

Review

Agricultural land markets and land leasing in the Republic of Macedonia

Neda Petroska Angelovska¹, Marija Ackovska¹ and Štefan Bojnec^{2*}

¹Institute of Economics, University "Ss. Cyril and Methodius", Skopje, Republic of Macedonia.

²Faculty of Management, University of Primorska, Koper, Slovenia.

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This paper aims to identify the driving force that shaped agricultural land structures, land market and land leasing in the Republic of Macedonia. Institutional developments and land reforms have so far been modest, and have not contributed to significant changes in agricultural ownership, operational structures, or land market and land leasing arrangements. Land ownership and land use are bimodal, consisting of several small-scale family farms and a few large-scale agricultural enterprises. The small family farms own and operate land on several small parcels, which is one of the major obstacles to the modernisation of family farm production. They produce food for household subsistence with mixed crop, fruit, vegetable, grapevine and livestock production. A considerable portion of the land is uncultivated, which affects land market and land leasing values. Due to underdeveloped institutional frameworks and market institutions in support of small-scale farms, a large proportion of state-owned land is rented by agricultural enterprises.

Key words: Agricultural land ownership, agricultural land operation, land market, price of land, rental values, Former Yugoslav Republic of Macedonia.

INTRODUCTION

The issues of land reform, land policies, land market and land leasing arrangements have been the subject of much research over the past two decades. As has the issue of evolving farm structures, focusing on the transition taking place in Central and Eastern European countries (Csaki and Lerman, 2000; Lerman et al., 2002;) and on emerging market economies (Bojnec, 2011; Yalcin, 2011). Farm land markets and land price formation have traditionally been the focus of attention in economic theory and practices in farmland areas (King and Sinden, 1994) and in urban gravitation areas. The rapid urbanisation and expansion of large towns and cities has a significant impact on land markets in certain areas on the transition from agricultural to urban land use and urban influences on peri-urban farmland

prices (Arnott and Lewis, 1979; Cavaillès and Wavresky, 2003). Different approaches can be used to investigate land prices and land rental values. A hedonic price analysis determines the marginal return to different parcel land characteristics. The agricultural land prices can be determined by specific municipal real sale factors (Vural and Fidan, 2009).

Le Mouël (2005) provides an overview of the main issues in literature on agricultural land markets with conditions for emerging and well-functioning agricultural land markets, including land reform and farm restructuring in transition countries, and agricultural land price formation. Latruffe and Le Mouël (2006a) provided a comparative descriptive analysis of agricultural structures, the agricultural land market environment with institutional and legal aspects, land market activity, and potential imperfections on land and labour factor markets in selected European Union (EU) countries. Latruffe and Le Mouël (2006b) also presented a literature review on the theoretical and empirical findings of association between agricultural support, farmland markets and

*Corresponding author. E-mail: stefan.bojnec@fm-kp.si, stefan.bojnec@siol.net. Tel: +386 5 610 2046. Fax: +386 5 610 2015.

prices. On the basis of an overview of the existing literature, Latruffe and Le Mouël (2007) argued that agricultural support policy instruments contribute to increased farmland rental prices, depending on the farmland supply price elasticity vis-à-vis other inputs and input substitution. Land prices are seen as being more responsive to government-based returns than market-based returns. Swinnen et al. (2010) found out that the effects of EU CAP subsidies are stronger on rental prices than on land prices, but differ across the EU member states.

The aim of this paper is to provide a qualitative and quantitative analysis of the key issues and main factors driving developments in agricultural land markets in the Former Yugoslav Republic of Macedonia (FYROM) and the impact of national and EU programmes on the functioning of agricultural land markets. Noev et al. (2003) provided an overview and comparative analysis of land rental market developments in the FYROM and Bulgaria. Swinnen and Van Herck (2009) investigated land market issues in the context of the FYROM's agricultural sector and agricultural policy, looking at the pre-accession experience and the implications for the agricultural sector. As in other former Yugoslav republics, the agricultural collectivisation in the FYROM failed in the second half of the 1940s, while land on large estates and above a maximum land size was nationalised and converted into socially owned land (Bojnec and Swinnen, 1997; Melmed-Sanjak et al., 1998). Due to the failed collectivisation of labourers and smaller household farms, the majority of agricultural land has remained in the possession of small family household farms. This has resulted in a bipolar ownership and operational farm structure similar to the other former Yugoslav republics and Poland, with many small household farms and a few large former state (socially-owned) enterprises. The bipolar farm structure is still owned by the private household farms, while about 80% of the total agricultural land is owned by the state and the remaining 20% is leased by agricultural enterprises, which are the successors of the *agrokombinats*¹ and socially owned agricultural enterprises (Swinnen and Van Herck, 2009).

In addition to the bipolar farm structure, agricultural land used by private agricultural households is fragmented in several small plots, which has been determined by the inheritance system. To increase average farm size and improve conditions for land consolidation and structural changes from less efficient to more efficient farming, the lack of a well functioning land

¹Public Agricultural Enterprises (formerly socially owned enterprises). *Agrokombinats* (AKs) used to be vertically integrated agri-businesses managed by the state, which have large land holdings and operate on state owned land on a usufruct rights basis, while the state holds the effective property rights. AKs are diversified in primary production, input production, agro-food processing activities, commercial storage and marketing services. Very often they were input suppliers and main buyers from the private farmers but indirectly through the socially owned agriculture cooperatives, which have smaller land holdings and engage only in primary production.

market, land leasing market and institutions are issues of particular importance (Noev et al., 2003). A significant proportion of state-owned land is not cultivated or is cultivated illegally (Acrotass-Consortium, 2006; Swinnen and Van Herck, 2009). This paper is structured as follows:

Subsequently, the study focuses on institutional development and land reforms, after which it presents the national agricultural policy activities in the creation of an information system for agriculture and land policy. This is followed by an analysis of the structures of agricultural and cultivated land by categories of use and average farm sizes; land use and issues of uncultivated land; land leasing, land rental values and land prices; and economic farming structures. Finally, conclusions and policy implications relating to agricultural land transfer, their impact on agricultural development and structural change, and their impact on the rural economy are drawn.

