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Current trends in the transhumant sheep and goat sector in Greece

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Abstract. The transhumant sheep and goat farming system is mainly characterized by the sustainable use of pastures for animal nutrition, low fixed capital endowments and intensive use of human labor. The system is typical for Greece, although it exhibits a constant decline during the last 30 years. The purpose of this study is to provide a thorough presentation of the current situation of the transhumant sheep and goat farming sector in Greece. Through a survey of all relevant public services, data concerning the number of transhumant farms and animals as well as their movements in 2011 are presented. The survey reveals that transhumant flocks are present in the lowlands of most of the regions in Greece and move towards mountainous rangelands of less favored areas (particularly in Macedonia and Epirus). The distances of the movements vary considerably and can be classified as small (within the boundaries of Prefectures), relatively large (mainly within the boundaries of Regions) and large (mainly intra-regional movements).

Keywords. Transhumance – Greece – Movements of transhumant flocks – Sheep and goat farming.

La dynamique et les tendances courantes du secteur ovin et caprin transhumant en Grèce

Résumé. *Le système transhumant ovin et caprin est principalement caractérisé par l'utilisation durable de pâturages et l'utilisation intensive du travail humaine. Il s'agit bien d'un systéme typique pour la Grèce, quoique on constate une diminution pendand les 30 derniers ans. L'objectif de cette étude est la présentation détaillée du secteur transhumant en Grèce. A travers d'une enquête de tous les services publiques relevants, le nombre d'élevages transhumants caprins et ovins, le nombre d'animaux et leurs déplacements principales pour 2011 sont présentés. L'enquête révèle que des élevages transhumants se trouvent presque toutes dans des differentes plaines des régions grecques, et qu'ils se déplacent pendant l'été vers les parcours des montagnes des régions moins favorisées (particulièrement en Macedoine et dans l'Epire). Les distances des déplacements sont classifiées en petites (dans les Prefectures), relativement larges (dans le cadre des régions) et larges (parmi des régions).*

Mots-clés. *Transhumance – Grèce – Déplacements de troupeaux transhumants – Élevages ovins et caprins.*

I – Introduction

Transhumant sheep and goat farming is an extensive animal breeding system, which is typical in Greece. Although historical evidence shows that the rural economy in Greece has been linked to the functionality of this system for centuries, the objective of raising productivity in the sector and changes in the structures of rural societies led to a shift to intensive animal breeding systems in the country, thus seriously constraining the social, economic, environmental and cultural role that transhumance played (Tzanopoulos *et al.,* 2011). Nowadays, tranhumance points towards animal farms which use land and inputs efficiently, in order to produce high quality edible products, which cover for emerging issues among consumers, such as food

safety, health and animal welfare, and simultaneously minimize threats on the environment and safeguard resources for the future. Transhumance also constitutes a particularly suitable activity for the development of less-favored areas (Cournut and Dedieu, 2004; Dubeuf *et al*., 2004; Holeckek *et al*., 2004) and creates cultural linkages among winter and summer domiciles.

The purpose of this study is to provide insights of the dynamics of the transhumant sheep and goat sector in Greece, through the results of a survey of the records kept by veterinary services throughout the country. Based on the collected data, the main structural characteristics of the sector, the winter and summer domiciles of flocks and their main movements are presented.

II – Materials and methods

The licenses issued by local veterinary services for transhumant farmers in the year 2011, without which flock movements are prohibited, were gathered and analyzed in order to account for the number of transhumant farms, the number of reared animals and their main movements. The Greek Payment and Control Agency for Guidance and Guarantee Community Aid (OPEKEPE) also keeps yearly records of transhumant sheep and goat flocks, however in several cases the data were incomplete or did not account for all transhumant farms. The lack of a consistent database of transhumant flocks does not currently permit the examination of the timely development of the sector or comparisons between transhumant and other sheep and goat breeding systems. Note that the true number of transhumant farms is smaller than what is revealed through the descriptive analysis presented here (approximately 30%), due to the fact that almost all members of farm families are declared as heads of farms, although, in practice, their flocks are under the common management of the farm family.

III – Results and discussion

Table 1 shows the main structural characteristics of the transhumant sheep and goat sector in Greece. In 2011, there were 4252 transhumant sheep and goat farms in the country, which rear 1.14 mil. animals or approximately 7,5% of the total sheep and goat population in Greece. Their vast majority is situated in Thessaly (30.1%) and Central Greece (19.8%). These two regions account for more than half of transhumant sheep and goats (51.6%). The mean size of transhumant flocks in the northern part of the country (Macedonia, Thessaly) is considerably higher than the respective flock sizes in southern regions (Central Greece and Peloponnese).

