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SUMMARY

This study presents a classification of all the agricultural holdings of Cyprus into farm types by agricultural zone according to the EEC typology. The farm type into which each farm was classified was determined by the level of farm income produced by each of the various farming activities involved. In order to be classified into a farm type, a farm should create income higher than £250 and two thirds of it should be produced by one or two farm enterprises. Differences in natural resources among the four agricultural zones determined the farm types and the frequency of their occurrence. Overall, the most prevalent farm type was vines, which included 12% of the farms. Olives, fruits, citrus, vines and trees, vegetables and sheep were important farm types. Vines, citrus and vegetables prevailed in the Coastal zone. In the Dryland zone the most important farm types were related to rainfed agriculture and mixed crop-livestock farming such as olives, cereals, sheep, combination of vines and goats and, where irrigation could be applied citrus. Farms in the vine zone involved mainly vine monoculture (52.4%) and to a lesser extent combination of vines with trees or small ruminants. About one third of the farms in the Mountain zone were classified into the fruit, vines and trees and fruit and vegetables farm types, which were the most frequent farm types in this zone.

ΠΕΡΙΛΗΨΗ

Με την παρούσα μελέτη οι γεωργικές εκμεταλλεύσεις της Κύπρου κατατάσσονται σε διάφορους τύπους κατά γεωργο-οικονομική ζώνη και σύμφωνα με την τυπολογία των γεωργικών εκμεταλλεύσεων που χρησιμοποιείται στις χώρες της ΕΟΚ. Ο Τύπος της εκμετάλλευσης καθορίστηκε με βάση το ποσοστό του ακαθάριστου γεωργικού εισοδήματος με το οποίο συμβάλλει κάθε ένας από τους διάφορους παραγωγικούς κλάδους της εκμετάλλευσης στη διαμόρφωση του ολικού γεωργικού εισοδήματος. Για την κατάταξη μιας εκμετάλλευσης σε τύπο χρησιμοποιήθηκε ως κριτήριο το γεωργικό εισόδημα το οποίο έπρεπε να υπερβαίνει τις £250 και ταυτόχρονα 2/3 απ'αυτό να προέρχονται από μια ή δυό (1/3 η καθεμιά) παραγωγικές κατευθύνσεις. Η συχνότητα με την οποία παρατηρείται ένας τύπος απορρέει από τις διαφορές που παρατηρούνται αναφορικά με τις εδαφοκλιματικές συνθήκες και τους παραγωγικούς πόρους κάθε περιοχής. Παγκύπρια, ο πιο συχνά εμφανιζόμενος τύπος γεωργικής εκμετάλλευσης είναι ο αμπελουργικός, ο οποίος περιλαμβάνει 12% των εκμεταλλεύσεων. Οι ελαιοκομικός, εσπεριδοκαλλιεργητικός, φρουτοπαραγωγικός, λαχανοκομικός και προβατοτροφικός καθώς και ο συνδυασμός αμπελουργικού-δενδροκομικού είναι μερικοί σημαντικοί τύποι εκμεταλλεύσεων. Για την παραλιακή ζώνη οι πιο σημαντικοί τύποι ήταν ο αμπελουργικός, ο εσπεριδοκαλλιεργητικός και ο λαχανοκομικός, που είναι και οι πιο απαιτητικοί σε νερό. Αντίθετα, στη ξηρική ζώνη πιο συχνά εμφανίζονται τύποι ξηρικών καλλιεργειών όπως οι ελαιοκομικός, σιτηροπαραγωγικός, προβατοτροφικός, αμπελουργικός-αιγοτροφικός, καθώς επίσης και ο εσπεριδοκαλλιεργητικός, στις περιοχές όπου είναι δυνατή η άρδευση. Στην ζώνη των αμπελιών κυριαρχούσε ο αμπελουργικός τύπος στον οποίο περιλήφθηκε το 52% των εκμεταλλεύσεων. Σε μικρότερη έκταση εμφανίζονταν οι τύποι που συνδυάζουν καλλιέργεια αμπελιών με δέντρα ή με εκτροφή μικρών μηρυκαστικών. Στην ορεινή ζώνη πιο σημαντικοί ήταν τρεις τύποι που περιλάμβαναν το 1/3 περίπου των εκμεταλλεύσεων. Οι τύποι αυτοί ήταν οι φρουτοπαραγωγικός, αμπελουργικός-δενδροκομικός και φρουτοπαραγωγικός-λαχανοκομικός.

