1991	202,606	74,483	38,012	71,860
1992	157,899	60,352	46,286	64,320
1993	182,675	44,196	31,707	60,412
1994	198,290	43,361	21,767	69,367

\* Without Wine Grapes

Table 24, Per Capita Availability and Consumption, Kilograms Unless Otherwise Specified

Year	Wheat	Rice	Cereals	Beans/ Lentils	Vege- tables	Fruits	Meat	Milk (Lt)	Eggs No
<b>Production</b>									
1985	146.5	12.5	279.3	4.2	220.6	244.6	22.8	77.8	275.3
1986	158.8	16.3	326.6	4.6	243.3	298.6	21.2	79.6	304.2
1987	146.5	16.7	274.9	4.2	230.5	282.2	22.1	90.3	289.2
1988	147.2	10.3	271.0	4.8	188.8	242.0	22.9	86.2	273.0
1989	155.5	9.3	328.6	6.7	206.9	235.0	19.8	88.9	273.5
1990	114.1	9.3	213.5	4.5	187.3	226.7	18.5	88.7	289.4
1991	167.1	12.5	341.6	7.7	240.8	260.0	17.3	88.0	281.5
1992	145.7	14.1	303.0	6.7	235.8	265.1	16.6	85.5	251.0
1993	120.9	3.1	231.3	4.7	194.5	167.5	16.5	86.2	249.3
1994	171.6	2.9	302.5	5.7	207.2	213.9	16.3	85.4	245.8
<b>Consumption</b>									
1990	185.3	5.7		6.9	89.3	45.1	26.0	61.3	121.3
1991	157.2	5.0		6.3	94.7	49.6	29.3	58.6	150.0
1992	180.2	4.4		5.6	81.3	40.5	23.9	59.0	149.5
1993	171.3	5.1		6.4	88.9	45.8	28.6	59.8	136.7
1994	163.4	4.8		5.4	86.5	53.2	28.8	68.6	161.5

Source: Data from Statistical Yearbook of the Republic of Macedonia

## I. EXECUTIVE SUMMARY

The livestock-animal products sub-sector is important in satisfying domestic food demand in Macedonia. Meat and dairy products are important sources of protein in the diet and preferred food products by the general population, both in low income to high income segments of the population. Macedonia imports significant amounts of meat and dairy products to fill the deficit between consumer demand and domestic production.

Domestic livestock and meat production is low, partly due to animal husbandry and marketing practices. There is a deficit in feed availability from the major feedstuffs for improved feeding. Some improvements have been made in genetic improvements in both the cattle and sheep industries, but average production yields are low compared to major livestock producing countries. The outlook for significant improvements in the production efficiency is not optimistic under the general economic conditions in Macedonia. Livestock herds are being reduced (except for dairy cows) both in the private sector and on social sector agro-kombinats. New investment in livestock-animal products sub-sector will be a long term proposition requiring initiatives in both production and marketing. The return on the investment will be increased food security, import substitution, and the generation of income to small to medium size private operations. If Macedonia enters the EU there could be positive trade impacts.

A significant risk factor in the return to investment in livestock is the likelihood of continued animal health issues that have a dual impact on the livestock sub-sector. Domestic consumer confidence in the safety of Macedonian meat is low. Currently, neighboring EU countries severely restrict the access of Macedonia animal products. The prospects are high for continued outbreaks of animals health diseases because of institutional rigidities that prevent the control and monitor of animal diseases domestically as well as prevent transmission from neighboring countries.

A plan is set forth that targets key segments of the livestock-animal products sub-sector for development. Interventions are recommended for each segment group through the use of technical assistance, education and training, credit programs and government policies.

## II. OVERVIEW

The livestock-animal products sub-sector is important to the broader agricultural sector of Macedonia. Products from this sub-sector are primarily consumed domestically with only limited export opportunities in the future. The country is deficit in animal protein products, and meat and dairy products are of particular importance in assuring an adequate and balanced diet at affordable prices.

Macedonia has both cultivated lands and pasturelands to support a mix livestock enterprises (Table 1). Feed availability is a limiting condition

on the development of the livestock industry which requires imported feedstuff. There is a long history of animal husbandry in Macedonia with small ruminants being of particular importance. The rugged terrain in parts of the country are only suitable for grazing livestock.

Unlike other centrally planned economies in Eastern Europe, livestock production has occurred in both the private sector as well as on agro-kombinats (state farms). This factor is important in alleviating some of the food production dislocations as the country moves to privatization of state enterprises. However, these state enterprises have been important as purchasers of products from private farmers. Because agro-kombinats are being privatized, this is causing marketing problems for individual farmers.

### Livestock

The cattle inventory has increased slightly mostly due to the dairy industry which has remained stable at approximately 280,000 head. The number of cows and bred heifers in 1994 was 165,000 head with a calving percentage of 77 percent. This rate is low compared to the productive efficiency in the U.S. of over 90 percent calving rates. The Macedonian herd is small and produces approximately 7,500 mt of meat a year (see Table 2).

The swine industry is a relatively small and produced 9,500 mt in 1994, slightly more than from the cattle industry. There are five agro-kombinats that have farrow to finish operations of 3,000 to 4,000 sows. Pigs are also raised by private farmers on a small-scale basis. A few pigs were seen being raised as a side enterprise to dairy operations.

By far the largest number of livestock in Macedonia is sheep. The national flock is found at higher elevations on the eastern and western boundaries of the country. Sheep numbers are reported to be 2.5 million head, but there is some question whether the national flock is this large. Some estimates place the national ewe flock at approximately 750,000 head. The average flock size is 110 - 130 ewes, and average weight of a ewe is 40 - 50 kg. Production of sheepmeat is approximately 13,000 mt down from a reported high in 1988 of 15,300 mt. Wool production is a by-product, and the industry produced 3,147 mt of wool considered to be of low quality because of its short fiber.

### Poultry

The poultry industry has maintained an average flock of 4.7 million birds during the period of 1987 to 1994. The flock is primarily for the production of eggs. The total production of eggs in 1994 was 510 million or about 127 eggs per layer assuming that all poultry were layers. Poultry meat production was 2,200 mt in 1994 which is low compared to the same flock size reported in 1988 (table 2).

## Dairy

Milk production is from two sources: cows and sheep with only a small quantity of goat milk being produced (Table 3). Until recently goats were banned because of their perceived negative impact on the natural resource. There are approximately 170,000 cows and bred heifers in Macedonia and only about one-third are high producing cows (56,600 head). Ninety percent of the cows are owned by the private sector. There are 28 - 30 state farms with 250 - 1200 head, mainly in the Skopje and Bitola areas. National production of cow's milk averages 113 million liters. Based on available data, the production is 2,000 lt per cow per lactation. This estimate is higher than the agricultural statistics estimate of 1,300 lt per cow. East Frisian cows with a good feeding regime can average around 5,000 lt per cow at some Macedonian dairies.

Sheep's milk production in 1994 was estimated at 61,388 liters and average yield per ewe reported to be 37 liters per ewe (Agricultural Statistics 1995). If the ewe flock is reduced to the lower estimate of 750,000 head, the average milk production per ewe is 82 liters. The sheep in Macedonia are of a general dual purpose variety with milk yield averaging less than one liter per day. MAFWE has promoted a cross-bred sheep, Pramnka (local) with the Virtenbreg (German). The animal has a large frame size and produces a heavier carcass, but the milk yield is not high, around 200 gr/day.

## Consumption, Imports, Exports and Cost Competitiveness

Macedonians spent a large portion of their disposable income on food. In 1994, food expenditures as a percent of total expenditures was 47 percent. Meat represented 21 percent of the food budget and milk, dairy and eggs was 19 percent (Table 6). These large percentages confirm the importance of dairy and meat products in the national diet. It supports the reason for assistance to this sub-sector because of the direct benefits to both producers and consumers.

Imports have been important in meeting domestic consumption of meat and dairy products. Based on human population estimates (Table 4), a national supply and demand balance sheet is constructed from national agricultural statistics (Table 5). Dairy imports have been the major commodity group in both tonnage and cost. Per capita consumption of dairy products is 87.5 kg/cap and this high amount with the population growth of 1 percent a year will mean an annual increase in import demand of approximately 1,800 mt, equivalent to USD 1.5 million. The value of dairy imports in 1994 was over \$ 30 million.

The livestock, meat and dairy sub-sector is unlikely to see major exports of products from Macedonia with the exception of sheepmeat and eggs in which the country is self-sufficient. In the past Macedonia has exported beef, mutton, and lamb. A bright spot is the specialty lamb export trade to Greece and Italy. Because of the unique nature of this product, this trade offers an opportunity with some promise for sheep producers to

increase their income. Currently, the lamb export market is closed because of the presence of Foot and Mouth Disease (FMD).

The cost competitiveness for livestock and meat is not clearly understood because of a general lack of data, but it is believed that Macedonians are high cost producers. Industry data by SIC codes are not available to establish benchmarks and ratios for firms in the industry.

### III. POSTHARVEST SYSTEM

#### Domestic Marketing

Cattle - Beef: Cattle herds in the private sector tend to be small with private owners unable to manage large numbers of animals. Agro-kombinats tend to manage larger beef cattle herds, and animals are sold to other kombinats for slaughter or to their own slaughter plants. There are socially-owned butcher shops where the meat is sold to the public.

Terminal markets for cattle do exist and the largest are the Skopje and Titova markets. Butchers buy both from the terminal market as well as directly from private owners of cattle. Animals are taken to the municipal slaughter plant where they are slaughtered, a fee is paid for the slaughter (D 10/kg) and inspection (4% of carcass value). Carcasses are quartered and transported to retail butcher shops. Some of the valuable by-products from the slaughtering process are not retrieved for use in animal feed, e.g. blood and bones.

There are ten slaughter plants in Macedonia with EU certification for export. The available capacity far exceeds the domestic supply with two plants sufficient.

