

# Agriculture

Despite land cultivation and farming activities in SE Europe being long-standing, its agricultural potentials and standards are lagging behind the European average. From the Middle East (the so-called Fertile Crescent) several agricultural achievements have spread westward to Europe via the Balkan Peninsula. Over time, however, this structural and chronological advantage vanished, turning into widespread environmental degradation, and considerably reduced the environmental potential of local natural resources. Environmental deterioration as a result of the impact of a human presence has been tangible in south eastern and south central Europe since the Greek and Roman times. In certain regions of the area, soil degradation and erosion, along with drought are permanent and acute problems. Due to intense clearance and logging on steep slopes (for firewood, construction works and shipbuilding) forests have become scarce, and in many places these activities resulted in their complete disappearance. On such barren slopes, secondary vegetation such as the impassable macchia has replaced the original one. The shrubby macchia is unsuitable for any logging or agricultural practices. Intermittent intense rainfall has led to considerable pluvial erosion and widespread soil degradation. Due to impractical and environmentally insensitive activities and land use, considerable areas have been lost for farming over the past century, especially along the most fertile (and most vulnerable) coastal strip.

Notwithstanding the aforementioned problems, agriculture is an important sector of the economy. In the countries of the region, the proportion of agricultural employees exceeds 10 per cent with the exception of Slovenia, Croatia (as a result of economic development), and Montenegro (due to its topography). Agriculture also has a considerable share in the region's GNP (*Table 19*).

Despite its important role in employment and the GDP, agriculture in the region is inefficient compared to EU norms. This phenomenon results from the natural and socio-economic characteristics of the region (extensive mountain ranges, lack of fertile lowlands, small farms, lack of appropriate machinery and equipment, and obsolete production systems). The only exception is the EU-member Slovenia, which possesses a more highly developed national economy compared to the rest of SE Europe (*Table 20*).

The ratio of cultivated land within the total land area varies to a great extent amongst countries of the region (*Figure 47*). These differences are explained by the topography and other natural features. Topography strongly affects the proportion of arable land related to the total area of the country (*Table 1*). With woodland added, the countries of the region have a relatively uniform proportion of productive area, i.e. its ratio as a rule ranges from 80 to 90 per cent of the total land area.

The majority of the countries on the Balkan Peninsula have access to the sea, significant riv-

*Table 19. The Role of Agriculture in the Countries of South Eastern Europe (2004, %)*

Country	Contribution to the GNP	Share in employment *	Share in the national export	Share of farming produce in import	Ratio of rural population
Albania	49	58	8	20	57
Bosnia and Herzegovina	13	..	6	27	57
Bulgaria	14	11	7	12	33
Croatia	9	3	10	9	42
Macedonia	11	..	11	27	41
Romania	15	32	3	7	45
Serbia and Montenegro	26	30 **	20	10	48
		2 ***			
Slovenia	3	6	4	7	51

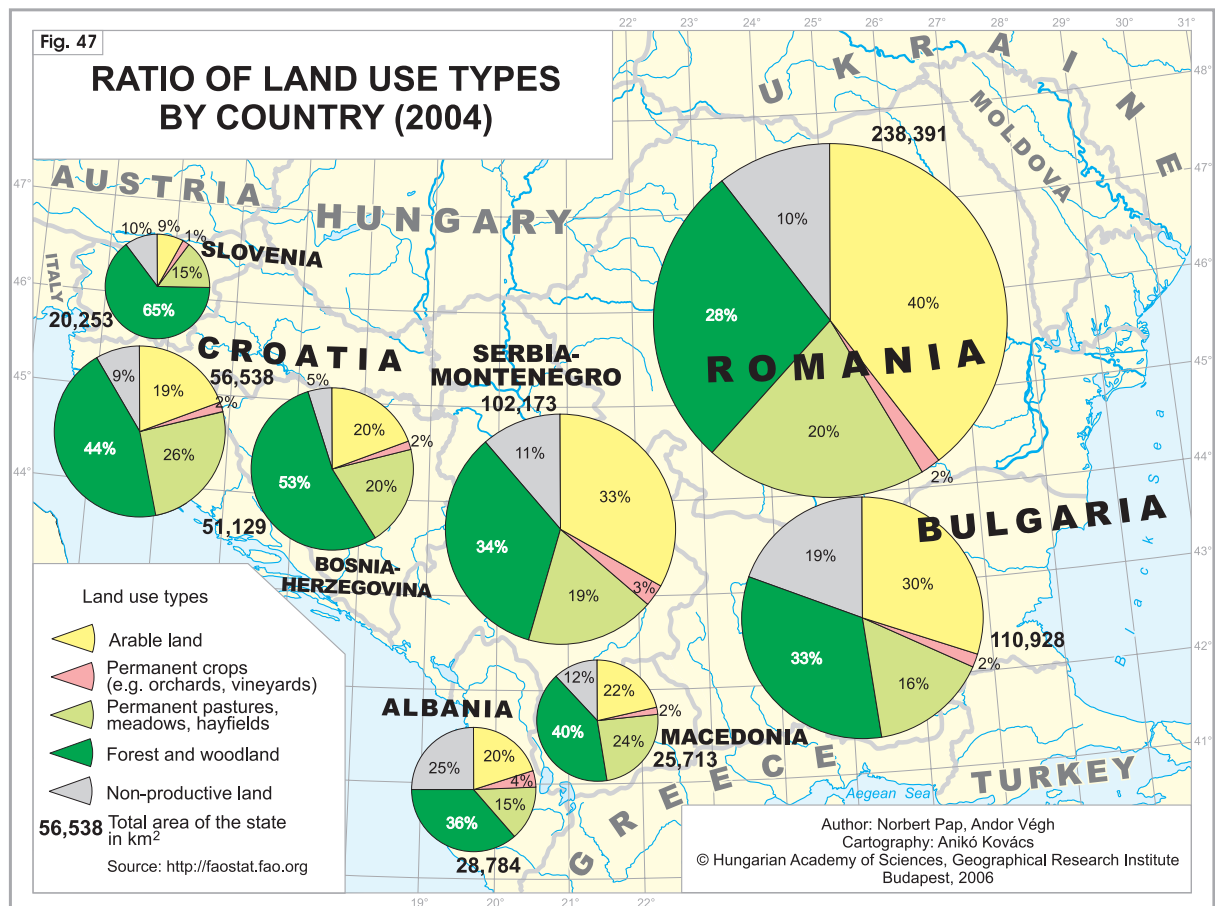
Remarks: .. no data; \* CIA World Fact Book (2005); \*\* Serbia; \*\*\* Montenegro.