INSTITUTIONAL DEVELOPMENT AND LAND REFORMS

The efficient use of agricultural land in the FYROM is compromised because of land fragmentation as a legacy from previous institutional limitations of used areas and ownership, heritage customs, and informal relations in the land market. Agricultural land management is of general interest to the FYROM and enjoys special attention. Using, disposing of, protecting and reallocating agricultural land in state property is regulated by the Law on Agricultural Land. The 1986 Law on Land Use, regulated the transfer of privately held agricultural land while attempting to prevent fragmentation and promote consolidation.² The law also prohibited the division of land parcels by sale, inheritance, gift and similar land transfers. This law was amended in 1991 to reduce some of the restrictions on land transfers. The latest amendments to the Law on Agricultural Land from 1998 did not introduce any changes regarding the marketing of state-owned land. State-owned land cannot be subject to trading but it can be managed as follows; given with concession to both domestic and foreign natural and legal entities for a period depending on the particular production in question;³ leased to domestic and foreign

²Under this law, land fragmentation was constrained in several ways. First, a tax of 3% was levied on agricultural land transfers to discourage land fragmentation. Second, the law required that a right of first refusal be offered to the users of nearby socially owned land and then to owners of neighbouring plots. It is reported that these restrictions were frequently not followed in practice.

³Fodder and field production for a period of 20-30 years, green-garden and semi-annual plants production for 30-40 years, and wild animals and fish farms for a period of 10-30 years. The procedure of concession is realised through public announcement with auction by the commission based on the government decision and organised and supervised by the Ministry of Agriculture, Forestry and Water Economy (MAFWE).

entities on a short-term (for 5 years) or long-term basis (from 5 to 40 years) with public announcement. Otherwise, state-owned land can also be used free of charge by socially vulnerable groups⁴ and contracted for one year rental.

The privatisation process failed to include the state-owned agricultural land managed by agrokombinats because the law defines agricultural land as a public good or natural treasure, thus, allowing the state to maintain the title to this agricultural land in accordance with the Law on the Transformation of Enterprises Managing Agricultural Land. The privatisation process of agrokombinats started in 1996, but by early 1999, only 15% of this type of enterprise was privatised. The process was accelerated with the implementation of the Action Plan for Privatisation and all agrokombinats were privatised following the model of ownership conversion. The transformation of agrokombinats took place according to the Law on the Transformation of Enterprises with Social Capital and the Law on the Transformation of Enterprises and Cooperatives with Social Capital managing agricultural land (Petroska et al., 2012). The agrokombinats that were transformed according to the provisions of the Law on Trade Company are registered as joint stock companies. The majority of pasture land is still owned by the state and managed by public enterprises for pasture management.

The effective use of agricultural land is hampered by parcelling and fragmentation which stems from previous limitations on useable areas and ownership⁵ inheritance customs, and a tradition of informal relations in the land market. The weak land market transactions, which failed to contribute to farm consolidation, and the low economic growth and lack of social security keeps feeding the process of land fragmentation and diversification of production in small plots in order to offset market fluctuations and satisfy the food needs of small and subsistence farms.

According to the articles of the law, for the purpose of cultivating agricultural land, it is possible to consolidate arable land, carry out agro-technical and agro-improvement measures, erosion prevention and land pollution. The consolidation of land can be on a permanent or temporarily basis. The legal frameworks contribute to increased legal safety in the use of land, equal treatment for domestic and foreign legal entities and the strengthening of monitoring and penalties. The general objectives of the legal frameworks are; rational usage of agricultural land as a natural resource, protection of agricultural land, and ensuring the legal safety of land owners and users. The legal framework brings new solutions regarding the pre-emptive right to

⁴ The categories of socially vulnerable groups are defined as farmers without land, unemployed persons, users of social assistance, unemployed from bankrupted companies, and similar groups.

⁵ Until 1984, the maximum amount of land a single farmer was allowed to own was 10 ha or 20 ha in hilly or mountainous areas.

buy land, with the purpose of preventing its fragmentation and a more rational use and implementation of mentioned measures. This means that in the case of selling land property rights, the priority refers to the current users and the neighbours of the land.

Arable agricultural land is divided into eight cadastral classes according to its degree of quality; meadows, rice fields, vegetable plots, orchards, vineyards, pastures, forests, and swamp (SSO, 2010b). In the case of land consolidation, state agricultural land is exchanged with private land only when private land is the object of exchange borders with state land parcels.

INFORMATION SYSTEMS FOR AGRICULTURE AND LAND POLICY

The Ministry of Agriculture, Forestry and Water Economy (MAFWE) governs certain activities connected to policy on agricultural land. Parts of them are already implemented through the Agriculture Strengthening and Accession Project (ASAP) financed by the World Bank. The implementation of an Integrated Administration and Control System (IACS), integrated Farm Register and a Land Parcel Identification System (LPIS) are the basis for the creation of an efficient system for the administration and control of national policies and programs of direct agricultural support. The LPIS is not still fully operational, even though it was projected to be so with the completed final testing of the LPIS software at the end of April, 2011.