Swine: Pigs are sold mainly in private treaty between butchers and individual owners. Like cattle, pigs are purchased and transported by the butcher to the local abattoir to be slaughtered. Pork is not eaten by people of the Islamic religion, and butcher shops catering to muslims will not retail both pork and beef in the same butcher shop. Agro-kombinats sell directly to their own slaughter facilities or to other socially-owned facilities.

Sheep: The main products from sheep are lambs and the milk. Lambs have only a narrow window for premium sales related to religious events. Producers need to be adequately prepared and informed if they are to obtain the best prices for their lambs.

The market for mutton seems to be unorganized with the product seen as an inferior product with little value. Mutton seems to be sold mainly in the rural areas and predominately consumed by muslims. This is a product that has some limited potential for value-added if managed properly through possibly canning of the product for export sales to low income countries (Macedonia exported mutton before independence). If mutton carcasses can be purchased cheap enough, D 100/kg, butchers believe they can merchandise and make a small profit.

Sheep's milk is a major by-product from the flock. Quantities from any one producer are not large which increases the likelihood of longer periods before collection by processors resulting in higher bacteria counts. Producers who sell to nearby small-scale yogurt and cheese processors can improve their quality. Sales to larger processors and more distant markets need to commingle their product for sale. Sheep's milk is processed into cheese mainly during the lambing season, March to June, when the flock is on the mountain pastures. Home production of cheese from unpasteurized milk takes a minimum of three months, and most of the cheese production occurs during the summer months.

There is currently no postharvest handling and marketing of wool. Producers reported that their houses are full of wool with no serious buyers present. Some producers reported storing their wool for the past five years. Producers are generally at a loss as what to do with their product, especially since the textile mill in Ohrid is closed for financial reasons. The current price is D 20/kg for unwashed wool. An organized marketing program is needed to clear current inventories of wool.

Poultry: The poultry industry is targeted for egg production. The market channel is relatively short with producers selling eggs directly to the retail market and to private wholesalers. Agro-kombinats will sell in towns hiring people to maintain their rented booth. Eggs may be transported from the production site to urban areas. One producer interviewed described his marketing channel as cleaning the eggs and then transporting to the local market where he sells eggs daily. In 1995 he sold 1.5 million eggs at one stall in Bitola.

The prices for eggs are clearly displayed in the market with the price quoted for a tray of 30 eggs. Current retail prices range from D 130 to D 170 based on the size of the egg, with an average price of D 5 per egg. In 1995, the egg industry in Macedonia was severely hurt when low cost eggs were imported from Turkey in large numbers. Producers had expanded production based on good prices in 1994. Some producers have not recovered from that setback.

### Food Processing

Meat Processing: There are ten large slaughter facilities in Macedonia with export certification to the EU. The amount of available capacity far exceeds the offtake of livestock in Macedonia, and the current utilized capacity is less than 20 percent. Two plants would be sufficient to service the domestic livestock industry. Plants are multi-specie and slaughter cattle, sheep and pigs. The Skopje plant is currently not slaughtering any livestock, but is buying carcasses from Serbia and other neighboring countries and then further processing the meat. The Skopje plants does custom processing for private meat companies which import carcasses. One company imports 17 - 20 mt/wk of pork carcasses for processing. The private companies have their own distribution system.

Milk Processing: There are several dairy processing plants that are in different stages of privatization. Surplus capacity exists in the dairy

processing industry. The Bitola plant is the one of the better dairy processors with a full-line of dairy products.

The Skopje Dairy is currently in financial difficulties and has not paid its accounts to producers in several months. This plant will be privatized in the near future, and its ability to survive is questionable. This dairy has an ice cream processing line but it is not functioning. Ice cream is mainly imported from Greece with some items from the U.S. Macedonian ice cream products are up to the standards of imported products.

There are a number of small meat and dairy processing companies that exist. These plants are small but a cross-section interviewed suggest that they will survive and actually prosper. Their fixed costs are low, and they can produce without large reserves of capital. One plant in Skopje is a modern and integrated operation producing, processing and retailing its own milk. This plant has control over its quality and has no problem of non-payment for its final products. These groups of private businesses can become an important core to bolster the overall industry as the few larger companies serve the market with pasteurized and sterilized fluid milk.

The costs and returns for a typical yogurt processing plant is illustrated in Table 7. The gross margin is approximately 11 percent (utility cost was not known). A small plant processing 1,000 lt/day of yogurt can gross D 4,000/day before taxes.

Table 7. Cost Analysis of a Small-Scale Milk Processing Plant, 1,000 lt/day Capacity

	Dinar/Liter
Sale Revenues	
Drink Yogurt (1 lt plastic bottle)	35
Direct Cost	
Raw cow's milk	20
1 lt Package	6
Labor (D 2166/day)	2
Distribution	3
	==
Sub-total	31
Gross Margin	4

Wholesale Markets

Private traders are seen as both the scourge of the marketing system as well as the savior for small private livestock owners. On the one hand private traders source inputs for producers and also purchase their products. Private traders are consistently behind in their payments to producers partly because they in turn do not receive timely payment. A clear example is the sale of a large quantity of cheese by sheep producers in the Debar region who sold their cheese to a private trader from Ohrid for DM 150,000. The trader then sold the cheese at a lower price and did not repay the producers. He now resides in prison and bankrupt, and the producers are unlikely to receive any monetary payment.

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A notable livestock trading company is Stokopromet which has been in business over thirty-five years. The company imports, exports and fattens cattle. This company is a major exporter of lambs to Greece and Italy.

Private livestock owners use the stock markets in each municipality to sell their animals. The two largest stock markets are in Skopje and Titova. Butchers use the municipal slaughter houses to have their animals dressed and quartered for transport to their meat shops.

### Retail Merchandising

The majority of retail food stores are privately managed. Government meat and fish shops operate in the major towns, but their appearance and operations are not up to private sector standards. Food stores sell a variety of fresh products and dry goods.

Local markets (green markets) are active with an abundance of foodstuffs available in the market place. An upscale supermarket is located in Skopje but is the only one in the country. The majority of cheese and meat is purchased in the green markets.

Retail butcher shops visited in the main towns of Macedonia are small. Retail meat shops sell primarily fresh beef, pork and lamb during season. Sausages are also prepared by the butchers and sold in the shop. Most shops have cold storage to hold the meat until sold, and refrigerated display cases were common. In general, retail meat practices are rudimentary and are in need of better hygiene, grades and standards and routine inspection. The number of shops are adequate to keep prices competitive with approximately 200 meat shops in Skopje. The average price for pork was D 200/kg with beef prices slightly higher at D 220/kg. Mutton is slightly over D 100/kg. Sausage sells in the range of D 160/kg.

### Import Marketing

Imports of milk products are high (Table 5). Some dairies purchase powdered milk which they reconstitute into fluid products and yogurt. Some in the industry feel that the powdered milk is not up to Macedonian standards. UHT milk is being imported from Slovenia without customs in exchange for sale of Macedonia wine. One Macedonian dairy produces UHT milk and after paying customs on packaging finds its product at a disadvantage to imported UHT milk, like from Slovenia.

There is a wide variety of processed and smoked meats sold in Macedonia from other former Yugoslavian countries as well as Western Europe. These products are targeted to the higher income consumer with more disposable income; however, these products are also found in many of the small butcher shops.

Frozen chicken parts, legs, wings and breasts are abundant in the local market. Poultry items from the U.S. sell for D 80/kg and are popular items. Poultry is sold by small shop owners in large and small green

markets indicating that the wholesale distribution channels are functioning.

### Export Marketing

Lamb: The sale of young lambs, under 15 kg, to the Greece (10%) and Italian (90%) markets has been an important market for sheep producers. The market windows are narrow with five days before Christmas and 6 to 7 days before Easter. There are six private traders with licenses to export lamb because of the quotas imposed by importing countries. One trader controls 50 percent of the sales. If a producer does not have lambs available with the necessary specifications, then the local market is their only outlet. The young lamb market for the 1996/1997 season is in doubt because of the FMD quarantine on Macedonian livestock/meat exports.

A successful lamb sale was promoted last April, 1996 for the Debar Sheep Producers Association. In collaboration with the extension officer in the MOA, producers sold their lambs to a principle export trader who paid a premium price of D 85 per kg, D 5/kg over the market price. The private trader paid cash at the time of purchase -- very unusual in Macedonia. The success of this pilot project will provide an example to other associations of the benefits when producers cooperate in a marketing activity. The FOB price for carcass lambs was DM 6.5/kg (D 173/kg) without the head.

Leather Goods: An industry with some good prospects is the leather goods industry. The Skopje leather company, now 100 percent privatized, has a history of exporting leather products. The company is able to import hides and skins for further processing and exports finished goods, particularly shoes. The company sells in the Italian market which indicates its quality is up to European standards. The company has a sales office in Germany. There may exist opportunities for other SMEs to participate in this trade in the future.

Dairy Products: The cheeses of Macedonia are of a high quality and favored by the Macedonia consumer. Export opportunities may exist on a limited basis in sheep's milk if niche markets can be developed. The primary outlet is the domestic market.

### Pricing System

Pricing as a function of cost is difficult to determine for the production of meat and milk products. Data is not readily available on costs of production for different types and sizes of operations, e.g. agro-kombinats and private producers. The impression of one dairy processor is that milk prices were too high to compete with imported dairy products. The processor could not develop a fruited yogurt drink that would be price competitive with imported products.

Pricing in the dairy industry is influenced by GOM policy. The GOM has a recommended retail price for pasteurized fluid milk of D 25/lt. The producer receives DM .5/lt or D 13.7/lt for milk with a butterfat of 3.2%. The GOM also pays the producer D 3/lt for milk sold to a processing plant.

In an interview with a dairy producer, he estimated that his cost of feed was estimated at D 300 per cow per day. Estimated yield per cow was 20 lt/day making a cost of D 15/lt. Though the government's recommended price is D 25/lt, the producer is able to sell directly to consumers for D 30/lt for unpasteurized milk because of its better quality.