Table 1. Structural characteristics of transhumant sheep-goat farms in Greece (2011) (winter domiciles)

	Transhumant farms (number)	Reared animals (number)	Mean farm size (number of animals)	Classification of farms					
				Reared animals					
				<100	101-200	201-300	301-400	401-500	>500
Western Macedonia	25	8741	349.6	1	3	5	6	7	3
Central Macedonia	249	72371	290.6	18	40	76	77	21	17
Eastern Mac.-Thrace	150	50220	334.8	14	18	32	38	26	22
Thessaly	1311	401366	306.2	182	222	269	320	160	158
Epirus	451	103806	230.2	102	142	98	60	23	26
Central Greece	844	188659	223.5	148	286	197	151	37	25
Peloponnese	608	143515	236.0	77	219	175	71	41	25
Crete	614	173888	283.2	134	134	128	112	57	49
TOTAL	4252	1142566	268.7	676	1064	980	835	372	325

An examination of the geographical dispersion of the winter domiciles of transhumant farms (Table 2) reveals considerable differences in the composition of transhumant flocks between Regions. Almost 42.5% of the transhumant farms under consideration are engaged in sheep rearing; these farms prevail mainly in Central Greece and Thessaly, where they account for 53.9% and 47.5% respectively. On the other hand, goat farms are abundant in Central Macedonia (41.8% of transhumant farms in the Region) and Peloponnese (35.2%). Sheep and goat transhumant farms are more typical for Epirus (50.3% of transhumant farms in the Region) and Crete (45.4%). On-field experience and discussions with local veterinary services revealed that most of these flocks consist mainly of sheep; nonetheless, it is not yet possible to make accurate calculations using the available data.

Table 2. Winter domiciles of Greek sheep-goat transhumant farms (2011)

	Transhumant farms (number)	Sheep		Goats		Sheep and goats	
		Farms	Animals (number)	Farms	Animals (number)	Farms	Animals (number)
Western Macedonia	25	6	1951	14	4459	5	2331
Central Macedonia	249	81	20482	104	32425	64	19464
Eastern Macedonia-Thrace	150	13	2466	55	17305	82	30449
Thessaly	1311	623	190002	293	84383	395	126981
Epirus	451	159	32458	65	15076	227	56272
Central Greece	844	455	92395	85	20112	304	76152
Peloponnese	608	216	39421	214	53869	178	50225
Crete	614	254	56960	81	14564	279	102364
TOTAL	4252	1807	436135	911	242193	1534	464238

Table 3 presents the summer domiciles of transhumant flocks in the country. Apart from Crete Island, where all movements take place on the island, Epirus is the region which accommodates the majority of flocks in the summer (16.9%), followed by Western Macedonia (16.6%).

Table 3. Summer domiciles of Greek sheep-goat transhumant farms (2011)

	Transhumant farms (number)	Sheep		Goats		Sheep and goats	
		Farms	Animals (number)	Farms	Animals (number)	Farms	Animals (number)
Western Macedonia	708	319	111331	244	70661	145	59739
Central Macedonia	234	93	23533	78	22719	63	18318
Eastern Macedonia-Thrace	157	13	2466	62	20975	82	30449
Thessaly	545	223	51284	87	25081	235	59636
Epirus	717	341	82942	70	16644	306	85669
Central Greece	639	330	65302	72	16640	237	56145
Peloponnese	638	234	42317	217	54909	187	51918
Crete	614	254	56960	81	14564	279	102364
TOTAL	4252	1807	436135	911	242193	1534	464238

An examination of Table 4 yields information concerning the main movements of transhumant flocks. Small within-Prefecture movements prevail in the summer, as they stand for 44.7% of all movements; they can be detected in almost all Greek Prefectures. Movements which do not exceed 50 km concern neighbouring Prefectures of Thrace (from Rodope to Xanthi) and Central

Greece (from Aitoloakarnania to Fokida and Evritania). The third category includes movements of 51-100 km, particularly from Thesprotia to Ioannina (Epirus), from Aitoloakarnania and Fthiotida to Evritania (Central Greece) and Arta (Epirus) and movements from lowlands to semi-mountainous areas of the island of Crete. Movements from 101-200 km occur from the lowlands of Larisa (Thessaly) to Grevena (Western Macedonia) and Ioannina, from Aitoloakarnania to Ioannina as well as movements from Preveza to Ioannina in Epirus. Finally, titneraries over 200km include those from Thessaly to the northern parts of Western Macedonia and Ioannina, as well as from Fthiotida to Trikala (Thessaly) and from Thesprotia to Western Macedonia.

Table 4. Categorization of movements of transhumant flocks according to distance in 2011. Number of flocks

Winter domiciles	Range of movements					Total
	Small within-Prefecture	<50 km	51-100 km	101-200 km	>200 km	
Western Macedonia	17	0	8	0	0	25
Central Macedonia	187	17	10	27	8	249
Eastern Macedonia-Thrace	115	35	0	0	0	150
Thessaly	342	6	215	513	235	1311
Epirus	210	31	125	65	20	451
Central Greece	227	220	149	199	49	844
Peloponnese	405	44	145	11	3	608
Crete	396	2	186	30	0	614
TOTAL	1899	355	838	845	315	4252

IV – Conclusions

The transhumant sheep and goat farming system in Greece is a dynamic animal breeding activity. The descriptive analysis of the current situation in the sector, presented above, illustrates its dynamics and reveals its potential for the future. Nonetheless, in order to fully comprehend its current role in the Greek rural economy and to formulate integrated strategies for the sector, a multi-dimensional approach is necessary. This would include the examination of transhumant farms from a social and economic perspective, by combining the results with an examination of the ecological effects of transhumant flock movements, especially on rangelands in winter and summer domiciles, and of the quality of relevant milk and dairy products.

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