The Farm Accountancy Data Network (FADN) is operational, with the legal basis, institutional framework, methodologies and procedures in place (Angelova and Bojnec, 2011). The rulebook for data collection, farm typology and farm return methodology is finalized in accordance with EU regulations; and the software installed and tested. The 2010 data collection is completed with the FADN unit checking and analysing of the data. The FADN unit is not ready to report to the EU until early 2012, when they are confident of the standardization and data control systems testing (World Bank, 2011). Information on agricultural parcels and land ownership is confirmed to be accurate in the Register from the registration department inside the MAFWE. The intention of the MAFWE is to set up an integrated administrative register of agricultural holdings as an umbrella register over all other registers, holding information that is important for effective decision-making (the future use of the statistical farm register is to be specified) and implementation of direct payment policies. The farm register will form the basis for managing national and EU support schemes before EU accession (Instrument for Pre-Accession Assistance for Rural Development - IPARD) and post-accession EU support payments. The main purpose of the integrated farm register is to link and thus, unify all registers by allocating a unique farm identification number. The farm register will

provide additional data (in addition to agricultural statistics, FADN, Agriculture Market Information System – AMIS, and similar) for policy analysis and planning. The register will be developed at farm level, supported by appropriate information technology (IT) hardware and software, and fed by data from the relevant available and future databases and registers. These will operate once it is established with information characteristics that describe agricultural holdings in terms of farm ownership, physical production structure, standardised commonly defined IT platform, with consistency in operational procedures and methodology for data flow and data management.

The basic EU requirements concerning the farm register are in the context of payments. Direct payments and economic agricultural measures must be paid using the integrated administration and control system. In fact, the farm register and farm holder⁶ represents the basic production unit in agriculture. A single system to record the identity of each farmer is a compulsory part of the integrated administration and control system (Petroska et al., 2012). For the successful implementation of the farm register, it is crucial that data entry and updating is carried out at local level to establish close relations with farmers and to use the same organisational and information infrastructure for building and updating the other important registers in agriculture, LPIS, vineyards, and others – and for the implementation of the agricultural policy (applying IACS). To ensure the efficient functioning of the interconnected set of registers, the main register sources (veterinary administration, MAFWE and payment agency) should be connected with a high-capacity communication network. To manage the system efficiently, there should be central management of a decentralised system. The system should support the remote work-post approach which enables every employee to use information and office support tools everywhere in the system (World Bank, 2011).

The LPIS, together with the farm register, form the backbone of an efficient system for the administration of and control over the national policies of direct support. As a part of the IACS, LIPS is connected to the farm register managed by the MAFWE department for policy analysis and strategy. For the purpose of LPIS implementation, the creation of detailed database and standards for agricultural land consistent with EU Regulation 1593/00, with further accommodation and acceptance of the Common Agricultural Policy (CAP) is considered. To this end, MAFWE cooperates with the State Cadastre Agency. Joint activities will consist of the comparison of

LIPS orthophoto (data) with those of the Cadastre, with the sole purpose of finding land mis-management, land usurpation and the illegal use of state land, and to correct land size identification for the purpose of real production assessment and the payment of subsidies.

The LPIS is created on the basis of maps or documents from the agricultural land register or other reports. The use of LPIS will be in the form of a computerized geographical informative system, exploiting air or space orthophoto techniques, with consistent standards applying a minimal map unit of 1: 10,000 scales. This system will provide evidence of agricultural land owners, concession users and rental contracts for land owned by the state. It will provide a snapshot of data from agricultural crops cultivated on state land and the size of farms (private and state-owned), which is one of the conditions for the successful work of the Paying Agency and the use of the Instrument for Pre-Accession Assistance for Rural Development (IPARD) funds.

STRUCTURE OF LAND AND AVERAGE FARM SIZE

One of the biggest obstacles to the modernisation of agricultural production in the FYROM is the predominance of small and fragmented farms. The agricultural census of 2007 (the previous partial census was carried out in 1994) is the basic source of data on farm structure. The agricultural census is expected to be carried out every 10 years. The average size of family farms is approximately 1.7 ha. The largest group consists of farms smaller than 0.5 ha, characterised by a mixed production structure (SSO, 2008).

Agricultural enterprises which mainly originates from the agricultural and industrial 'combinates', (previously government property) and family farms make up the farm structure in the FYROM. A total of 192,675 agricultural households, 192,378 of which are family farms and 297 of which are agricultural enterprises, were registered with the agricultural census in 2007. According to the census, family farms use 80% of the arable land, and the remainder is state property. Therefore, about 80% of the total cultivated land is owned or leased by 180,000 private farms with an average size of 2.5 to 2.8 ha, fragmented into parcels of size 0.3 to 0.5 ha. About 40% of private farms are smaller household farms with less than 2 ha (further fragmented) that produce mainly for household subsistence, selling surpluses to supplement other sources of income (MAFWE, 2008). In the long run, the existence of small and very fragmented farms, even with medium intensity production levels, impedes modernisation and mechanisation, which inevitably results in lower competitiveness (IPARD, 2009). The remaining 20% of cultivated land is state-owned land rented to 136 agriculture enterprises.

According to SSO (2010a), in 2009, individual agricultural household farms used 61.4% of the

⁶A farmer is defined as a natural or legal person, or a group of natural or legal persons who exercise an agricultural activity where the agricultural activity is the production, rearing or growing of agricultural products, including harvesting, milking, breeding animals and keeping animals for farming purposes, or maintaining the land in good agricultural and environmental condition. A holding (farm) means all the production units managed by a farmer (Petroska Angelovska et al., 2012).

Table 1. Area structure of the FYROM (000 ha).

Indicator	2003	2004	2005	2006	2007	2008	2009
Total area	2,571	2,571	2,571	2,571	2,571	2,571	2,571
Water area	49	49	49	49	49	49	49
Other area	264	310	338	338	504	515	559
Forests	955	948	955	959	942	943	949
Agricultural land	1,303	1,265	1,229	1,225	1,077	1,063	1,014

SSO (2004 to 2009).

Table 2. Agricultural area, 2004-2009 (000 ha).