The price in the terminal market for beef cattle is approximately D 75/kg. On a carcass weight basis this converts to D 150/kg. The average retail price is slightly over D 200/kg. The price margin does not seem excessive.

In an interview with sheep producers, the production cost for lamb was implied to be around D 65/kg. Selling price for lamb is approximately D 80/kg. The price was before the FMD outbreak so prices for live lambs will decline since the domestic market will be the prime market for the next year.

Egg production costs hover around D 4/egg and the current selling price is averaging slightly over D 5. Egg producers are finding themselves in a better profitability this year than in 1995.

More detailed analytical work is needed in developing cost estimates for both production and processing systems. The information would be useful in evaluating marketing programs, investment decisions and product development projects.

#### **IV. CONSTRAINTS IN DEVELOPMENT OF THE LIVESTOCK, DAIRY AND POULTRY SUB-SECTOR**

There are key constraints in the development of the sub-sector. These constraints represent weaknesses which left unresolved will retard the transition to a commercial and viable agricultural marketing system.

##### Lack of Liquidity in the Marketing System

Of greatest concern is the present lack of cash by all participants in the marketing system, except at the final consumer level where cash transactions occur for final food products. The absence for liquidity jeopardizes the ability of private firms to perform regular and consistent business transactions. Producers are unable to receive payment for their products and in turn unable to reinvest in inputs, expand production and make capital improvements.

##### Limited Access to Markets

Agricultural producers have relied on the state agencies or public supported firms to facilitate and clear supplies in the market. Producers have limited knowledge and understanding about demand and supply conditions and therefore unable to properly respond. In some cases, the transition to the private sector has resulted in restricted access because of an increase in monopoly power in a regional market. For example, Bitola dairy plant has effectively restricted small milk processors of yogurt to sell

product in the Bitola market area. Once state controlled market channels have been now been replaced by the tactic of "red lining" a key markets.

#### Limited Number of Viable Wholesalers and Private Traders

There has not been an clear emergence of a significant number of brokers, traders and wholesalers capable of facilitating the market clearing forces in Macedonia. The market agents that operate do not have the necessary entrepreneurial skills and financial capabilities to purchase, store, distribute and market agricultural products. Producers and processors are left without an efficient means to sell their products and continue with their production or processing activities. A clear example is the current surplus inventories of wool in the market.

#### Low Quality Products and Lack of Knowledge About Grades and Standards

Improvements in the marketing system will need to address the lack of acceptable standards and quality required to compete in the domestic market against imports and to export. Short shelf life of product because of poor handling and infrastructure (refrigeration at producer level) leads to high bacterial count in raw products before processing. The end result is that the benefits of value-added processing cannot be reached because the product has lost quality, conformation, texture, and taste. This is particularly true of milk products with recurring high bacterial counts compared to raw milk in Europe and the U.S.

#### High Cost of Production

The inefficiencies in the marketing system for both inputs and outputs create a current condition of high costs of production. For example, the lack of liquidity in receiving payment has forced large egg producers to buy feed in bags and for only short feeding periods of a few weeks even when they have bulk storage.

There seems to be a lack of understanding of production costs and contribution margins as applied to business decision-making. Without these simple concepts it is difficult for businesses to make good decisions. Pricing and marketing strategies are a function of knowing your break-even costs.

#### Lack of Market Information

Producers and private firms lack the necessary market information to make timely decisions about their products. The size of the Macedonia market for certain animal products requires greater information about regional markets, especially in the former Yugoslavia. Producers and private firms are at a competitive disadvantage in both export opportunities and understanding the threats from imports.

## V. PLAN FOR RESOLVING CONSTRAINTS IN THE MARKETING OF LIVESTOCK AND ANIMAL PRODUCTS

### The National Goal

The goal of an agribusiness marketing project is to increase the efficiency in the production, processing and marketing of livestock, meat and dairy products through the introduction of modern technologies, thereby lowering the cost of production, increasing the value of the marketed products resulting in wholesome animal products at a competitive prices.

### National Objectives

The goal of improving the livestock-animal products sub-sector requires a concerted effort at attaining several key national objectives.

- ◆ Increase the production of livestock-animal products by cost effective dissemination of improved production and marketing technologies.
- ◆ Improve the standards and quality of livestock and animal products to compete in both the domestic and export markets.
- ◆ Establish financial channels of credit to implement improved production and marketing systems.
- ◆ Implement economically sound and transparent government policies to create incentives for development of the livestock-animal products sub-sector.

### Key Participant Target Groups in the Livestock-Animal Products Sub-Sector

Four target groups are identified that are important in improving the commercialization of agribusiness in Macedonia.

- ◆ private livestock producers
- ◆ small to medium agribusinesses enterprises
- ◆ large scale agribusiness operation and companies with intensive production and processing systems
- ◆ government officials in the Ministry of Finance, Ministry of Development and Ministry of Agriculture

The sub-sector is differentiated into these four groups, and a general plan of action tailored to each segment.

### Private Livestock Producers

Livestock producers have an important role to play in development of the livestock sub-sector. The key industries would be dairy and sheep. These two industries represent a significant contribution to food production in Macedonia.

The best method for effectively reaching dairy and sheep producers is if they are organized into associations. Producers need to perceive a felt need for collective action to overcome a problem (initially this problem may not be livestock). Associations are effective organizations for the delivery technical packages, establishment of input supply channels, and distribution and marketing of finished products. Livestock producers selling one or two head of livestock have a cost and price disadvantage in marketing their animals. Associations are a way to increase production, get quality of product up and receive a fair price for their products. Associations can also be a mechanism for achieving necessary legislative reform.

### Small and Medium-Scale (SME) Processors and Marketing Agents

Food processors and marketing agents are a critical segment for the broad-scale commercialization of agriculture in Macedonia. The emergence of SMEs will facilitate the marketing system for livestock products. The key production activities are: cheese and yogurt, meat, and wholesalers and food retailers.

SMEs can be encouraged in the areas of: food processing, refrigerated storage, market intermediaries, technical consultants, financial services and market intelligence. These groups can be supported in their development with technical assistance, training and education on handling and sanitation, new product development, inventory management, marketing and management, and the writing of business plans.

### Large-scale Agribusiness Companies

Large-scale companies involved in intensive operations either in production or processing, require special assistance different from SMEs. These companies require technical assistance of a more complex nature and even the opportunity for foreign direct investment (FDI). The companies would be in the following activity groups: swine, poultry for eggs, poultry for meat, large-scale commercial slaughter and dairy processing plants, feed mills for livestock, importation of meat and dairy products. Important participants could be newly privatized, large-scale agro-kombinats that have a potential as a private company.

The issue of confidentiality precludes working in groups as could be done with SMEs and producer associations. One-on-one consultations will be required that allow for market research data to be included into the operational plan.

## Government Policy Makers

Government policy makers play an important role in development of the livestock and animal products sub-sector. Presently government policies on recommended prices, establishment of lending agencies, formation of associations, import and export regulations, subsidies, and licenses are only a few of the issues distorting the development of a commercial and efficient livestock sub-sector.

Government officials need the analytical skills to conduct benefit-cost (B/C) analysis of their policies not only on the livestock sub-sector, but the broader agricultural sector and the spillover effects to the non-agricultural sector. Disincentives and distortions in the marketing system from policies need to be clearly understood and articulated to policy makers in the key ministries. Licenses and regulations that prevent free entry of private entrepreneurs, for example veterinarians and allied animal health professionals, are detrimental to the development of the sub-sector but also to the broader national populace. The inability of producers to organize into associations for economic benefit is a major hurdle for improving the livestock-animal products sub-sector.

## Tools to Achieve National Objectives for Each Target Segment

Four types of assistance are proposed to resolve the agricultural marketing constraints in the livestock-animal products sub-sector:

- ♦ technical assistance to private farmers, emerging new agribusinesses and established enterprises;
- ♦ education and training in quality control, marketing management;
- ♦ financial assistance for new investment and expansion of existing agribusiness companies; and
- ♦ policy analysis on governmental actions to provide incentives to private sector groups and removal of rigidities and disincentives in the marketing system.

Technical Assistance: Key areas for technical assistance in the livestock-animal products sub-sector would be to the dairy, sheep, swine, and poultry industries. These industries have received some TA, and it has been successful. For example, VOCA placed a feed specialist in a layer operation and was able to improve ration formulation and saved the company \$ 10,000 per year in feed costs. Short term technical assistance does work, and it can have an impressive return on U.S. donor funds.

The objective of TA will be to identify key associations and firms involved in both production and marketing that can take advantage of the new information. Key areas which have opportunities for success are to:

- Establish small and medium-scale cheese plants for both private individuals as well as for groups of producers who face limited

access for their fluid product. This is for both dairy and sheep producers.

- Provide technical assistance to sheep producers on utilization of their wool.
- Provide technical assistance to SME meat processors to improve product formulation, smoking technology, product development, sanitation and quality control, and market development.
- Provide technical assistance to large commercial operations needing more sophisticated business and marketing expertise.

Regular technical assistance needs to be placed closer to producers and companies with the creation of regional business centers for assisting companies and the development of local consultant capabilities, e.g. feed nutritionist, private veterinarians and business consultant. Target clients need ready access to business consultants.

Education and Training: There are two key areas where education and training would be valuable: first, the creation and management of group associations; and second, the establishment of market facilitative institutions to provide support, such as market intelligence.

Associations represent a viable organizational structure for producers and processors to address key marketing constraints. Producer associations like the Debar Sheep Producers Association create opportunities for countervailing marketing power that enhance prices, and open access to closed markets. These associations allow producers to retain their individual status yet take advantage of the power of the group in purchasing inputs and marketing their outputs.

The concept of proactive marketing is new to most producers, processors, wholesalers and retailers. The transition to a private sector economy requires new marketing methods by all parties. The best avenue is to show key leaders how an efficient marketing system is run and this can be effectively done in education tours to other countries, e.g. Western Europe and the United States.