Sources: Based on FAO and national statistical data ed. by N. Pap

Table 20. Selected Characteristics of Agriculture in South Eastern Europe (2004)

Country	Average income per capita, USD		Application of fertilizers, kg per ha	Tractors per 1000 ha	Ratio of farmland within the total land area, %
	Total income	Income from agriculture			
Albania	1,278	986	61	14	39.0
Bosnia and Herzegovina	1,675	4,354	33	29	41.9
Bulgaria	1,720	4,591	47	10	48.0
Croatia	5,440	5,430	118	3	55.5
Macedonia	2,429	2,038	40	95	48.3
Romania	1,615	2,152	35	18	61.7
Serbia and Montenegro	1,830	1,317	90	120	54.8
Slovenia	12,513	23,767	404	644	25.2

Sources: FAO data, and related calculations, ed: by N. Pap



ers (Danube, Sava) and lakes (Lakes Ohrid and Shkodra), although fishing is only of minor importance in international comparisons. Two countries of the region are landlocked, Macedonia and Serbia (since May 2006). Bosnia and Herzegovina has a 23-km long strip along the Adriatic around Neum; however, this is of strategic significance rather

than any functional one. Slovenia has a short, 41-km coastline with a bay whose control of which is debated. Croatia has a total coastline of 5,835 km (1,777 km without that of the archipelago), Montenegro's stretch is 293 km long, Albania has 649 km, Bulgaria includes 457 km, and Romania is bordered by a 696-km coastline on the east.

## Major Categories of Agriculture

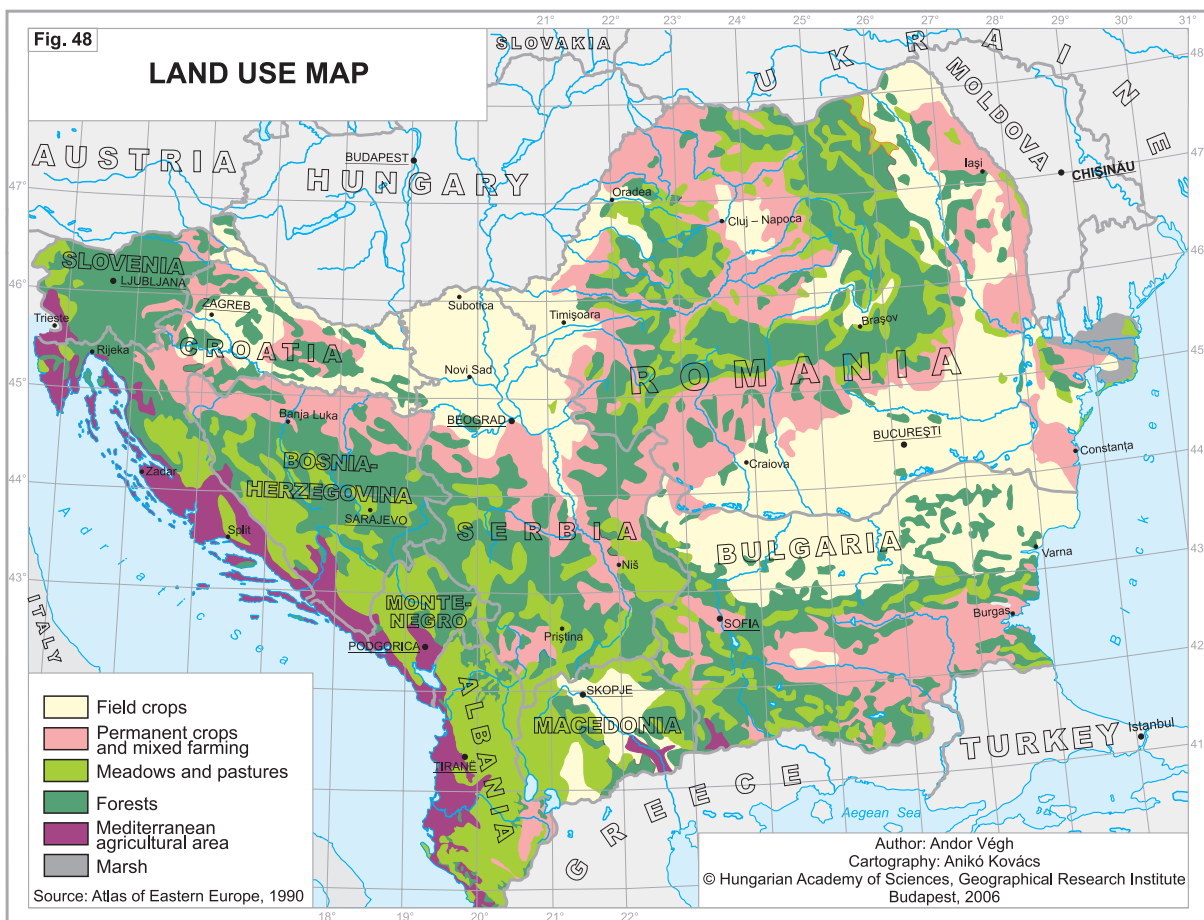
Due to the topography of SE Europe, the climatic and soil conditions within the studied area are extremely varied. As a result of the highly dissected surface, a pronounced horizontal and vertical variability of agricultural land use can be traced within small spatial units (*Figure 48*). Agriculture in South Eastern Europe can be classified into five major categories: typical Mediterranean; that of mountainous areas; hilly regions; karst basins and alluvial lowlands.