Indicator	2004	2005	2006	2007	2008	2009
Agricultural land	1,265	1,229	1,225	1,077	1,064	1,014
Arable area	560	546	537	526	521	513
Arable and gardens	461	448	439	431	424	420
Orchards	15	13	13	13	14	14
Vineyards	26	26	25	23	22	21
Meadows	58	59	60	59	61	58
Pastures	704	682	687	550	542	500
Pools, reed and fishpond	1	1	1	1	1	1

SSO (2010a).

of the agricultural area (or 90.5% of cultivable land), while agricultural enterprises and cooperatives used 38.6% of agricultural land (or 9.5% of cultivable land). The agricultural enterprises and cooperatives are the largest users of pastures in state ownership or 68.4%.

The development of commercially oriented farms with a consolidation of land resources is a critical factor in the future development of the sector (Lampietti and Lugg, 2009: 65). The process of land consolidation and its effects will mostly depend on the opportunities to earn non- and off-farm incomes for small farmers who leave the land to larger and more commercial farms. Land market and land leased development, and land consolidation are processes that go together with overall rural development.

According to SSO (2010a) data in 2009, agricultural land (arable areas and pastures) was about 1 million ha or 39.4% of the total area (Table 1). Forests cover 37% and the remaining 23.6% is water area. Almost half of the agricultural land is arable while the other half is pasture land. The largest part of arable land is for cereals and is mostly wet. Analysed by region, in 2009 only pasture land prevailed in 3 regions; Polog (79% pasture), Pelagonia (57% pasture) and the Southwest region (51% pasture). Although, the Pelagonia region has more pasture than arable land, it has most of the arable land and gardens in the country. From the total country area of 2,571,300 ha (25,713 km²), agricultural land in 2009 represented 1,014,000 ha, arable land 513,000 ha, pastures 500,000

ha and 1,000 ha swamps and fish ponds (SOS, 2010a). Total agricultural land is declining (Table 2).

In 2009, out of a total arable land and garden area of 420,000 ha, cultivated arable land and gardens made up 294,000 ha, or 70%. Total uncultivated arable land and gardens made up 126,000 ha. The production structure of arable land and gardens was 180,600, 25,200, 50,400 and 37,800 ha for cereals, industrial crops, vegetables and fodder respectively.

The ownership structure of the total agricultural land in 2009 was; 39% of land under agricultural companies and cooperatives (with pastures) and 61% of land under individual farmers (Table 3). The structure of the total cultivated land by category of use (arable land and gardens, orchards, vineyards and meadows) in 2009 was: 9% under agricultural companies and cooperatives and 91% under individual farmers. In the same year, agricultural companies and cooperatives cultivated 48,682 ha of land: 40,772 ha of arable land and gardens, 1,990 ha of orchards, 4,705 ha of vineyards and 1,215 ha of meadows. Individual family farms cultivated 464,552 ha of land: 379,391 ha of arable land and gardens, 12,276 ha of orchards, 15,901 ha of vineyards and 56,984 ha of meadows.

The nature of the region (mountainous or valley) determines which kind of agricultural land (pastures or arable land) is dominant in the regional structure of agriculture land. In the mountain region, there are important pastures and in the valley region, there are

Table 3. Agricultural area and cultivated land by the categories of use, 2009 (in 000 ha).

Variable	Agricultural area	Cultivated land					
		Total	Arable land and gardens	Orchards	Vineyards	Meadows	Pastures
FYROM	1,014.4	513.2	420.2	14.3	20.6	58.2	500.5
Agricultural companies and cooperatives	391.1	48.7	40.8	2.0	4.7	1.2	342.2
Individual farmers	623.3	464.6	379.4	12.3	15.9	57.0	158.3

SSO (2010b).

Table 4. Structure of arable land and gardens by category of use (in %).

Variable	Structure of arable land and gardens of agricultural enterprises and cooperatives										
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Arable and garden	100	100	100	100	100	100	100	100	100	100	100
Total harvested area	66	64	65	57	61	58	74	79	80	80	90
Cereals	50	53	53	44	48	45	61	65	63	62	69
Industrial crops	9	6	5	5	6	6	6	6	6	9	11
Vegetables	1	1	1	1	1	1	1	1	1	1	1
Fodder	6	6	75	6	6	6	6	7	10	8	9
not cultivated	34	34	35	43	39	42	26	21	20	20	10

Structure of arable land and gardens of individual agricultural holdings											
Arable and garden	100	100	100	100	100	100	100	100	100	100	100
Total harvested area	72	72	68	55	68	68	70	66	66	66	67
Cereals	41	42	40	31	40	40	43	40	40	40	41
Industrial crops	8	7	7	2	6	6	6	5	5	5	5
Vegetables	15	15	14	5	14	14	13	13	13	13	13
Fodder	8	8	6	7	8	8	8	8	8	8	8
not cultivated	28	28	32	44	32	32	30	34	34	34	33

SSO (2010b).

important arable land (SSO, 2009b; Petroska et al., 2012). Farms in the FYROM and the Western Balkan countries (Albania, Bosnia and Serbia) in 2005 are smaller than farms in the Southern (Mediterranean) European countries (Greece, Italy and Spain) in 1970 (Lampietti and Lugg, 2009).

LAND USE AND UNCULTIVATED LAND

In 2009, agricultural companies and cooperatives cultivated 90% of a total 40,772 ha of arable land and gardens in use leaving 10% not cultivated (Table 4). The production structure of cultivated land was: 69% cereals, 11% industrial crops, 1% vegetables and 9% fodder. In the same year, individual farmers cultivated a total of 379,391 ha of arable land and gardens, or 67 and 33% were not cultivated. The production structure of a cultivated area was 41% cereals, 5% industrial crops, 13% vegetables and 8% fodder. In 2009, 14,266 ha of

arable land were given over to orchards; 8,600,067 orchard trees were cultivated, 1,509,998 trees of which were cultivated by agricultural companies and cooperatives and 7,090,069 trees were cultivated by individual farmers (Table 5). This indicates that agricultural companies and cooperatives are less important in fruit production than individual farmers. Sour cherries and peaches are more important in agricultural companies and cooperatives, while all other fruit trees (cherries, apricots, quinces, apples, pears, plums, walnuts, and almonds) predominate in individual farms.