Important in the training is a focus on business practices which includes management and some simple business accounting. Cost of production, break-even analysis, investment decision-making would be the minimum needed for a business to implement improved marketing practices.

Facilitate Access to Credit: There are efforts being undertaken to create available credit for agribusinesses. Credit limitations are evident in rural areas where producers of primary commodities have difficulty in obtaining operating loans or money for capital investment. TA, training and education programs will only go so far without funding to implement better input and output marketing programs. Constructing simple yet effective credit channels is a significant component of reaching the national objectives for any new agricultural marketing project.

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**Policy Analysis:** Techniques, such as benefit/cost (B/C) analysis, producer and consumer surplus estimates (PSE,CSE), and domestic resource costs (DRC), are necessary to evaluate policy instruments impacting the livestock-animal products sub-sector. Workshops for government officials and agribusiness associations on measuring the impacts of government policies on agriculture are important.

Besides the measurement of policy impacts, it will be necessary to also implement policies which can create incentives for targeted groups in the sub-sector to expand. These policies will be in allied fields such as field grain milling and importation of critical feedstuffs. The ability to increase the productivity in the meat and dairy industries needs to be part of GOM's policy agenda. The GOM could look at using tariffs rather than subsidies to stimulate the livestock-animal products sub-sector. The Ministry of Economy is supporting SME development, and this project will need to link with that effort.

Policy analysis needs to address the lack of research and business data on key agribusiness industries. For example, profitability and liquidity ratios for the dairy processing industry would be useful in guiding policy decisions. Comparative advantage analysis using domestic resource cost (DRC) estimates would be useful in prioritizing government initiatives. For example, is milk production competitive in Macedonia compared to other countries? Policy analysis needs to address why livestock pharmaceuticals are four times greater than the world price which has led to a state of lower quality animal health care in Macedonia.

Table 1. Pasture, Meadows, and Feed Crops for the Livestock Sub-sector

Type	Supply Tons	Demand Tons	Feed Surplus/Deficit
Clover	7,286		
Alfalfa	95,783		
Motley Hay	7,131		
Pease for Fodder	4,763		
Maize for Fodder	43,152		
Sugar beet Fodder	3,671		
Meadows	84,616		
Pastures	241,459		
<b>Supply Available</b>	<b>487,861</b>		
<b>Cattle</b>			
220,000 A.U.		803,000	
<b>Sheep</b>			
377762 A.U.		172,000	
<b>Demand for Feed</b>		<b>975,000</b>	
<b>Deficit Feed Balance</b>			<b>-487,139</b>
Before Grains			

Production of Feed Grains and Other Agricultural By-products for Livestock Feed

Year	Wheat Prod.	Yield Per Ha	Corn Prod.	Yield Per Ha	Barley Prod.	Yield Per Ha	Sugarbeet Prod.	Yield Per Ha
1990	231,392	2,052	79,500	1.9	74,135	1.5	106,420	26,592
1991	340,747	3,021	135,000	3.2	163,483	3	81,722	36,961
1992	299,522	2,675	104,000	2.9	127,349	2.3	61,439	25,815
1993	249,789	2,135	101,000	2.3	103,455	1.8	55,102	24,392
1994	336,133	2,754	133,000	3.1	149,424	2.5	54,103	33,479

a.u. = animal unit, 400 kg mature body weight for cow and 50 kg for mature ewe -- 5 sheep equal to 1 cow a.u.

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Table 2. Livestock and Meat Production in Macedonia, 1985 - 1994

Year	Cattle hd	Beef mt	Pigs hd	Pork mt	Sheep hd	Sheepmeat mt	Wool mt	Poultry no	Pou. Meat mt	Eggs no (mil)
1985	270,000	11,000	147,000	12,000	2,320,000	12,000	2,500		7,800	542
1986	264,000	10,700	161,000	10,700	2,368,000	12,000	2,500		6,700	603
1987	287,000	10,500	186,685	10,900	2,503,206	12,400	2,600	4,956,007	8,500	577
1988	290,522	9,600	156,833	11,700	2,377,789	15,300	2,700	4,426,023	7,600	548
1989	287,630	10,800	161,207	10,262	2,495,510	11,400	2,913	4,450,326	5,818	552
1990	287,174	9,500	178,537	9,731	2,297,115	14,400	2,597	5,728,981	2,297	587
1991	282,349	8,200	170,975	9,915	2,250,549	13,100	2,563	4,562,497	2,419	574
1992	284,919	7,549	173,006	10,443	2,351,408	12,394	2,642	4,297,350	2,300	516
1993	280,324	8,416	184,920	9,634	2,458,684	12,882	2,840	4,392,721	1,871	513
1994	281,336	7,545	171,571	9,664	2,466,099	13,050	3,147	4,685,021	2,181	510

Table 3. Milk Production in Macedonia, 1985 - 1994

	Cow Milk ltr.	Milk/Cow ltr.	Butter mt	Sheep Milk ltr.	Milk/ewe ltr.
1985	99,000	1,332	14	53,000	34
1986	102,000	1,344	13	55,000	34
1987	114,000	1,372	25	65,000	38
1988	114,000	1,350	25	58,000	36
1989	116,951	1,357	107	62,403	37
1990	123,154	1,358	21	56,792	36
1991	119,194	1,329	15	60,285	40
1992	117,443	1,307		58,347	37
1993	118,398	1,325		59,632	34
1994	115,791	1,283		61,388	37

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**Table 4. Population in Macedonia, 1985 - 1994**

	Number
1985	1,969,000
1986	1,982,000
1987	1,995,000
1988	2,007,000
1989	2,018,000
1990	2,028,000
1991	2,039,000
1992	2,056,000
1993	2,066,000
1994	2,075,000

**Table 5. Food Balance Sheet for Key Livestock and Dairy Products, 1994**

Item	Per Capita Consumed kg/cap	Total Consumed kg	Domestic Production kg	Surplus or (deficit)	Per Capita Difference	Qty Imports mt	Value of Imports US\$000	Qty Exports mt	Value of Exports US\$000
beef	7.4	15,355,000	7,545,000	-7,810,000	-3.8			1,745	6,321
pork	8.3	17,222,500	9,664,000	-7,558,500	-3.6	3,048			
mutton/lamb	2.5	5,187,500	13,050,000	7,862,500	3.8				
poultry	8.0	16,600,000	4,685,021	-11,914,979	-5.7	12,083	11,757		
Other Meat	1.3	2,697,500	1,347,000	-1,350,500	-0.7				
Proc. Meat	3.6	7,470,000				7,339	17,497		
Milk (ltr.)	68.8	142,760,000	115,791,000	-26,969,000	-13.0	12,672	5,963		
Sour Cream	10.4	21,580,000							
Cheese	8.1	16,807,500				5,211	8,963		
Other Dairy	0.2	415,000							
Eggs (no.)	161.0	334,075,000	510,000,000	175,925,000	84.8				
All Meat and Meat Preparations						66,218	7,863		

Table 6. Prices for Key Products, 1994 and 1996 and Food Expenditure

Item	Price Dn/kg	Price - 1996	Percent %
Beef	162	200 - 220	
pork w. bone	205	200	
mutton	85	100	
lamb	173		
poultry		80	
egg (D/pc)	5.75	5	
cow milk (D/lt)	25	25	
cheese	202	250	
Butter (250 g.)	260		
Food Exp/Tot. Exp			47
Meat/All Food			21
Milk & Dairy & Eggs as % of all food			19

**FRUITS AND VEGETABLES SUB-SECTOR REPORT**  
by Albert R. Green

The former Yugoslavia Republic of Macedonia is land-locked country on the Balkan Peninsula. A population of about 2 million people. Agrarian linkage are strong and help to mold the national character in a population with 45 percent living in rural areas.

In 1994 agriculture was the only sector to grow in an uneasy political environment with weather and marketing restraints. Laws have been enacted to privatize and restructure the social-owned, inefficient enterprises with little or no financing available.

Macedonia, prior to the demise of the Former Yugoslavia State, and the two embargoes had experience times of plenty, compared to the trying economic times of today. Everyone was employed, food was plentiful. Markets were established and unsold product was unheard of.

Most seem to be in a state of economy similar to their neighbors, and there was not this great expansion between the rich and poor. The general feelings was that most all were in similar circumstances. The agro-kombinats' processing facilities were an unending source for all your agricultural products.

Then came the embargoes!! Changing times were apparent. All that they knew and understood of the marketing of Macedonia agri-products came to a standstill. Products could not be sold. Markets closed. No place to go. Privations of Socialist owned or controlled Associations, Co-operatives were on the fringes of being converted from Agri-Kominants to private control companies. These were changing times. Individuals were used to being told what to plant, where to market, prices were set. Sometimes they were given vouchers for seed, fertilizers, and chemicals if available.

Decisions were having to be made by an economy of which they had no experience what so ever. They were unprepared for these grave undertakings. The Former Socialist System had now created a great "CHALLENGE" for which no preparations were made.

Many of the private farms were being operated by part time workers. Now Public Owned enterprises were being forced to close. Unemployment has risen and now many farm households had members with no jobs. And little or no market for those products grown in the past with Socialist success. What had been working, due to the embargoes was now becoming a disaster.

Macedonia farmers had a tradition of exceeding their own domestic demands for agricultural products, and now their foreign markets had dried up, due to outside influence. And what to do has become a burden for all of Macedonia to bear. Due to all the changes that must be made in Government, most Macedonian farmers feel they are being abandoned by the former Government that took so well of them in the past.

## The New Roads to Macedonia Markets

Some of the main Constraints for Macedonia to overcome prior to proceeding forward in Free Economic Society may be listed below.

1. Privatization.
2. Banking and how it relates to agriculture.
3. After changes in government, what part should it play in the agricultural system.
4. Markets, who and where are they?
5. When and where are the export windows for Macedonian agricultural products?
6. Export salespersons and brokers, who are they?
7. The preparation of agricultural products for exportation.
8. Transportation, where, when and how.
9. Value added products, now or later?