**Mediterranean**-type agriculture characterises the narrow coastal strip of Croatia, Montenegro and Albania due to the local climatic conditions. The major products of the area are olives, figs, grapes, early-season vegetables and citruses. This type of agriculture penetrates to the interior of the peninsula along the valleys of Neretva, Vardar, and Struma Rivers. In these areas, and especially around drained, formerly swampy areas and estuaries, agricultural activ-

ities are considerably supported by irrigation (e.g. Neretva Estuary, Albanian coasts).

Due to the coastlines of these countries, fishing is an integral part of the food industry and is carried out extensively in the Adriatic, Ionian and Black seas, as well as in the Danube Delta, where it has local importance. Fishing is not only conducted in the seas, but also on inland freshwater lakes, rivers and in many fishponds. Compared to the world market, the economic importance of local fishing is moderate, although its social role overweighs the economic one.

In 2004, the catch amounted to 32 thousand tons, of which 17 thousand tons pertained to Croatia and 12 thousand tons to Bulgaria. Among the South East European countries, Croatia is the only one that has a considerable fishing fleet, which includes approximately 300 fishing boats, more than 10,000 motorboats and



800 to 1,000 of other varieties. However, the size of the annual catch dropped by 33% over the past two decades. The annually produced spawn had dropped from 4,800 tons in 1989 below 2,000 tons by the year 2000. The magnitude of this decrease is typical in the SE European region and can be explained by extensive over-fishing and the decline of the large-scale fishing industry.

The area of farmland is limited in this climatic region of the Peninsula. Suitable farmland is located only along the marine coastlines, on the broader, but still narrow floodplains of the rivers and in small intramountain basins. These topographic circumstances have led to the deterioration of farming since the termination of self-sustained agriculture, these days essentially serving local demand. With the exception of vine terraces, erosion-retardant systems have been predominantly abolished from the area, primarily as a consequence of coastal mass tourism.

Forest fires of natural origin and those triggered by humans, as well as other human activities restricted the area of woodland, thus, in most cases, the most valuable significant forests are found in the national parks of the region.

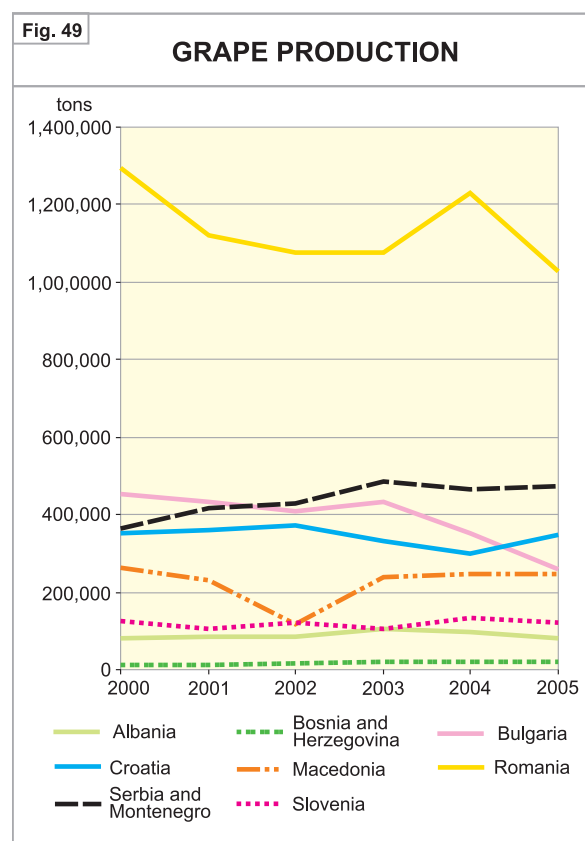
The most common crops are fruits and vegetables. Due to their early ripening and harvesting they appear on the inland markets early in the season. The most common fruits are berries, cherry, and plum; however these products cannot compete with similar fruits of SW Europe.