INTRODUCTION

The present study was prompted by the recent application of Cyprus (July, 1990) to become a full member of the European Economic Community (EEC). The following analysis is based on the Commission's decision of 7 April, 1978, which established a Community typology for agricultural holdings (Anonymous,1978) .

In Cyprus, there is a large number of agricultural holdings of many different types and the analysis of their situation necessitates the use of a certain typology (Anonymous, 1978).

This typology, as used by the EEC, is based on economic criteria regarding the two basic characteristics of the farm, i.e. type and size. Gross margin was adopted as the most suitable concept for the purpose of classification of farms.

It is possible that the use of this typology to form various groups of agricultural holdings will be combined or broken down according to the analytical requirements and at the same time to preserve the necessary coherence between different levels of classification. This typology should also be capable of being modified, where necessary, in the light of experience and in response to changes in information needs.

The EEC's report, Economic Situation of Agricultural holdings in the EEC (Anonymous, 1988), is a product of The Farm Accountancy Data Network that operates throughout the European Community. It is, therefore, imperative to introduce the above system in order to be able to provide comparable information about the situation of our farmers to the European Community.

METHODOLOGY

To classify a particular farm into the appropriate farm type the concept of Standard Gross Margin (SGM) was used. SGM is a measure of the value of gross output less variable costs /ha, in the case of crops, or per productive animal in the case of livestock. This measure was standardized for each zone and product (Table 1). In this study the SGM has been derived from the average gross margins for the year 1988.

The major sources of micro-level data used for this analysis were a) the latest agricultural census (1985), b) the agricultural statistics, c) the norm input-output data and d) other costs and returns studies.

Agricultural census

The agricultural census is carried out by the Department of Statistics and Research of the Ministry of Finance (Department of Statistics and Research, 1986). The objective of the census is to provide information on the number and structure of agricultural holdings in Cyprus to be used for planning purposes and policy analysis. The census provides also the frame and benchmark data for agricultural surveys. Such data refer to land tenure, land use, livestock, agricultural machinery and equipment, employment and farm household.

The agricultural census involves a complete enumeration of all holders of agricultural land and all livestock owners, including nurseries and greenhouses. The unit of enumeration is the holding, which is defined as land wholly or partly used for agricultural production. In the case of landless livestock units the unit of enumeration was determined by the ownership of at least a minimum number of animals (i.e. 5 cattle or sows, 10 sheep/goats, etc.).

Agricultural statistics

Agricultural statistics are published annually by the Department of Statistics and Research. They provide information on the value added, crop and livestock production, land use, ancillary production, inputs, fishing, forestry, hunting, employment, exports, utilization of output and greenhouses. The main data source is the agricultural survey which is conducted annually on the basis of a sample drawn from the agricultural census, but various other sources are also used. The survey normally uses a sample of 2,000 farm holders (Department of Statistics and Research, 1989).

Norm Input-Output data and other costs and returns studies

These studies are based on agroeconomic surveys and other sources of information (Papachristodoulou *et al.*, 1987). The only item used in the present analysis was gross margin as % of gross revenue. By applying it to the results of agricultural statistics it was possible to arrive at the standard gross margin by crop and livestock for the country as a whole. SGM was further differentiated by zone using as weight the area and production of each crop by zone (Appendix Table 1).

Gross margin per ha or per livestock unit was applied to each holding to produce up to date information on the agricultural income per holding.