### Privatization

Privatization began in 1989 for Macedonia, following passage of a privatization law, called the " MARKOVICH PROGRAM", by the Yugoslav Parliament. A new privatization law was introduced in December 1991, following independence, and was enacted by Parliament in August 1993. This law which excludes agricultural production and strategic enterprises, differs from other Eastern European Privatization laws in two key respects: Macedonia has chosen a managed, self-privatization process instead of mass privatization through vouchers, and a minimum of 51% ownership must be purchased by a single entity, to clearly establish management responsibility for the privatized company. All companies with social capital are required to submit a privatization plan to the agency. Small and medium size companies must submit plans within one year: large companies, within two years. The agency will review and approve the proposed plans. The law excludes from this process 388 "STRATEGIC ENTERPRISES", public utilities, natural monopolies, and agriculture.

Small firms can be privatized through an employee-buy out, direct sale, or auction. Medium firms also have the option of a management buy-out or debt/equity swap (basically a bankruptcy option). Larger firms have the additional options of lease/purchase, liquidation, or bankruptcy/reorganization. Workers in a firm being privatized are entitled to a discount on purchase of the stock, the level of the discount depending on the years of service. Investors may also purchase a large company by putting 10% down and paying the remainder (for a minimum total investment of 51%) without interest over the next five years.

This privatization agency indicates that some 1,468 companies will be privatized under the new law: 100 large, 299 medium-size, and 1,069 small. These companies comprise 50% of the total employees in the country.

As the privatization process moves forward, one inevitable result will be the reduction in employment level in privatized companies, as the new owners focus their attention on the bottom line, or profitability. The

current economic situation, driven by loss of markets to the north and south, have already resulted in a reduction in the employed population from 560,000 three years ago to 398,00 today. It is further estimated that at least a fourth of those currently employed in these companies are surplus, and are on "technical leave", (not working but receiving 70-80% of pay). These employees will eventually join the approximate 175,000 Macedonians already unemployed, and the demand for social programs will rise.

At the same time, however the current economic deterioration is reducing government revenue and therefore eroding the budget base for the these social programs. Although the privatization law call for 15% of sales payments to be allocated to the social support systems, the pace of privatization is not generating sufficient funds, and not quickly enough to provide any significant level of relief. Government payments for pensions, unemployment, and welfare are already delayed by several months because of budget constraints. It is estimated that the cost of meeting the minimum essential food needs for a family of four was 7,198 denars (\$178.00) in April of 1994: this excludes housing, utilities, transportation, clothing, and other non-food items. The actual average for the same month was 7,600 denars (\$166.00).

While the system for administering social support programs are well organized and fairly efficient, the rapid increases in demand on a system which is essentially manual in operation threatens the capacity of the system to respond. And there are estimates which indicate that the population eligible for, but not currently registered in, the system is quite large. These people are currently receiving no government support at all. The potential for social and political de-stabilization is therefore great.

Macedonia is primarily an agricultural society, with 45% of the population classified as "rural". Agricultural production has been suffering in Macedonia. In 1993 it was about 22% below the previous year, largely due to the effects of prolonged drought. However, despite this drop, there were many surplus fruit and vegetables due to the loss of the markets to the north and south. With the recent decline in the industrial sector, agriculture is playing a growing role in the economy as many of those left unemployed due to the industrial restructuring and privatization return to rural areas to find work. Prior to the independence, Macedonia was primarily a producer of bulk agricultural commodities, with most processing taking place in other regions of the former Yugoslav Federation. Principal agricultural products include: wheat, tomatoes, corn, peppers, sugar beets, tobacco, sunflower, fruits and early vegetables. And historically 70-80% of fruits and vegetables grown in Macedonia were exported as raw products, and then a significant portion was re-imported as finished products. Wine, and meat, especially lamb are also important exports.

#### Banking and How it Relates to Agriculture.

National finance as a government responsibility is a relative new aspect of governing for Macedonia. Under the Former Yugoslavia, this responsibility was previously handled by the Federal Government in Belgrade. Macedonia

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has had to create a government structure to deal with such issues as fiscal policy, monetary policy, public investment planning, budget taxation and revenues, and bank supervision.

With the introduction of a new currency, the denar, and implementation of a stabilization program which included strict control on exchange of foreign currencies, Macedonia was able to reign in inflation and stabilize the economy. Access to loans, and credits from international financial institutions is providing some relief, but also requires implementation of stabilization measures which will generate their own set of social and economic problems.

Laws have been enacted by the Parliament on banks and saving houses, foreign trade, concessions, financial operations, foreign credit relations, foreign investments, bookkeeping, foreign exchange operations, securities, obtaining foreign financing pension and insurance, the central bank and currency. Tax laws enacted include: customs, income and profit taxes, property taxes, taxes on consumable goods and services, and the organization of the public revenue office.

Macedonia has 25 public and private banks that are largely insolvent and in deterioration. Many are owned by one or a few state-owned enterprises which also borrow funds from them. They were established to reduce financing cost, obtain direct access to National Bank credit facilities, and avoid having enterprise account funds frozen if a loan is placed in non-performing status. The main problem with this type of bank is that when the owners of the bank become financially weak, they may continue to loan out reserves long after a normal loan would have been foreclosed in a banking relationship. These financially weak owners can sometimes cause both the bank and the loan receiver to become bankrupt.

Banks are outside of the privatization law, but socially and state owned banks may be privatized several ways. Many of the social enterprises are in the process of privatization.

Macedonian agriculture needs an effective credit system for providing continual source of credit and financial services to their own business organizations rural and otherwise, as well as to the individual farm entity.

As much as 85-90 per cent of individual farmers have received credit from relatives, friends, and other informal money lenders. In Macedonia, these informal lending services provide almost 100 per cent of the credit to these private agricultural users from cash held in households.

The present Macedonian banking system does not lend to this agricultural economic sector except in limited indirect ways, through social enterprises and agri-kombinats. Due to the difficulties of these enterprises, the door has almost closed to them.

Macedonian agricultural producers are unable to take advantage of the largest element of capital via their land. Even though you can obtain a

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title and registration of your land, and can even sell it, lenders have not normally taken land as a source of collateral, but this is very slowly changing.

### After Changes in Government, What Part Should it Play in the New Agricultural System?

Many believe that the less government intervention in agriculture, then the better off you are. Subsidies and tariffs are subjects that should be addressed in any economic driven society. The World Bank would like for all subsidies in Macedonia to cease. This may be a good thing, but one should address exactly what is a subsidy? Give away programs very seldom ever solve the basic problems, and usually are not sustaining when the relief stops. Therefor any relief or substance given should address the benefit derived as well as the sustaining of the project. Many belief that efforts should be centered around services rather than dollars.

These services may be those of which the very few of the masses can afford to take on themselves and the most received benefits. An example of this type may be soils labs for testing soil to determine the optimum amount of fertilizer needed for certain crops, rather that to just apply a certain amount because someone told you to use that amount. Another may be provide free testing of livestock for diseases. Others may be in the area of increase free services performed by the extension agents, in advising the agricultural community of their problems and how to solve them. None of these are in direct competition with the local community.

Tariffs are something unheard of former times for the surrounding countries. Before embargoes, most all of their oversupply of agricultural products flowed freely from one area to another. Supply met demand and all were happy. In order for these markets to expand perhaps Governments should work towards a yearly reduction on both sides of the borders of the tariffs so that the flow of products can reach the greatest demands. Only through a free market systems can all producers have the same markets opportunities for all products. Protectionist beliefs by some commodities may be good in the reformations of ones own country, but only for short period of time. This allows the individuals the opportunity of time to become more productive and hopefully to be able to better compete on an open market system.

### Markets - Who and Where are They?

The European market is by far the largest in the region, and one of the world's largest, importing \$17.9 billion in horticultural products in 1993. Of this total Latin America had the largest regional share at \$8.3 billion. Eastern Europe as well as Macedonia contributed some to this market.

The competitiveness of Latin American produce is explained in part by seasonal factors. Southern hemisphere produce coming on to the market in winter when fresh locally produced products are non-existent. The EU has very high seasonal duties for fresh produce competing within the normal northern hemisphere seasons. Peak season tariff range from 22 % for grapes

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to 18% for tomatoes, 17% for cauliflower, 16% for strawberries, and 14% for apples. Processed fruit and vegetables tariffs are even higher, ranging from 18 % for frozen fruit and 20 % for canned fruit and vegetable products. Addition of sugar to a canned product can result in further significant levies imposed under the "common sugar regime".

The EU applies a system of ad valorem "Common Customs Tariffs" to third world country imports. These tariffs may vary from country to country and on a seasonal basis.

In addition to the "Common Customs Tariff", the Community operates a system of "reference prices" and additional "levies" on an extensive list of "sensitive products" during periods of peak local supply. The list of products which is covered under the "reference price" and levy system are"

FRUITS	PERIODS COVERED	
APPLES	JULY 1	JUNE 30
APRICOTS	JUNE 1	JULY 31
TABLE GRAPES	JULY 21	NOV. 30
CHERRIES	MAY 1	AUG. 10
PLUMS GROUP 1	JUNE 11	SEPT 30
GROUP 2	AUG. 1	SEPT.30
PEACHES	JUNE 11	SEPT.30
CITRUS	VARIOUS	

VEGETABLES	PERIODS COVERED	
TOMATOES	APRIL 1	DEC. 20
CUCUMBERS	FEB. 11	NOV. 10
COURGETTES (SQUASH)	APRIL 21	SEPT. 30
AUBERGINES (EGG PLANTS)	APRIL 1	OCT. 31
ENDIVE	NOV. 15	MARCH 31
CABBAGE	NOV. 1	MAY 31
ARTICHOKES	NOV. 1	JUNE 30

The "reference price" system that was in effect through July 1995 assured that little or no produce can enter the Community at prices lower than the prevailing "reference price" during its period of application. If the entry price for at least 30 % of imports from a given country were 0.6 ECU/100kg. or more below the level of the reference price for a given period, the commission imposed a levy on subsequent imports of the product. This levy was equivalent to the difference between the reference price and the average of the last two entry prices. "Third" country suppliers gained no advantage from trying to supply the Community at low prices. In practice then they tended to respect the price or withhold supplies to avoid paying countervailing charges.