In 2009, the total area used for meadows was 58,199 and 500,468 ha for pastures (Table 6). Most meadows are used by individual agricultural holdings, while a greater percentage of pastures are used by agricultural companies and cooperatives. Interestingly, yields in kg per hectare of meadows and pastures are in both cases higher on individual agricultural holdings.

The FYROM is known as an important producer of grapes and wines. In 2009, from a total 20,606 ha of

Table 5. Number of orchard trees in 2009.

Variable	Number of trees	
	Agricultural companies and cooperatives	Individual farmers
Cherries	5,515	166,291
Sour cherries	835,192	214,081
Apricots	5,518	138,178
Quinces	11	51,471
Apples	282,910	4,114,051
Pears	12,198	383,134
Plums	46,560	1,529,289
Peaches	300,856	295,897
Walnuts	138	166,285
Almonds	21,100	31,392
Total	1,509,998	7,090,069

SSO (2011).

Table 6. Area under meadow and pasture in 2009.

Variable	Meadows			Pastures		
	Harvested area (ha)	Production		Harvested area (ha)	Production	
		Total	kg/ha		Total	kg/ha
FYROM	58,199	96,891	1,665	500,468	319,880	639
Agricultural companies and cooperatives	1,215	1,335	1,099	342,203	205,384	600
Individual agricultural holdings	56,984	95,556	1,677	158,265	114,496	723

SSO (2011).

Table 7. Vineyards area, production of grapes and wine in 2009.

Variable	Vineyards					Processed grapes from own production (t)	Production of wine (1000 L)
	Harvested area (ha)	Number of vines, 000		Grapes production			
		Total	Bearing	Total	kg per wine		
FYROM	19,960	78,013	75,228	253,456	3	78,855	26,261
Agricultural companies and cooperatives	4,423	16,119	14,550	48,110	3	14,606	9,947
Individual agricultural holdings	15,537	61,894	60,678	205,346	3	64,249	16,314

SSO (2011).

arable land under vineyards, 19,960 ha were cultivated, of which 4,423 ha by agricultural companies and cooperatives, and 15,537 ha by individual farmers (Table 7). The latter are also the biggest in terms of the number of vines and grapes in production as well as, in processed grapes and wine production. Uncultivated agricultural land is a major issue in the FYROM. In 2009, out of 420,000 ha of arable land and gardens, 126,000 ha were not cultivated. Other reasons explained why almost one third of arable land and gardens is uncultivated. These reasons are: Firstly, there is a generally low level

of economic activity and development in the country with negative consequences for the agricultural sector. Following the good practice in other countries with a relatively high level of unemployment and risk of poverty, where unemployed people from urban areas have moved to rural areas to start cultivating agricultural land to survive, in the FYROM this is an ongoing process and also one of the objectives of the national program for rural development (Janeska and Bojnec, 2011). Secondly, with the disintegration of the former Yugoslavia, many traditional markets have been lost.

Also, the process of transition to a market economy contributed to the collapse of agricultural combinates. These combinates operated all state land and had a large resource of human capital. During that system, agricultural state farms were oriented more towards production and less towards economic and profit-oriented efficiency, but with large state help through soft-budget constraints and subsidies. In that period, as with the other republics of the former Yugoslavia, the FYROM agricultural land was mostly owned and operated by private family farms. As a result, during the transition to a market economy, it was expected that private farmers would adapt easily to new market conditions and raise productivity through the allocation of resources. However, agriculture shows weaknesses in adapting to increased trade liberalisation and import price competition, declining and abolishing of subsidies, and in adapting to the collapse of the vertically connected former state combinates.

This is as a result of a difficult transition situation in the agrarian sector, which is ongoing. As an additional problem arising from the transition process, there is further agricultural land fragmentation on the one hand, and a lack of strong commercial agricultural incentives on the other. Thirdly, large numbers of small fragmented farms with low productivity are less likely to bring about agricultural development to increase the share of cultivated land without a well-functioning market and horizontal and vertical market integration. Without the support of similar producers' associations, they do not have the capacity to create economies of scale or to invest in new production technologies, innovation activities and new higher value added products. Fourthly, relatively low agricultural productivity is characteristic of a transitional economy with undeveloped market institutions and incomplete reform processes such as privatisation, undeveloped markets, especially, for credits, a poor and incomplete legal system, low investments and inefficient research and development activities and innovations, and a large number of relatively small and subsistence farmers.

All of this impedes investment levels in advanced technologies and determines relatively low crop yields. Fifthly, because of the relatively large number of employees in the agricultural sector, productivity in the FYROM is lower than in South-eastern countries. In 2009, for example, the agricultural sector in the FYROM represented 9.7% of national GDP and secured income and employment for 19% of the national workforce (SOS, 2010b). Most of the rural population depends economically on agriculture and is directly employed in this sector. Without the opportunity to earn income from non-farm activities, they are tied to the land with no possibility that this land be distributed from less to more efficient farms with higher productivity levels and better opportunities for investment. Finally, the agricultural sector of the FYROM should follow the successful

examples of other Southern European countries such as Greece, Italy and Spain, which in the past 20 years have managed to transform their agricultural sectors from small fragmented farms into consolidated, competitive sectors.