Table 1. Standard gross margins by crop, livestock and zone, 1988

Crop/Livestock	Zone			
	Coastal	Dryland	Vines	Mountain
CROPS (£/ha)				
Cereals	128	127	141	117
Food legumes	714	689	431	813
Industrial crops	1097	1097	1097	1097
Grain fodders	88	94	95	71
Green fodders	204	210	208	179
Potatoes	1650	1430	900	1000
Roots & tubers	5500	5500	5500	5500
Vegetables in				
Greenhouse	26000	26000	26000	26000
Tunnel	6300	6300	6300	6300
Open	4300	4080	3250	4170
Flowers in				
Greenhouse	46400	46400	46400	46400
Open	25000	25000	25000	25000
Citrus	1570	1270	575	875
Fruit	2500	2500	2500	2500
Nuts	240	240	420	715
Grapes	900	485	447	340
Olives	1500	1500	1500	1500
Carobs	450	450	450	450
LIVESTOCK (£/animal)				
Cattle	200	200	200	200
Sheep & goats	50	50	50	50
Pigs	140	140	140	140
Poultry	1.75	1.75	1.75	1.75
OFF-FARM EMPLOYMENT (£/ WEEK)	85	80	75	75

Classification of farms

The European Community (EC) typology identifies 17 principal types of farming (McClintock, 1988) which are further broken down into 50 particular types of farming. The types of farming are defined in terms of the relative importance of the different enterprises on the farm. Relative importance is itself quantified as a proportion of total farm SGM. The rules followed in classifying a farm according to the community typology, which apply also in this study, were as follows:

a) Farms with SGM less than £250 were excluded from classification.

b) If a crop or livestock enterprise contributed more than 2/3 of the total farm SGM, the particular farm was classified into the respective crop or livestock farm type.

c) If each of any two crop/livestock enterprises contributed 1/3 or more of the farm SGM, the particular farm was classified into the respective mixed crop/livestock farm type.

d) Farms with combinations of crop/livestock enterprises not fulfilling the above conditions were grouped together as "unclassified".

RESULTS

The area of Cyprus was divided into 24 agroeconomic regions, which reflect the agroclimatic diversity of the country and its agriculture. These regions are grouped into four zones, namely, the coastal zone, which is favoured by relatively flat land, fertile soils, availability of irrigation water and a favourable microclimate, the dryland zone characterized by lowland and semi-mountainous terraine, rainfed agriculture and livestock rearing, the vines zone, which is generally mountainous with poor calcareous soils and include the vine heartland and the mountain zone, which is characterized by rugged rettain but good volcanic soils and constitutes the major fruit producing area. As shown in Table 2 the farming types by zone were:

Table 2. Classification of agricultural holdings by type of farming and zone, 1985