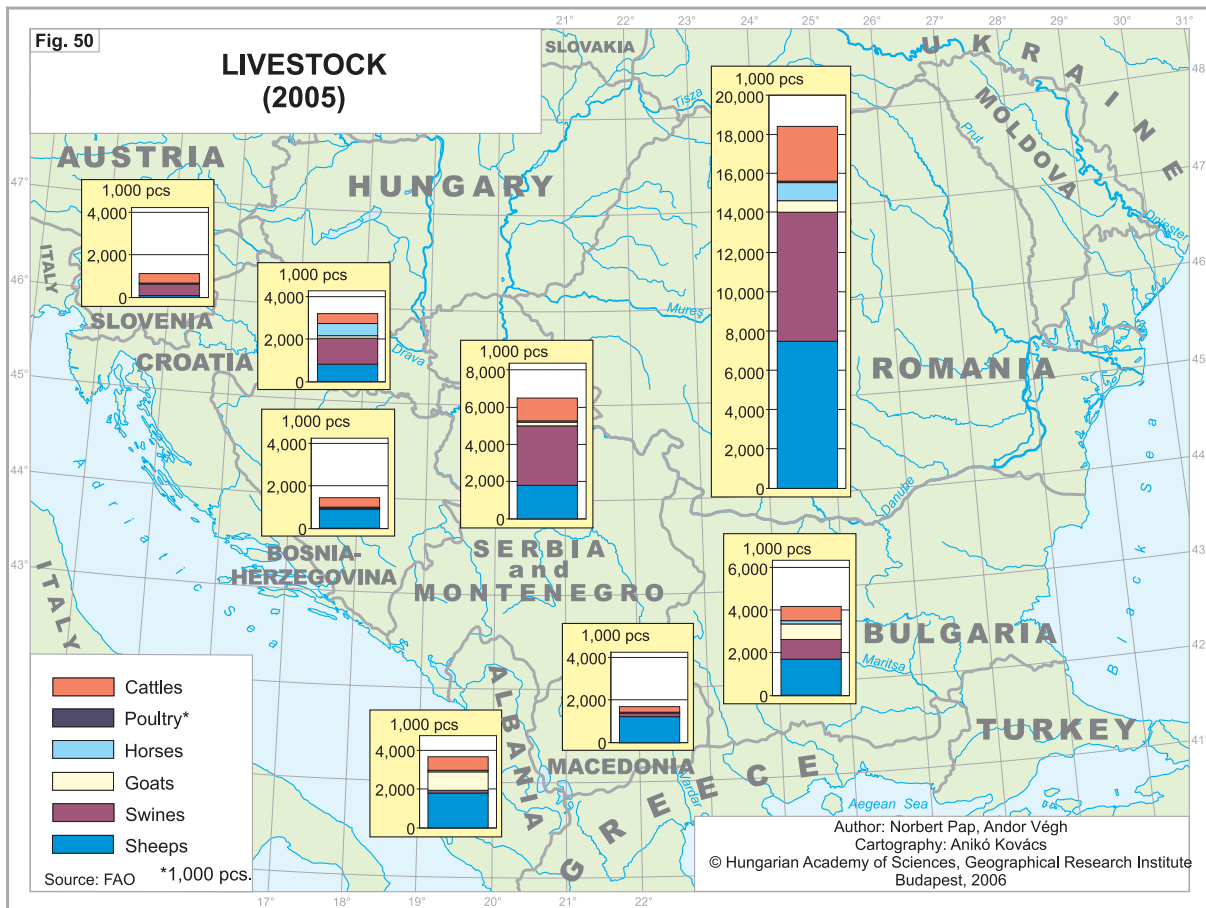
Due to local climatic and pedological conditions, the Balkan Peninsula is a prominent region for viticulture and wine production. There are two distinct major regions in South Eastern Europe: the Mediterranean and the inland wine-growing regions (Figure 49). According to the demand of the world market and the amount of wine produced the Mediterranean regions are more important, where raisin and dessert wine grapes are also cultivated. Wine-growing districts of this kind include Albania, southern Bulgaria, Montenegro, Kosovo, Macedonia, Herzegovina, the coastal areas of Croatia and a narrow southwestern strip of Slovenia.