Increasing the cultivated land per farm may be initiated through a state policy effort to create conditions for the employment of the rural population in non-farm activities, which will stimulate the consolidation of land and increase productivity. This is an ongoing process supported by the Rural Development Programme of MAFWE. In this context, most efforts are directed towards investments in agricultural holdings to restructure and upgrade standards and diversify the development of rural economic activities, including increasing land cultivation in a more profitable manner, with better functioning of land market and land leasing institutions.

LAND LEASING, LAND RENTAL VALUES AND LAND PRICES

MAFWE has contracted 4,524 concession contracts for a total area of 140,000 ha of state land. In the period of 2006 to 2010, 40 public advertisements were published for the distribution of 37,790 ha of state land and 3,614 concession contracts were signed with agricultural producers. The total amount of concession fees paid to the state over the years 2007 to 2009 is 566,000,000 MKD (MAFWE, 2011). With the purpose of maximising agricultural land usage, the MAFWE permanently announced public advertisements concerning state land lease distribution. State land lease distribution is for a relatively long period (15 to 50 years), which allows for the planning of long-term investments. Besides, public advertisements for state land lease distribution, state land is distributed (up to 10 ha) to farmers with less income (unpublished data, MAFWE, 2011). The total area of state land is about 155,000 ha. Until now, the MAFWE has concluded 4,524 rental contracts for state land of 140,660 ha (Table 8). There is a similar situation with agricultural land given to 'socially insecure' farmers,⁷ who number 514 farmers cultivating 4,700 ha.

According to the MAFWE (2011) action plan, the objective is to distribute all remaining undistributed free state land (up to 10 ha and, after some time, without area restrictions). In March 2011, MAFWE released a public advertisement for the renting of state land (up to 10 ha) for a total area of 4,033 ha. According to this plan,

⁷State land is left to some categories of 'socially insecure' persons: users of social help, according to the law on social protection; unemployed persons, registered at the agency of employment of the FYROM for more than one year; unemployed persons from whom the right to financial assistance was withdrawn after one year; unemployed persons – recipients of financial aid according to the law on employment and insurance; and unemployed persons whose employment was terminated for various reasons. State land is given for this purpose and located in 25 regions in the FYROM, with a contract duration of 5 years, and no rental obligations.

Table 8. State land lease distribution.

Period (year)	Number of contracts	State land area (ha)
2006	411	98,200
2006 to 2010	3,599	37,800
	514*	4,660*
State land not yet rented out	-	14,000
Total	4,524	154,660

*State land rented out to some categories of socially insecure persons. Unpublished data from MAFWE (2011).

Table 9. Rental value of agricultural land.

Land category	Rental price (MKD/ha)
Mountain area	310 – 900
Land category of 5 – 8 class	900
Land category of 4 class	1600

Unpublished data MAFWE (2011).

MAFWE will officially and publicly invite tenders and deliver offers through public advertisements on the official website of MAFWE and in a daily newspaper for the renting of state land for all regions in the FYROM. The state land leasing procedure is conducted by MAFWE, which is collection of offers for a conveying state land for renting. Evaluation of each offer is individually and independently without external influence. Geodesy surveyor statement is used to determine cadastre data on land parcels with exact measures and state cadastre land parcel boundaries. MAFWE has 24,400 ha of state land at its disposal that cannot be advertised because of certain legal matters which are in the process of being resolved.

Agricultural land may be rented for up to 30 years for the cultivation of vineyards, orchards and greenhouses or for rural tourism. For fish ponds, the rental period is 20 years, and for other crops mostly up to 15 years. Land prices and land rental values depend on the land category. The land category is set according to cadastre data. The initial price for renting of state land is 25 euro per ha up to the 4th category (Table 9). For state land from the 5th to 8th category, the initial rental price is 15 euro. Prices are lower in the mountain areas (from 5 to 15 euro).

There are no available official data on the land prices in the FYROM. The average land price in the FYROM is approximately 2,775 euro per ha (Lampietti and Lugg (2009). But the price of agricultural land in the FYROM primarily depends on the region and the quality of the land.⁸ The average land price in the FYROM is higher

⁸For example, agricultural land in the Strumica and Gevgelija regions is more expensive than agricultural land in the region of Tikves (one decar or 1,000 m² in Gevgelija is 8,000 EUR and in Kavadarci 800 EUR). If it is possible to

than in Bulgaria, Hungary, and Poland or in Bosnia and Herzegovina, but lower than in Albania, Serbia, Croatia, and particularly in the old EU-15 countries (Lampietti and Lugg, 2009; Petroska et al., 2012). Land prices are determined by market conditions of supply and demand for agricultural land. Labour price as a potential demand factor can only partially explain agricultural land prices. Labour costs in the FYROM are higher than in Albania, Bulgaria and Serbia, but lower than in the other countries studied.

ECONOMIC FARMING STRUCTURES

In the FYROM, there is no consistent farm income data available at the micro level. It is expected that this problem will be overcome with the setting up of Farm Accountancy Data Network (FADN) operational system. Thus, a functional FADN will contribute to a better informational basis for the formulation of a more adequate agricultural policy, and thereafter, the validation of results from appropriate policy measures.

The size of Macedonian farms in the period 2002 to 2004 was interpreted in the EU context as 5.9 European Size Units (ESU, where 1 ESU = 1,200 euro). In comparison with the EU-25 average (32.7 ESU), this is five times smaller. The gross income of Macedonian farms was 5,500 euro per farm, which is about 15% of the average gross farm income in the EU for the same period. Yet, the Macedonian family farm income amounted to 4,100 euro, which is four times lower than European average (Martinovska et al., 2009). In an

urbanise agricultural land then the land price is higher, depending on demand conditions.

Table 10. Agricultural income indicators for the FYROM (in million MKD).