Macedonia is unique in being a major producer of apricots, although significant quantities are also produced in Bulgaria. While apples are produced throughout the region, the south is favored in the production of soft fruits: plums, pears and peaches. See table below: The production

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of peaches, apricots and pears have been hurt severely in recent years by "fire blight" disease. Even in the production of apples which have, by far, the largest share of domestic and export markets. Macedonia's sub-mediterranean climate can give it certain advantages in seasonal marketings and varieties produce.

**MACEDONIAN EXPORT OF PRINCIPAL FRUITS 1993, 1994**

FRUIT	1993		1994	
	TONS	\$ x 000	TONS	\$ x 000
APPLES	33,274	4,828	26,657	7,000
OTHER FRUIT & GRAPES	6,959	1,413	7,843	1,601
APRICOTS	705	284	372	167
PEARS	284	55	241	89
PEACHES	141	50	130	65
PLUMS	45	15	30	13

Macedonian apple production has gone from a low of 48,400 tons in 1993 to a peak of 93,300 tons in 1989. Production in 1992 and 1993 at 87,600 and 71,700 tons have returned to near their pre independence levels. Apple productions is nearly four times that of plums the next largest fruit produced and totals slightly more that all other fruits combines excluding grapes.

Most apples are for domestic production, somewhat less than half of production are being exported. The most significant problem faced by producers and exporters alike is the limited availability of Ultra-low Oxygen (ULO) storage. This make it more difficult to keep fruits beyond the harvest season and opens the market to incursion by foreign fruits while limiting the Macedonian exports to seasonally peak periods when prices are lower.

Slightly more than one-third of 1994 apple exports, 9,929 mt went to Bulgaria while among fruit exports only small quantities of "other fruit" went to the EU market, 376 tons to France and 87 tons to Germany. Exports to Bulgaria may indeed represent transshipment resulting from the embargo. In 1994 Macedonia exported a record quantity of fruits & vegetables juice to the United Stated, valued at \$1.749 million. \$1.149 million in 1993. Exports of fruit and vegetable juices to the United States fell sharply (-68%) in the first eight months of 1995.

Macedonia exported limited quantities of tomatoes and cucumbers to Germany and France in 1993 and 1994 while importing somewhat larger quantities of other vegetables through Bulgaria. The lifting of the embargo by Greece and the end of the war in Bosnia-Herzegovnia may provide an opportunity to revive the Macedonian vegetable trade.

Macedonia was traditionally a raw product producer, shipping to other jointing countries for processing. Some of the finish product may or may not return for consumption or use, depending upon that commodity.

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Since the embargoes were put in place, this changed all the markets routes that Macedonia had long enjoyed. Now they were faced with the ever increasing problem of what, and where to market their agriculture products.

Some of the former market will slowly become a source of distribution, but that will take time. Today many small farmers may put their fruits and or vegetables into the back of their car, truck or tractor, and proceed to the largest town close to them. Once there, they may sit beside the road and or go to the local green market and sell their product. They have no knowledge, as to what that product may be bringing \$ in any area other than the one they are in. The present system is only limited by ones own imagination.

As one's commodities increase and the present system fails to meet your demands, you have to be prepared to seek better ways.

#### Wholesale Market, Kvatashki Pazar, Skopje

The Kvatashki Pazar whole-sale market located in Skopje, is an open type market with very limited permanent enclosed or overhead roof protection. Anyone driving into the market is charged a fee. There appears to be around 250-300 stall areas for use. On the opposite end from the entrance there are several older trucks that are no longer useable as transportation and appear to serve no other purpose other than to store product until the next sale day. They appear to be in many stages of deterioration. These tend to give the market a less than desirable appearance.

Most products is sold by the container only, ie, bags carton. box can or wooden container. Sometimes the supply and demand tend to make them change their mind on making this decision. Several times I wanted to make a small purchase of a certain and they would not sell it to me that way, yet, in the back areas where customers don't always seem to make it, you could purchase these items in lesser amounts.

There were bananas from Ecuador, and other South American Countries, Lemons from Argentina, Pineapples and Kiwi from Chile, Oranges from Turkey and South African Countries, Garlic and nuts from Iran, dried Figs, apricots, plums, dates from Turkey, as well as dried chick peas, walnuts, ground nuts, chestnuts, sunflower and pumpkin seeds, that I guessed came from Macedonia.

There were locally grown products there in great numbers, which included: red, yellow, green peppers, hot yellow and red peppers, regular as well as pickling cucumbers, quince, red tomatoes, green tomatoes for pickling, several different varieties of red and green grapes, three different color and varieties of melons, several different colors and varieties of potatoes, onions dried, red and yellow including green ones, also-leeks, cauliflower, broccoli, nappa, and a loose leaf variety of ice berg lettuce, parsley, carrots large and small.

Also including in the market were stalls for honey, and many other products not belonging to the fruit and vegetable family, but needed and can be used

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by the whole-sale institutions. We were told the market opened early in the morning and close around 12:00 or noon each day of operation. Everyone we talked to or had business with was very courteous, and nice.

### Tanix Supermarket, Skopje

It was quite a change to visit the new Tanix supermarket compared to the normal size market you encounter in Skopje. I have been told there are three of these new supermarkets in Skopje, and the one we visited was in the Kisele Voda area.

The very first thing you noticed immediately upon entering was the smell of fresh bread. Very good! This store had three floors and you entered on the middle or 2nd. floor. All floors had very wide isles, clean as a whistle. Products were stacked on shelves very neat and well organized. Each floor was so situated to have like type products on each floor. Their product line appeared to have most anything one would need, including a lawn mower on the third floor. Many utensils were imported, but appeared to have many Macedonian products available. Prices were either posted on each commodity or on the shelf below the product.

There was a separate area for meats and a large supply was available. Also an area designated for school supplies should have been very popular.

As we were waiting in line, someone made the observation, that there should be more cashiers than just one, and at that moment, another appeared out of nowhere and business continued. As we were leaving I noticed in the back corner of the floor was a play area for children.

Compared to the normal marketing store for Macedonia, this one or type will be very popular and I would think there will be more of this European or American type in Macedonia very shortly.

### Visit to a Private Apple Grower

Mr. Bosko Radevski and his son, Mr. Stevce Radevski and their families, in the Village of Carev Dvor, in the city of Resen, Macedonia

They presently grow 4 hectares of apples on 10 different plots. The varieties presently grown are: Ida Red, Golden @ Red Delicious, Iona Gold, Crimson Red and a Japanese variety called Mutzu. Mr. Radevski indicates there are over 2,700 hectares of apples presently being grown in the Resin area comprising over 2,500 individual growers.

Stevce Radevski, Mr. Bosko Radevski's son was chosen "THE APPLE GROWER OF THE YEAR", two times of which that is all he is eligible to participate in as far as competition is concerned. The two Radevski's have been accused of being in love with their apple trees.

Several years back Mr. Radevski was in charge of the local agri-kominants for apples. He indicates there were good times, when prices were high, exports were good, and surpluses were unheard of.

At one time they exported a lot of apples to Greece and Italy. Even at times when the markets were closed, he would ship the product through Albania into Greece. Because at times these were illegal entries, they would store the apples and later re-package them as products from Greece. He was met at the borders and carried by car or helicopter to these meetings.

Many years ago when he was in charge of the local agri-kominants he received and planted the Granny Smith apple variety. But over the years the interest became less and less and there was some questions as to the issue if this was real stock of the Granny Smith apples. Later after he had retired, this variety was replaced, by something else. After looking back he wishes that he had tried harder to influence these decisions, so that this variety would still be here growing today.

They are presently growing a Japanese variety called " Matzu ". They only have a few trees now, but the prospects look good in the future, and are also looking at more Japanese root-stock varieties, for future marketing prospects.

They are presently building a storage area for their apples, but funds seem to be a major problem. With the controlled atmosphere rooms available you are able to store you apples for a more favorable pricing situation. This would be a major marketing tool for the apple industry.

Meeting with newly formed groups of agricultural producers in the Shtip and Kumanavo are

In meeting with both of these groups we were accompanied by staff from the local Catholic Relief Services, or CRS, by Mr. Igor Nakevski.

We met with about 20 men from the Shtip area. They were from all facets of agriculture form one hectare to 25 hectare. Their occupation ranged from Having commercial transportation available, to local Government representative, to raising rabbits, sheep, cows for dairy, maintenance of equipment, to raising pigs, rice, grapes, former employed by textile industry who was now bankrupt, sour cherries, retired but with 3 cows, greenhouses, agricultural Engineer, with sheep, one cow from Israel, and wanted special cows form Holland for dairy. The average hectare was about 2-3 range.

Everyone wanted money, seeds, chemicals all the inputs that make up farming. They had many questions as what to grow, come look at farm and tell me what to do? They all seemed eager for knowledge. We explained about Co-op in the USA and their part in agricultural stream of products. Everyone knows and understands that the word Co-op does not have a good meaning. Anytime anyone wants a group to form in agriculture, this negative feeling come out, so it is a long and slow process. I feel that as these group become more successful, then others will join. This group in Shtip was first started in June 1996. They have about 50 members, currently. They seem to realize their benefits, but without money or financial assistance, then even those benefits seem small.

Whereas the group in Kumanovo, is a very large group comprising 6 sub-groups, with an expert leading each of these subs. They have according to the group leader, between 5-6,000 members. They seem to have a larger average land base, than any group that we visited. They had all the same type problems as the others. As in all groups we discussed marketing and how it relates to them, and having little knowledge about how to pursue this international dream. They need help in developing broker types or international salesmen, who have the general knowledge, as to what is needed to be successful. All about packaging, quality control, transportation.

In both of these groups it seemed there was an important part being played by what we called Extension agents. They were trying to pull or hold these groups together. They had both traveled abroad, and had some knowledge of the end product.