Despite the generally favourable wine-producing potential of the region, modern wine production exists solely in Slovenia and Croatia. However, climatic and soil conditions of the remaining countries would favour state-of-the-art viticulture technology. Their drawback is the lack of adequate economic *terroir*, i.e. infrastructure and marketing policies. However, some countries, such as Macedonia and Bulgaria represent positive exceptions as they have shown a significant development in infrastructure. Viticulture is still in an underdeveloped and inefficient state in Romania and Montenegro, although it shows promising potential for production and quality in the future of these national economies.

Besides the worldwide varieties, traditionally grown regional winegrapes, such as Vranac, Kavadarika and Mavrud are also produced in the local wine-producing regions.

Pasturing is typical in the **mountains**, although due to the rainshadow effect and poor accessibility, in the main sheep and goats are kept on the semi-arid and meagre pastures of these regions (e.g. Dinarids, Balkan Mountains, Carpathians) (Figure 50). Originally, animal husbandry followed the so-called transhumance type of pasturing. However, the significance of the latter had decreased dramatically following the fall of the Ottoman Empire and almost completely disappeared during the communist regime. Today, only certain elements of transhumance pasturing are present.





The mountainous regions include some of the most extensive and valuable forests of South Eastern Europe. Each South East European country has a high proportion of woodland; Croatia, Bosnia and Herzegovina, Bulgaria, and Slovenia have higher-than-average forest coverage, while Albania and Macedonia are wooded to a similar extent as the 15 most developed EU countries (35%). In the 1990s the restitution of agricultural holdings was also extended to the woodlands and due to a short-termist, extremely profit-oriented approach along with gaps in legal regulation, privatisation in the 1990s considerably, and negatively affected agriculture and forestry in the region. This process was more dominant in the war affected states of the former Yugoslavia; illegal and uncontrolled logging in Bosnia and Herzegovina and in the Croatian Krayina caused serious environmental damage. Logging and export of timber is most important in Romania, although on a unit area basis, forestry and wood processing is also significant in Slovenia, Croatia and Bosnia and Herzegovina. Indeed, the most important export item of the latter is sawn timber.

In South Eastern Europe, agriculture is most intense in areas with a continental climate. **Hilly areas** in the mountain foreland, intramountain basins and lowland areas are dominated by intense animal husbandry, grazing and cultivation of various crops, supplying fodder and providing human foodstuffs. Cropping is supplemented with fruit and grape production, and various wines and fruit-based distilled beverages are produced (e.g. plum brandy: slivowitz). Several orchards spot the hilly regions and low mountain areas, typically in the so-called "Old Serbia"; certain areas between the Kapelas and River Drava in western Croatia; Central Transylvania; Moldavia; and the hills of Wallachia (Oltenia and Muntenia) in Romania, and southern Dobruja and Ludogorie in northeastern Bulgaria.

On low-mountain and hilly surfaces, forests of considerable extension but of rather sparse stock are found. Due to the vertical climatic zonation, pine, fir, larch and spruce are less abundant here; these altitudes are dominated by oak and beech forests. The issues con-

cerning forest management are similar to those of the high mountains.

In the **karst basins**, on the so-called "poljes", i.e. the flat and very fertile ground of the karst valleys, the animal husbandry of the neighbouring mountains is mixed with local crop cultivation. The flora and fauna of these microregions is similar to those in the hilly regions, but their general character is considerably determined by climate, type of land use and dominant agricultural activities (orchards, croplands, pastures). The karst basins' particular value is in light of the surrounding barren areas along with the karst springs providing irrigation water.

Most intense farming areas are those on **lowlands** and river valleys. Areas of low relief include the interfluvium between the Drava and Sava rivers, Bosnian Posavina, Voivodina in northern Serbia, Wallachia in southern Romania, the Bulgarian tableland and the upper Thracian Plain. Additionally, intramontane basins and narrow valleys of water courses provide ideal soil and climatic conditions for crop production. In summary, for tillage and crop production the most favourable climatic and soil conditions are in the eastern Balkan Peninsula.

Traditional and primary crops of the area are wheat and maize, both playing an important role in the supply of fodder and foodstuffs in the region. Other staple cereals are barley, oats, and rye, as is rice in the influx of rivers. Potato is also an important crop on sandy soils.

Sunflower, rape, soybean, canola, sugar beet, hop, flax, hemp, and cotton are the primary industrial crops. However, their cultivation only dates back to the period of the socialist modernisation.

Animal husbandry of the region is primarily determined by the local endowments and traditions. Cattle raising is principally conducted in feed-lots, and to a lesser extent like in Slovenia, on mountain pastures. Hog-raising is partly based on local tradition (e.g. in Serbia), while in maize-growing regions, feed-lots have been established.

Traditionally, horses are kept as draught animals. Despite modernised farming techniques, they still play an important role in everyday rural life, especially in Romania. Due to land privatisation in the region and the re-emergence of small-holdings, the stock of horses has increased since 1990. In the mountainous regions of Albania and Bulgaria, donkeys and mules are kept as working animals.

Large-scale poultry farming supported by forage production is typical in the eastern part of the Balkan Peninsula, primarily in Romania and Bulgaria, where it has resulted in large stocks (*Figure 50*).