Indicator	2008	2009
Gross value added by basic prices	37,981	37,283
Depreciation of fix assets	3,238	3,194
Net value added by basic prices	34,743	34,089
Net business income of individual farmers	32,665	31,603
Entrepreneur income	32,353	31,216

SSO (2009a).

attempt to analyse economic farm structure, we briefly presented economic farm structure data according to the Crop budget survey (World Bank, 2007). Data are for the region of Tikves. The average gross margin in 2004 was 85,287 MKD/ha, and in 2006, was increased to 147,074 MKD/ha. Net incomes on the farm in 2004 were 48,244 MKD/ha and in 2006 were 111,357 MKD/ha. The main reasons for this are: around 40 to 50% lower irrigation cost, and increased yields as a result of improved irrigation. In 2006, the gross margin for vineyard farms was between 85,287 and 147,074 MKD/ha (World Bank, 2007; Petroska et al., 2012). According to the economic accounts in agriculture data published by SSO (2009a), entrepreneurial agricultural income in 2009 showed a slight decline compared to the previous year (Table 10).

Tobacco is a very significant and labour-intensive industrial crop in the FYROM in those areas where the agricultural production conditions are constrained. It is one of the major export-oriented products. Most tobacco production takes place in the Pelagonija and South-eastern region. Of the total areas under industrial crops, 79% grow tobacco. The total number of agricultural households growing tobacco varies from 44,822 (1999) up to 29,230 (2006) or an average of about 37,000 households. The production of tobacco represents the main source of income for this population, bearing in mind the low social and educational status of the active population in the specific production rural areas. After tobacco, wine is the second most important export-oriented agricultural product. The vineyards make up about 5% of the total cultivable agricultural land, including about 30 ha nurseries for the production of wine grape rootstocks. The total number of vineyards decreased by 14% in the period from 2004 to 2007, or from 24,777 ha in 2004 to 21,312 ha in 2007. Around 25,000 farms were occupied with viticulture, from which 70% are individual farmers and 30% are agricultural companies. The average yields are 9.2 t/ha.

CONCLUSIONS

Land markets in the FYROM are mostly characterised by family farm structures, while the remaining state land is largely used by agricultural enterprises. Land leasing is gaining importance, but due to underdeveloped

institutional structures for small-scale farming, most of the state land is either rented by agricultural enterprises or remains uncultivated. Uncultivated land represents an important country-specific issue on land market, agriculture and rural areas in the FYROM. These findings on the shortcomings of agricultural, land and farm size structures are consistent with those of the MAFWE (2007), which defined the key obstacles to agricultural and rural development in the FYROM on the production and supply-side level as; prevailing small and fragmented farms with high unit costs and inefficient production, old production technologies with low crops yields and low product quality, low vertical integration with a lack of farmers' associations/cooperatives, weak political influences and a weak bargaining and contractual-sale position, and low vertical farmer-processor integration.

The unorganised production methods and underdeveloped marketing institutions result in large supply-side market oscillations. These factors lead to a temporary over-supply with big, pricing differentials/changes with inadequate on-time securing of necessary raw materials, their unstable quantity and quality, low education level/training and conservative approaches to changes, weak extension services and weak market orientation, low farm investment, low innovation rate, a lack of strategic production integration and organisation, a lack of necessary product quality international standards, small size of processing industry and its low scale economy, old processing technologies with low productivity, huge costs, and low quality of products, low rate of adapted quality and food safety standards and management practices and ecology standards.

The MAFWE (2007) described the problems of the rural economy as; low living standards (migration of younger and more educated farmers, predominance of elderly people, low education levels, and high unemployment among the rural population). There is also a lack of alternative (non-farm) employment opportunities. Agriculture is the most common and often the only source of income, but salaries are low and there is a prevalence and high risk of poverty.

Finally, among its recommendations, the MAFWE (2007) highlights the importance of increasing agricultural competitiveness, which can be achieved through improving the use of production key factors such as; land, labour and capital by; first, increasing farm size through

properly designed and synchronised policies, such as an appropriate taxation system for land consolidation and the strengthening of land markets, privatisation/long-term rental of state land and land consolidation programs. Secondly, increasing labour productivity by introducing and accepting better crop production techniques, and increasing cattle breeding by giving subsidies only to registered farmers that use certificated seed or improved cattle breeds, using good management practices, investment support for mechanisation, training, farm infrastructure and equipment. Thirdly, increasing capital availability through better commercial credit, establishing carefully prepared credit programs and public support for investment. As a considerable percentage of the land is uncultivated, this affects agricultural production, land market and land leasing values. Due to underdeveloped institutional frameworks and market institutions in support of small-scale farms, a large proportion of state land is rented out by agricultural enterprises or is uncultivated. These are challenging issues for both agricultural policy-making and rural development in the FYROM.