**GRAINS SUBSECTOR REPORT**  
by Roe Borsdorf

ANNEX VIII

The grains sector is characterized by five crops: wheat, corn, barley, rye, oats, and rice. The predominant feature of this subsector is the large production and marketing levels of wheat, followed by lower volumes of barley and corn. Rye, oats, and rice can be classified as minor grains in the Macadonian agriculture system.

Production

Production is included in this subsector report because there is an indication of productivity problems at producer level. Productivity problems affect marketable surpluses as well as cost structures in the market place.

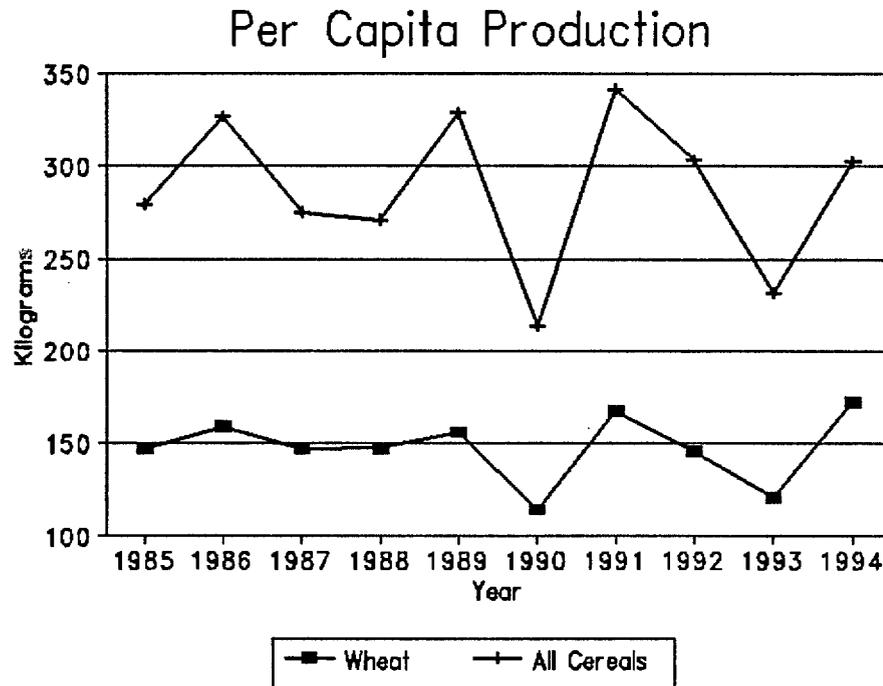
The production of grains, harvested land area, and yields over the past 10 years are as follows.

Grain Production-----							
Year	Wheat mt	Corn mt	Rye mt	Barley mt	Oats mt	Rice* mt	Total mt
1985	288,455	79,194	18,136	123,258	4,685	36,188	549,916
1986	314,655	123,627	19,271	137,039	5,063	47,626	647,281
1987	292,326	95,419	16,825	90,642	4,189	49,117	548,518
1988	295,397	75,956	18,269	119,223	4,498	30,508	543,851
1989	313,752	136,700	17,961	160,165	7,029	27,475	663,082
1990	231,382	79,543	16,335	74,155	3,876	27,587	432,878
1991	340,747	134,958	14,814	163,483	4,920	37,501	696,423
1992	299,522	130,259	17,784	127,349	5,361	42,688	622,963
1993	249,789	101,063	11,414	103,455	2,668	9,455	477,844
1994	356,133	133,211	15,475	109,424	4,652	8,713	627,608

Harvested Area-----							
Year	Wheat ha	Corn ha	Rye ha	Barley ha	Oats ha	Rice ha	Total ha
1985	111,789	42,343	14,220	53,988	5,086	9,081	236,507
1986	112,720	41,452	13,192	52,933	4,972	9,325	234,594
1987	118,751	41,535	13,285	44,035	4,694	9,675	231,975
1988	122,640	45,734	13,277	50,048	4,771	8,636	245,106
1989	103,031	43,932	10,983	56,294	5,265	6,056	225,561
1990	112,750	41,181	13,636	50,687	4,609	8,880	231,743
1991	112,783	42,169	11,325	54,429	4,531	8,692	233,929
1992	111,961	43,772	10,884	55,421	4,211	8,465	234,714
1993	116,987	44,693	10,717	56,424	3,282	5,143	237,246
1994	122,031	42,719	10,286	59,697	3,710	1,731	240,174

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Year	Wheat kg/ha	Corn kg/ha	Rye kg/ha	Barley kg/ha	Oats kg/ha	Rice kg/ha	Total kg/ha
1985	2,580	1,870	1,275	2,283	921	3,985	2,325
1986	2,791	2,982	1,461	2,589	1,018	5,107	2,759
1987	2,462	2,297	1,266	2,058	892	5,077	2,365
1988	2,409	1,661	1,376	2,382	943	3,533	2,219
1989	3,045	3,112	1,635	2,845	1,335	4,537	2,940
1990	2,052	1,932	1,198	1,463	841	3,107	1,868
1991	3,021	3,200	1,308	3,004	1,086	4,314	2,977
1992	2,675	2,976	1,634	2,298	1,273	5,043	2,654
1993	2,135	2,261	1,065	1,834	813	1,838	2,014
1994	2,918	3,118	1,504	1,833	1,254	5,034	2,613



The grains sector has produced at a level of 550,000 to 650,000 mt annually with land area being in the range of 230,000 to 250,000 ha annually. The

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private sector accounts for 60% of the production of grains, with SOAEs producing the balance.

The attributes that characterize the grains production sector is the (1) flat trend in total grain production with great volatility, (2) flat trend in total grain harvested area within an extremely narrow range from year-to-year, and (3) total grain yields although volatile having a definite flat trend. These no-growth attributes are further emphasized by the above figure on per capita production of total grains and wheat. This figure, while illustrating volatility, further illustrates the slight downward movement in the trend of per capita production of total grains as well as wheat.

**Wheat** -- Production of wheat is normally around 300,000 mt per year amounting to slightly over 1/2 of total grains production with land utilization of slightly less than 50% of total grain cropping area. The production of wheat by small private sector farmers has ranged from 50% in the late 1980s to nearly 60% of total production in the last three years.

Yields, based on statistical data, average 2,600 kg per ha which is an equivalent of 38 bu per acre. Available statistical information, when categorized by private and SOAE sector results in yields being over 20% higher in the SOAE sector. However, the samples taken by the LTC study result in private sector yields being 20% higher than the SOAE sector. While, obviously, there is a great deal of bias in both sets of numbers, the average of 2,600 Kg per ha is most likely a sound estimate of national yield as it can be related to total wheat production and utilization. This leaves the potential for increased productivity of at least 25% in potential yield capability. Further, the overall trend in wheat yields is flat.

**Barley** -- Production of barley is nominally around 120,000 mt annually using some 54,000 ha of land for this crop. There is a volatility of production mostly caused by land area shift. However, barley yields have trended downward over time. Barley production is nearly equally divided between the private sector and SOAEs.

**Corn** -- Production of corn averages 101,000 mt per year occupying approximately 43,000 ha. Yields average 2,350 kg per ha or the equivalent of 37 bu per acre, and have a slightly upward trend over time. This yield level is very low by international standards and should have the potential of yield increase by at least 150%. Private-sector farmers provide 90% of corn production.

**Rye and Oats** -- Production of rye averages 17,000 mt per year on slightly over 12,000 ha. Yields average 1,365 kg per ha or an equivalent of 20 bu per acre, which is extremely low by international standards. Production of oats averages slightly under 5,000 mt per year using slightly under 5,000 ha of land. Yields average 1,040 kg per ha or an equivalent of 20 bu per acre which is an even worse yield in comparison to international standards than rye. Over time the yields of rye have trended downward

while the yields of oats have trended upwards. Although, it cannot be statistically determined, it appears that the production of rye and oats is exclusively small private farmer production.

**Rice** -- Production of rice has averaged slightly under 32,000 mt per year utilizing slightly over 7,500 ha. Average yields are 4,180 kg per ha which is considered very good by international standards, given that this crop is not being grown in what would be considered an ideal climate or soil structure for such a commodity. The yield trend has remained flat over time. The small private farmer is responsible for 90% of rice production.

Rice production declined in 1993 by 75% to about 9,000 mt. The reason given was lack of water, meaning drought conditions. It is forecast that in 1996, production will be at 22,000 mt. It is interesting to note that some of the rice inspected was 2 to 3 years old. What this indicates is that there is a market problem which was more important in determining production than weather constraints.

**Summary** -- The grains production sector has stagnated. Production costs have undoubtedly increased over time and as unit output increase have not been achieved, unit cost of production is most likely increasing. This means there is no productivity in this sector which will encourage increased production (as far as technical limitations permit), nor, more importantly, reduced feeding costs for animal production. This sector may become, and may already be, non-competitive in terms of commodity costs vis-a-vis external markets. The cost of production in the grains sector is definitely an unknown, but it appears by observation that capital infrastructure is being seriously depleted.

Marketing, Processing, and Consumption

Quantities of grains moving into the market system are provided in the following tables. On the average, about 30% of the grain produced in Macedonia flows into some form of marketing channel, either nationally or locally. The balance of grain, depending on the type, remains at producer level for domestic consumption or feed use.