The aridity index (the ratio of evapotranspiration to annual precipitation, both measured in mm) on the lowland areas range between 0.5 and 0.8 (sub-humid dry and semi-humid), indicating the semiarid character of the area and its tendency for the frequent occurrence of droughts. To avoid damage caused by droughts, extensive irrigation systems have been constructed in the region. The proportion of irrigated area within the arable land is relatively high (Albania: 49%, Bulgaria: 17%, Romania: 31%, Macedonia: 9%). During the tourist season breakdowns occur in the local water supply, predominantly in places popular with tourists. Such places are, for instance, the karstic Dalmatian Islands, where water shortages often occur during the summer season, and the quality of the water is deteriorated by microorganisms, primarily by bacteria.

The annual freshwater fish catch exceeds that of sea fish, reaching 34,000 tons in 2004. There are a large number of fishing lakes in the region, the most important ones located in the Danube Delta, Lakes Shkodra, Ohrid, Prespa, and several fishponds, created by the damming of streams. Romania is the leader in the region with 14,000 tons of fish annually. Bosnia and Herzegovina is also significant, likewise producing a 14,000 ton catch, with the majority being trout; there is widespread fish farming in upstream rivers in the mountains of the country.

Certain regions in the studied area have specialised agriculture. The term "Bulgarian (market) gardener" is associated with vegetable and flower farming practices. Bulgarians are widely renowned as expert gardeners in Central Europe. In the Struma river valley (Bulgaria), as well as in the lowlands of Southern Albania and Macedonia tobacco farming plays an important economic role. In the Tundja Valley, and around Kazanlak and Karlovo, the cultivation of certain varieties of roses that produce rose oil is important, and has triggered the processing of these roses as a main local activity. On the southern Macedonian Uplands (Pelagonia) the growth of poppy-seed used to play an important role but its farming has lately become centrally controlled, thus its importance is vanishing. In

the Mediterranean strip of the peninsula, and also in the ecologically poor highland zone certain herbs and plants producing volatile oils are cultivated, although the potential for growing these plants is far from being fully explored.

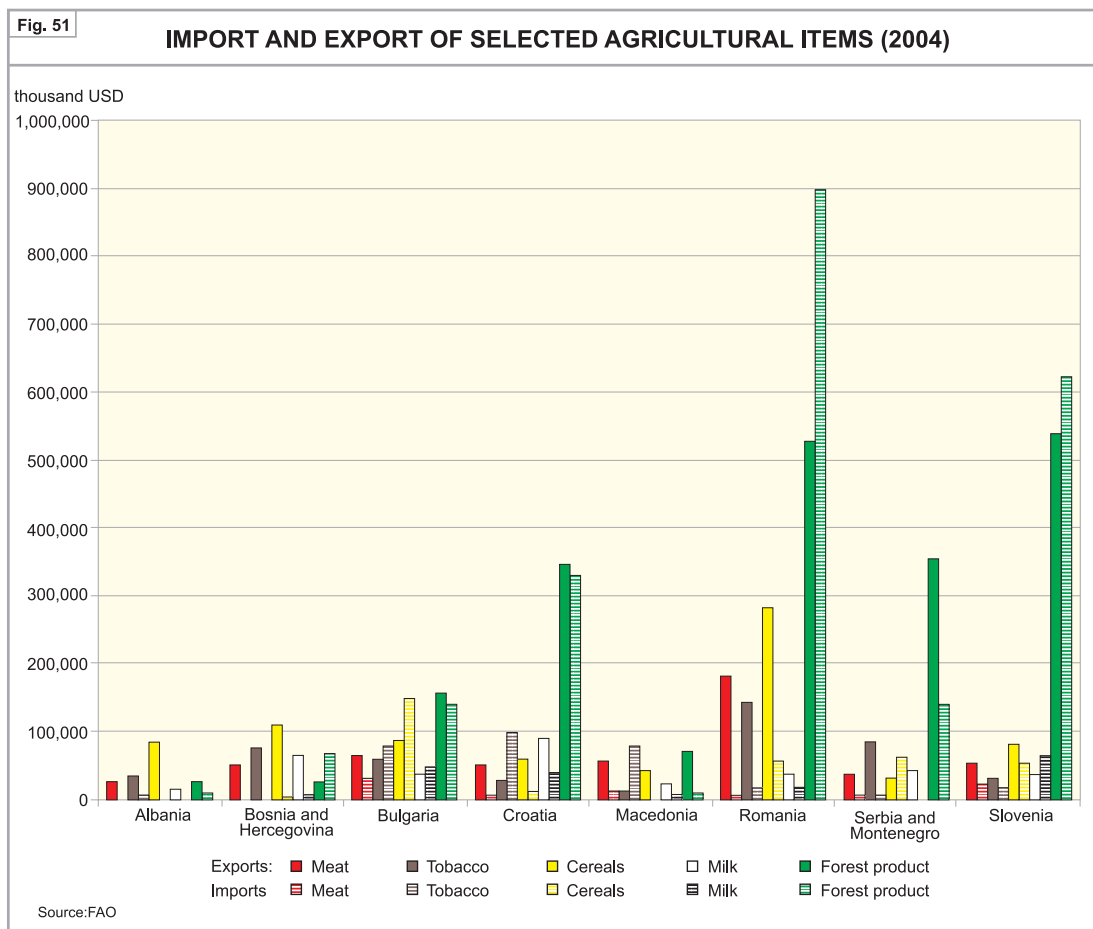
Even Croatia, the leader in the production of vegetable oils (e.g. lavender), does not fully exploit this potential. Silkworm breeding is typical in the Banat region (Romania), as is bee-keeping on the Romanian Plain.