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REFERENCES

- Acrotass-Consortium (2006). Study on the State of Agriculture in Five Applicant Countries: The Former Yugoslav Republic of Macedonia. Consultancy Report for the European Commission, Brussels.
- Angelova B, Bojnec Š (2011). Developments in the agricultural and rural capital market of the Former Yugoslav Republic of Macedonia. Factor Markets Working Paper No. 9, Centre for European Policy Studies, Brussels.
- Arnott RJ, Lewis FD (1979). The transition of land to urban use. *J. Polit. Econ.*, 87: 161-170.
- Bojnec Š, Swinnen JFM (1997). Agricultural Privatisation and Farm Restructuring in Slovenia. In: Swinnen JFM, Buckwell A, Mathijs E (eds) *Agricultural Privatisation, Land Reform and Farm Restructuring in Central and Eastern Europe*. Aldershot: Ashgate, pp. 281-310.
- Bojnec Š (2011). Land Markets in the EU Candidate Countries of Croatia, Former Yugoslav Republic of Macedonia and Turkey. Factor Markets Working Paper No. 1, Centre for European Policy Studies, Brussels.
- Cavaillès J, Wavresky P (2003). Urban influences on periurban farmland prices. *Eur. Rev. Agric. Econ.*, 30(3): 333-357.
- Csaki C, Lerman Z (2000). Structural change in the farming sectors in Central and Eastern Europe. Lessons for EU accession", Second World Bank/FAO Workshop, 27-29 June 1999, World Bank Technical Paper No. 465. Europe and Central Asia Environmentally and Socially Sustainable Development Series, Washington, D.C.
- IPARD (2009). Instrument for Pre-Accession Assistance for Rural Development. Skopje (www.mzsv.gov.mk).
- Janeska V, Bojnec Š (2011). Rural labour market developments in the Former Yugoslav Republic of Macedonia. Factor Markets Working Paper No. 5, Centre for European Policy Studies, Brussels.
- King DA, Sinden JA (1994). Price formation in farmland markets. *Land Econ.*, 70(1):38-52.
- Lampietti JA, Lugg DG (2009). *The Changing Face of Rural Space*. World Bank, Washington, D.C.
- Latruffe L, Le Mouël C (2006a). Description of agricultural land market functioning in partner countries. Deliverable 9 of the IDEMA project, INRA-ESR, Rennes.
- Latruffe L, Le Mouël C (2006b). How and to what extent support to agriculture affect farmland markets and prices: A literature review. Report for the OECD, INRA, Rennes.
- Latruffe L, Le Mouël C (2007). Capitalisation of government support in agricultural land prices: What do we know? INRA Working Paper No. 07-04, Rennes.
- Le Mouël C (2005). Agricultural land markets: Main issues in the recent literature. The impact of decoupling and modulation in the enlarged Union: A sectoral and farm level assessment. Working Paper No. 2 of the IDEMA project, Partner 6 INRA-ESR, Rennes.
- Lerman Z, Csaki C, Feder G (2002). Land policies and evolving farm structures in transition countries. Policy Research Working Paper No. 2794, World Bank, Washington, D.C.
- MAFWE (2007). National Strategy for Agriculture and Rural Development 2007-2013. Skopje: Ministry of Agriculture, Forestry and Water Economy.
- MAFWE (2008). Annual Agriculture Report: Agriculture Sector Complementary Information; Statistical Tables. Skopje: Ministry of Agriculture, Forestry and Water Economy.
- MAFWE (2011). Sector for Land Policy. Skopje: Ministry of Agriculture, Forestry and Water Economy" (unpublished data).
- Melmed-Sanjak J, Bloch P, Hanson R (1998). Project for the Analysis of Land Tenure and Agriculture Productivity in the Former Yugoslav Republic of Macedonia. Land Tenure Center, University of Wisconsin, Madison.
- Martinovska SA, Dimitrievski D, Erjavec E (2009). Cost and incomes of family farms in Macedonia in a FADN compatible accounting and information system. *Agric. Trop. Subtrop.*, 41(3):126-133.
- Noev N, Swinnen JFM, Vranken L (2003). The Development of Land Rental Markets in Bulgaria and the Former Yugoslav Republic of Macedonia. FAO Working Paper, Rome.
- Petroska AN, Ackovska M, Bojnec Š (2012). Agricultural land markets and land leasing of the Former Yugoslav Republic of Macedonia. Factor Markets Working Paper No. 11, Centre for European Policy Studies, Brussels.
- SSO (2004-2009). Statistical Yearbook of the Republic of Macedonia (for the years 2004-2009). Skopje: State Statistical Office of the Republic of Macedonia.
- SSO (2008). Census of Agriculture 2007, Basic statistical data for IAH and entities in the Republic of Macedonia. Skopje: State Statistical Office of the Republic of Macedonia.
- SSO (2009a). Economical Accounts in Agriculture, 2009. Skopje: State Statistical Office of the Republic of Macedonia.
- SSO (2009b). Regions in the Republic of Macedonia. Skopje: State Statistical Office of the Republic of Macedonia.
- SSO (2010a). Agricultural Area by Category of Users 2009. Skopje: State Statistical Office of the Republic of Macedonia.
- SSO (2010b). Statistical Overview: Agriculture. Skopje: State Statistical Office of the Republic of Macedonia.
- SSO (2011). State Statistical Office of the Republic of Macedonia, Skopje (www.stat.gov.mk).
- Swinnen JFM, Buckwell A, Mathijs E (1997). *Agricultural privatization, land reform and farm restructuring in Central and Eastern Europe*. Aldershot: Ashgate.
- Swinnen JFM, Ciaian P, Kancs d'A (2010). *EU Land Markets and the Common Agricultural Policy*. Centre for European Policy Studies, Brussels.
- Swinnen JFM, Van Herck K (2009). *Agricultural Aspects of Accession to the European Union: Lessons from the EU New Member States and implications for the Former Yugoslav Republic of Macedonia*. Report prepared for UNDP, LICOS Centre for institutions and Economic Performance, University of Leuven, Leuven and Centre for European Policy Studies, Brussels.
- Vural H, Fidan H (2009). Land marketing and hedonic price model in Turkish markets: Case study of Karacabey district of Bursa province. *Afr. J. Agric. Res.*, 4(2): 71-75.

World Bank (2007). Macedonia Irrigation Rehabilitation and Restructuring Project, Crop Budget Survey 2004-2006 Tikves, Bregalnica and Polog Irrigation Systems. World Bank, Washington, D.C./Skopje.

World Bank (2011). Agriculture Strengthening and Accession Project Unit Macedonia. Technical Mission March 2011. World Bank, Washington, D.C./Skopje.

Yalcin G (2011). Legal infrastructure of agricultural areas in the view of cadastre and ownership in Turkey and sustainable development. Afr. J. Agric. Res., 6(33): 6750-6754.