Principal types	Particular types	Coastal (%)	Dryland (%)	Vines (%)	Mountain (%)	Total No	Total (%)
Field crops							
(a) Cereals	Cereals	2.5	3.6	-	n	1106	2.3
	Green folders	0.2	0.4	-	-	122	0.3
(b) Field crops,	Legumes	0.3	0.4	0.1	0.1	139	0.3
other	Industrial	1.5	n	n	-	262	0.5
	Potatoes	5.6	0.5	-	-	1016	2.1
	Root crops	0.3	n	-	-	56	0.1
Horticulture							
	Vegetables	6.2	2.0	0.1	1.5	1520	3.2
	Flowers	0.1	0.1	-	n	36	0.1
Permanent crops							
(a) Vineyards	Vines	12.1	3.2	52.4	3.4	5743	12.0
(b) Fruit, other	Fruits	2.8	2.9	0.8	20.6	2351	4.9
	Citrus	7.6	4.2	0.1	0.3	2119	4.4
	Olives	1.4	10.8	0.7	1.8	2514	5.2
	Nuts	0.2	0.2	0.1	1.5	174	0.4
	Carobs	0.6	0.7	0.1	n	244	0.5
Ruminants							
(a) Dairing	Dairy cows	0.9	1.3	-	0.1	404	0.8
(b) Small	Sheep	4.5	3.5	0.6	0.2	1482	3.1
ruminants	Goats	1.9	3.1	1.8	0.8	1082	2.2
	Sheep & goats	1.5	1.9	1.2	0.1	691	1.4
Pigs & Poultry							
	Pigs	0.2	0.7	n	n	171	0.4
	Poultry	0.2	0.4	n	n	130	0.3
Mixed cropping							
(a) Horticulture,	Veg. & citrus	0.6	0.4	-	n	178	0.4
permanent	Veg. & fruits	0.2	0.1	0.1	2.6	217	0.4
crops	Veg. & trees*	n	0.2	0.1	0.2	57	0.1
	Field crops & rainfed trees	0.3	1.4	0.1	0.1	320	0.7
(b) Mixed crops,	Veg. & crops+	0.7	0.8	-	n	275	0.6
other	Vines & crops	0.2	0.2	0.7	-	112	0.2
	Vines & trees	2.2	1.6	9.1	7.6	1668	3.5
Mixed Livestock							
	Ruminants	0.1	0.1	-	-	27	0.1
Crops/Livestock							
	Field crops & ruminants	0.9	1.7	0.3	n	503	1.0
	Vines & rum.	0.3	0.2	3.6	0.2	306	0.6
Holdings with income less than £250		27.0	34.3	11.3	18.4	13018	27.1
Unclassified		16.9	19. 1	16.7	40.4	10001	20.8
TOTAL (Number)		16441	19823	5546	6233	48043	

n=negligible; *=rainfed trees ; +=field crops.

Coastal zone

Five major farm types include about 36% of the farms in the coastal zone. Ranking the farm types in order of significance according to the relative frequency distribution of farms the farm type vines comes first (12.1%). Farms in this type include mainly early table grapes which require irrigation. Second important farm type is citrus (7.6%) as citrus crops need to be cultivated in irrigated and frost fee areas. Vegetables (other

than potatoes), potatoes, and sheep farming types follow with 6.2%, 5.6% and 4.5% of the farms, respectively.

Dryland zone

One third of the farms in the dryland zone are included in 8 farm types. Most important is the farm type olives followed by citrus, cereals, sheep, vines and goats. These activities are dominant among the holdings of this zone. It should be noted that dairy cows, pig and poultry farming are largely concentrated in this zone, which also accounts for the majority of cereal producers.

Vines zone

Farms in this zone are overwhelmingly involved in vine cultivation, with 52.4% of them practicing a virtual monoculture. Another 9.1% have vines and trees and 3.6% vines and ruminants. The dominance of vines in the farming of this zone, has great impications for policy analysis, as any changes in the policy of grape subsidization for instance, are likely to face united and concerted regional opposition.

Mountain zone

Three major farm types include almost one third of the farms in this zone. The greatest proportion of farms (58.8%) in the Mountain zone are under the unclassified and low income categories. The dominant farming activity is fruit growing (mainly deciduous fruits) and the farm type fruits is the most important including 20.6% of the farms. Vines and trees and to a lesser extent fruit and vegetables are also important farm types in this zone.

All zones

Out of the 48,000 registered farms in the country 13,000 or 27% had agricultural income less than 250. Another 10,000 farms (21%) remained unclassified not fulfiling the required classification conditions. About 36% of the farms were classified under 7 farm types of which the most important was vines (wine and table grapes) with 12% of the farms. The farm types olives (5.2%), fruits (4.9%), citrus (4.4%), vines and trees (3.5%), vegetables (3.2%) and sheep (3.1%) were the other major farm types, each including more than 1,500 farms.

It should be noted however, that these farm types have been considered important in terms of frequency distribution of holdings involved in an activity and not in terms of importance with respect to income.

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