## Agriculture and Foreign Trade

Despite the high ratio of agricultural employment and a considerable part of the national income originating from farming, the agricultural-industrial countries of the region have not been able to meet the demand from their population for foodstuffs and have turned into net importers of agricultural goods. Due to the shrinkage of international markets, namely, the declining import capacities of the successor states of the Soviet Union, and increasing food production in the EU which has become a food exporter, agriculture in the region has faced serious challenges lately.

Since the collapse of the Soviet market, foreign trade has become orientated towards the EU. However, the choice of internationally competitive and profitable farming produce is limited so the existing trade relations are based on historical and political traditions, and on the former division of labour (*Figure 51*).

The traditional trading partners of Albania are the more developed Greece and Italy and are the leading export and import partners of the country. Turkey, as Albania's old and new political supporter also plays an important role



in Albanian foreign trade whilst Albanian exports target Germany, and Serbia and Montenegro, too. The most important Albanian export articles are tobacco, cigarettes, wool products and various foodstuffs, such as wheat and wheat-flour.

The EU is the major foreign trade partner of Bosnia and Herzegovina, with Italy, Austria, and Germany being the foremost leaders. Of countries outside the EU, Switzerland plays a prominent role. One-third of export–import trade occurs with the countries of the former Yugoslavia. Trading is odd in this respect; the Serbian entity of the country (“Republika Srpska”) established trade relations with Serbia, while the cantons inhabited predominantly by Croats (e.g. West Herzegovina) signed trading agreements with Croatia. Since most of the industrial capacity of the country suffered heavily from warfare, agricultural goods form the majority of export items. The most salient import articles include cigarettes, food, and non-alcoholic beverages. The major export items are wood products, fruit and variety of foodstuffs.

Bulgaria’s primary trading partners are its neighbouring countries; imports include processed and preprocessed food, raw sugar, and tobacco. The leading export articles are wheat, wine, and tobacco.

Croatia’s major international trading partner is the EU. Food is primarily imported from Italy, Germany, Austria, and Hungary. The target markets for exports also include these countries, as well as countries of the former Yugoslavia

(Bosnia and Herzegovina, Slovenia, Serbia and Montenegro). Refined sugar and food products are mainly exported.

Macedonia’s major trading partners include Germany, and the southern countries of South Eastern Europe, either in the close vicinity or in remoter areas.

Greek investment plays an important role in the modernisation of Macedonian trading and industry. The most important imported articles include beef, wheat, and chicken. The major export goods are tobacco, wine, and non-alcoholic beverages.

Most food-products imported by Romania come from Hungary, Germany, the United States, and the Netherlands. Exports primarily targets Italy, Greece, Hungary, Germany, and Turkey. The majority of imports includes beef, sugar and cigarettes, while export is dominated by livestock (sheep and cattle) and cereals.

The major international trading partners of Serbia and Montenegro are the neighbouring countries and the EU, from which primarily cigarettes and food-products are imported. Exports include processed sugar, as well as fruit and wheat.

Slovenia’s major trading partners are the former republics of Yugoslavia and the EU countries in the vicinity, such as Hungary, Germany, Austria, and Italy. Import items include food-products and soy-bean as fodder. The most important export articles are non-alcoholic beverages, beer, barley, and other foodstuffs.

## Privatisation in the Farming Sector

Privatisation took place in the 1990s as part of economic restructuring. However, there have been significant differences in the privatisation policies of the various countries, which significantly affected certain social and ethnic group (e.g. Turkish minorities, Roma), and in some cases negatively.

The principle of privatisation has basically been restitution, i.e. the restoration of original land ownership. The primary, but not the exclusive targets of restitution in the republics of the former Yugoslavia were state farms, with the exception of Slovenia, where the latter were the only enterprises designated for land privatisation.

All land used to be in national ownership in Albania. The legacy of the north–south division of the country was also reflected in privatisation practices. Land was originally redistributed here evenly among the residents, according to the number of family members. In this way settlers from the socialist period have also become entitled to land for farming. This plan was realised in the southern regions, inhabited by the Tosk-Albanians. On the other hand, the Geg-Albanians of the north demanded the restoration of original ownership, which was eventually achieved.

Restitution was achieved in a complicated way in Romania. Members of cooperative farms



were compensated up to a certain land acreage, while the remaining land was restituted among non-members. Following bitter debates, former cooperative farm employees also became entitled to compensation, which took place in 1999 and 2000.