Quantities of Total Purchases of Grain-----

Year	Wheat mt	Corn mt	Rye mt	Barley mt	Oats mt	Rice* mt	Total mt
1985	126,545	6,474	4,529	27,957	1	15,767	181,273
1986	155,674	4,977	3,101	25,487	7	24,316	213,562
1987	159,946	2,561	8,042	15,319	7	16,718	202,593
1988	188,478	1,725	3,944	22,183	99	17,620	234,049
1989	144,917	3,390	1,486	33,487	580	7,694	191,554
1990	90,951	775	4,978	8,554	144	5,386	110,788
1991	155,521	7,415	3,424	23,160	5	13,081	202,606
1992	128,404	3,072	1,040	18,091	851	6,441	157,899
1993	135,195	4,196	3,381	35,937	85	3,881	182,675
1994	156,578	9,423	342	31,206	0	741	198,290

\* Rough Rice

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**Total Purchases of Grain as a Percentage of Production-----**

Year	Wheat	Corn	Rye	Barley	Oats	Rice*	Total
1985	43.9	8.2	25.0	22.7	0.0	43.6	33.0
1986	49.5	4.0	16.1	18.6	0.1	51.1	33.0
1987	54.7	2.7	47.8	16.9	0.2	34.0	36.9
1988	63.8	2.3	21.6	18.6	2.2	57.8	43.0
1989	46.2	2.5	8.3	20.9	8.3	28.0	28.9
1990	39.3	1.0	30.5	11.5	3.7	19.5	25.6
1991	45.6	5.5	23.1	14.2	0.1	34.9	29.1
1992	42.9	2.4	5.8	14.2	15.9	15.1	25.3
1993	54.1	4.2	29.6	34.7	3.2	41.0	38.2
1994	44.0	7.1	2.2	28.5	0.0	8.5	31.6

**Wheat --** Most of the wheat inspected was of a hard bread wheat variety. However, some winter soft wheat (with the appearance of a club wheat) was seen on the market as a livestock feed product.

The wheat marketing process primarily involves sale by the private sector to SOEs who are large scale millers or to agricultural production SOAEs who then sell both their own production as well as that of private sector purchases to millers. In this marketing process, less than 50% of total production flows into the large mill system and the balance is retained at producer level to be used for local domestic consumption or feed. Large flour mills state that this ranges from 48 - 52% and that most of the time it is well under 48% of production. Therefore, wheat imports are required to meet flour demand in the system. The best calculation that can be made for feed consumption of wheat is about 10% of production.

National flour milling capacity is hard to determine. The best that can be constructed is that there appears to be some 17 flour mills which can be called major flour mills (using the capacity range of 20 mt for 24 hr as minimum criteria). These mills range in size from the 20 mt to 200 mt per 24 hr capacity. Based on this, then the estimated daily capacity of major mills is somewhere around 750 mt. Given a standard 310 day work year, there exists a national capacity of 232,500 mt for flour milling. When compared to milled flour output statistics, this capacity is 30% larger than milled product output.

The results of the excess milling capacity are not spread evenly throughout the milling sector. Some mills were identified that we operating at nearly 100% of capacity, while others were operating at 80% of capacity. Some smaller mills were operating at 50% or less capacity.

The wheat retained at producer level for domestic consumption is milled by municipality-level small flour mills. These mills provide custom milling services as well as buying a portion of the output for resale. Small mill capacity for providing custom services in rural areas can not be determined. At best, it is estimated, by more or less reliable sources, that there should be 10 small mills in each municipality, which would make an estimate of 100s within the country. These are small used milling units imported generally from Italy.

Some of the issues raised by the large scale milling sector revolved around the issue of quality and classes of wheat. It is obvious from the discussions that imports were primarily based on price considerations, not quality determinations for production of flour or bread. This quality issue is also prevalent in the domestic production sector given what the bakery industry is doing to fortify flour to enhance bread production. Conclusions were that improved varieties of wheat were required in Macedonia which would provide conformity in protein and gluten content.

If the per capita consumption data which exists for bread, flour, and pasta is converted into flour use, and then further converted into wheat equivalent of flour use, then there is the following demand structure for wheat

	Human Consumption mt	Production mt
1990	376,911	231,832
1991	313,631	340,747
1992	365,197	299,522
1993	347,197	249,789
1994	331,075	356,133

Given that there is a demand for wheat for feed which calculates to be at least 10% of production, and may well exceed this level, there is a requirement for the importation of wheat.

**Barley** -- The marketed amount of barley varies widely, with an average of 20% of production over time moving into some marketing channel. Barley is said to be used primarily as an animal feed, however there is some unidentified domestic consumption use at producer level other than feed, be it bread or beer is not known. A portion of the barley marketed moves into the national brewery industry, however, quantities could not be identified.

The utilization of this crop as a feed seems to be both as a grain and as fodder (meaning grain, grain head, and stem combined).

**Corn** -- Corn is said to be used only as an animal feed in Macedonia, either through retention of production at farm level (for grain or fodder feed use) or it use in feed rations prepared by feed mills. However, some small amount of domestic consumption was identified. Less than 5% of the corn moves into the market system and those industries with feed mills state that currently corn is in extremely short supply even considering that the current crop estimate is larger than 1995.

**Rye and Oats** -- Rye and oats, as minor crops, are said to be utilized solely for animal feed. Although rye can be utilized as a bread product, no information on such use in Macedonia was forthcoming and it was especially denied that Macedonians used what is known as black bread. However, the previous table on marketed grain indicate that there is a strong trade in rye during certain years.

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Oats are rarely marketed and are utilized as a feed source at producer level. It is unknown whether this is strictly grain or some combination of grain and fodder products.

**Rice** -- Rice is produced as solely a human consumption food product, although milling byproducts are utilized in the feed manufacturing process. Most of the rice being grown is of the short-grain classification. However, there is a small amount of what is called long-grain rice, which on inspection, would barely fit into the long-grain rice criteria.

Enumerating rice mills to determine available capacities proved to be an effort in futility as only two major rice mills and one minor rice mill was identified. However, the processing capacity of these mills (estimated at over 30,000 mt annually) is more than sufficient to mill the 1996 estimated rice crop of 22,000 mt.

**Summary** -- The current situation requires the imports of at least 40,000 mt of corn and 20,000 mt of barley for animal feed purposes. And, over the past few years, wheat has been imported to meeting milling requirements for bread flour production. Obviously, there are great number of missing elements in both the production and marketing segments of the Macedonian grain system.

### Pricing

The pricing process of grains could not be determined because of the insufficiency of information. While the Statistical Office provides average annual national retail prices of food products in its yearbook as well as average annual retail prices by 8 major market centers, there is nothing in these statistical sets that provides a set of producer or market prices for grain commodities.

MCIC weekly market information for wholesale and retail prices for 8 major markets provides market prices for wheat, corn, and rice.

No price analysis of any form concerning grain commodities nor their products could be discovered. Obviously, some market price analysis needs to be conducted to grasp an understanding of pricing in the grains sector, not to mention the total agricultural and food system.

The following commentary is provided. It is the only pricing information collected.

**Wheat** -- Wheat last March was 15 Dn per kg according to MCIC information which would be equivalent to US\$9.78 per bu. At harvest it was quoted at 10 Dn per kg if the seller wanted to wait for his money. This is equivalent to US\$6.50 per bu. However, wheat was being sold for 8 Dn per kg on a cash basis which is equivalent to US\$ 5.22 per bu. This information is really not very informative. How does this price relate to cost of production? How does this price relate to flour and bread prices and the fact that this commodity is under targeted government price and subsidy control?

**Rice** -- Rough rice prices are currently being stated at 10 Dn per kg which is equivalent US\$11.00 per cwt. One mill stated they are milling and putting out a package of rice priced at 24 Dn per kg. This means that out of the 24 Dn, 17 Dn would be the raw product cost at their milling rate of 60%, leaving a margin of 7 Dn per kg. This is a gross margin of 7 Dn per kg which is a 40% gross margin. Now if this company can not make it on a 40% gross margin plus what they will recover for millfeed, then they had just better lock the door.

### Feed Industries

The SOEs, such as vertically-integrated millers and bakers, have feed manufacturing capacity in which they are utilizing millfeeds and corn for production of what is called animal feed. These appear to be solely carbohydrate-based feeds. There appear to be apparent shortages of corn and a definite lack of protein supplements, not to mention mineral, trace element, and vitamin supplements.

The only protein based crops are sunflowers, alfalfa, clover, fodder peas, and cotton. Cotton production is nearly gone. Sunflower production which was at its peak in 1989 of 48,000 mt has declined to slightly less than 18,000 mt. This crop was predominately grown by SOAE sector which produced some 60% of the output.

Of the above protein crops, alfalfa, clover, peas have protein potential but as fodder crops they are only suited (in rough form) to ruminant animals. Fodder crops are constituted by alfalfa, clover, hay, pea fodder, corn fodder, and sugar beet fodder. Now, all of this amounts to only 160,000 to 190,000 mt depending on the year in question. If the cattle inventory alone is compared to this production, here is what it comes out to -- about 280,000 cattle compared to 190,000 mt of hay. This equates to .7 mt per head for the winter, which unless the winter is mild means that there is not enough roughage, and there is a need for grain (more expensive) or straw (which is life maintenance only).

Imports of fish meal and soybean meal were identified, but amounts could not be determined nor could the cost structure.

### Constraints

The following are the major constraints for the grain sector.

**Lack of understanding of current market** -- There is no accurate understanding of how the current system operates. No one could accurately describe the total marketing process, including such characteristics as product flows, excesses, shortages, prices over time, or spot market opportunities in the grains sector.

**Cost of production, cost of processing** -- While this appears to be a production problem, it is in reality a marketing problem. No one really seems to know their cost of production, what margins are, what margins should be, what costs can be control, etc., and etc. A producer or

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processor can not market a product at a price that does not cover the full cost of production, including capital, and stay in business. There seems to be a lack of understanding of production costs, processing costs, and contribution margins.

**Lack of Marketing Information** -- There is a lack of a marketing information system which details prices and quantities in markets country-wide for grain products; and which is widely distributed and open to all participants in the agriculture/agribusiness sector.

**Lack of Market Intelligence** -- There is a lack of a systematic process which provides an array of intelligence information such as domestic commodity outlooks (perspectives and information on current marketing actions as well as future marketing actions) including emphasis on feed product imports and prices to enable domestic producers and processors to understand their competition. This must also include information on the quality standards of grain and feed products being imported as compared to locally produced commodities.

LIST OF CONTACTS

ANNEX IX

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