The process of restitution in Bulgaria was even slower and more complicated than in Romania. Due to the absence of an appropriate

land registry, the original ownership pattern prior to land nationalisation was barely traceable. Local conflicts of interest, and abrupt changes in the political system emerged as an additional hindrance. The Turkish minorities in Bulgaria and the majority of Roma in the broader South East European region were completely excluded from the process of restitution.

## Size of Holdings and Forms of Management in Farming

South Eastern Europe is dominated by small, private land holdings (*Table 21*). State farms have survived only locally, mostly in Romania and Albania. The resulting, post-communist average farm acreage has had a detrimental impact upon productivity, but it has been beneficial for employment. The numbers of staff in the remaining large farms have been reduced dramatically for economic reasons, although part of this group of dismissed employees found jobs in the newly formed, small farms.

In many cases, agriculture became the tool of mitigation, or even a solution for social conflicts. De-urbanisation was observed in numerous cases as city-dwellers moved to the countryside for the purposes of self-sustenance. This de-urbanisation process was even stimulated by central governments in certain instances (e.g. in Romania). As a consequence, with the exception of Croatia, where residents left the countryside during the war (1991–1995), the proportion of rural dwellers has increased almost everywhere in the region since the early 1990s, and today

represents a high figure. In these countries, agricultural families are supported from social aid or unemployment welfare, single salaries or by transfers from money earned abroad. The rest of the family produces food almost entirely on a subsistence basis, with a small surplus sold at the local marketplaces. Food production is limited by the generally low profitability of agriculture. Due to strong competition in the food market, and the very low incomes of the population, food prices have not changed considerably of late. Meanwhile, production costs (fertilisers, herbicides, fungicides, insecticides and machinery) have increased significantly, and state subsidies have dropped heavily being limited by central budgets deficits and a hostile international environment. As a result of low efficiency and the traditional reluctance of farmers, bank financing and credits do not play an important role in the recovery of underdeveloped farming, and, as a consequence, intensification of agricultural investment is not envisaged.

*Table 21. Ownership Forms in Agriculture prior to 1990 and 1998 in South Eastern Europe (%)*

Country	Cooperative farms		State farms	Farming enterprises of new type	Private farms	
	Prior to 1990	1998	Prior to 1990	1998	Prior to 1990	1998
Albania	74	..	22	20	4	80
Bulgaria	58	42	29	6	13	52
Romania	59	12	29	21	12	67
Slovenia	..	..	8	4	92	96
Croatia	22	18	..	..	78	82

Remark: .. no data.

Source: after Illés I. (2002) by N. Pap

## Other Impacts on Rural Regions

Despite the priority of agriculture in rural areas, industrial activities also affect the general economic character of a region. A high number of construction workers and miners live in rural areas. Many of them commute to urban centres, or to certain remote regions of the country. The industrial employees of the countryside became the first victims of the market-oriented economy; however, in Romania and Bulgaria, many of these newly unemployed people found jobs in farming.

In the 1970s and 1980s during the off-season, the employees of agricultural cooperatives found non-agricultural jobs (in the industrial and service sectors) in increasing numbers, primarily as construction workers. However, during the economic crisis of the 1990s, many of these small, subcontractor-type enterprises closed down. Thus, many of the former agricultural workers became unemployed as they lost their auxiliary, non-agricultural jobs.

Differences among the national social security systems, and retirement and pension policies had a strong impact on agriculture. In some cases, a decent, compensatory pension was offered for the former members of cooperatives and state-farm workers, who as a rule accepted the offer to retire prior to the close of their term of service. In countries of South Eastern Europe where such offers were not made, or where the proposed retirement pay-off was minimal, the average age of agricultural employees remains high with a significant proportion of people aged over 50. In the absence of decent pensions, the average age of employees accelerates, and, in fact this age group also includes a large number of unemployed people. In South Eastern Europe large families provide some kind of social security for the elderly.

## Impact of the Yugoslav Wars on Agriculture

In the war-ridden regions of the studied area (Croatia, Bosnia and Herzegovina, and Kosovo) the presence of active landmines poses an additional problem. An estimated 1.46 to 1.90 million landmines are still to be found in the combined area of Croatia and Bosnia and Herzegovina. Thus, considerable land area has remained uninhabited and still hinders the repopulation of such

regions. The vast land areas taken out of general and agricultural use primarily adversely impact the Bosnian economy. Most refugees came from rural areas and as a consequence, indirectly, agriculture is also negatively affected by this process. Farming is further hindered by the issue of unclarified ownership, in many cases chiefly caused by the use of oral agreements on land use.

## EU Support of Regional Agriculture

The extent of support for the development of agriculture strongly depends on the political and economic relationships between EU countries and those of South Eastern Europe. Slovenia, as an EU member is supported from financial sources for the common agricultural policy. Romania, Croatia, and Bulgaria, as associated countries but not EU members are supported through the SAPARD program which is specifi-

cally aimed at the development of rural areas. Similar assistance is expected for Macedonia from 2007 onwards, based on the new IPA system. The agricultural sectors of Albania, Serbia, Montenegro, and Bosnia and Herzegovina are supported by the CARDS program. CARDS does not specifically address agriculture but provides financial aid to certain projects that are indirectly associated with agriculture.