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Project Acronym

CEEC AGRI POLICY

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the candidate states and the countries of the western balkan****Instrument**

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Thematic Priority

Scientific Support to Policies

**D12-1 First 6-monthly report
STUDY ON RURAL VITALITY
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1. An introduction to the rural areas of Cyprus

Rural areas are designated as such according to Eurostat's definition of rural areas, i.e. all areas that are not indicated as urban according to the local city plans. These areas are more than 95% of the total. The percentage of people living in rural areas has dropped significantly, from over 60% in the sixties to around 30% in the past few years. This number has been relatively stable since the nineties, and is due to the improvement of the road network and the services offered in rural areas, coupled with the increasing cost of living in urban areas. The government's so called "farmer-friendly" policies led to long-term problems in agriculture. The measures included guaranteed prices and placed an emphasis on quantity rather than quality. This left no incentives for innovation and was a serious blow to the Cypriot agriculture's competitiveness.

The agricultural sector faces several structural problems. A major one is the small size of farms. More than 80% of them were smaller than 5 hectares while the EU-15 (1997) figure was 55%. A mere 2% were larger than 20 hectares compared with the EU's 20%. Another important issue is the low level of agricultural income leading to second jobs. The percentage of those with agriculture as their sole source of income is only 25%. In 4 out of 10 families 90% of their income is derived from non-agricultural activities. Moreover, income is much lower in the mountain and semi-mountain/vine areas. Income also depends heavily on what is produced. Pigs, cattle and flowers provide very high incomes, well above the average agricultural income. On the other hand, olives, vines, fresh fruits, grains and citrus provide very meagre incomes. This led to 50% of the 1980 vine areas being abandoned, causing destruction to the environment and the traditional rural areas.

Another important issue is that of the aging population. In the 1994 Agricultural Survey the farmers average age was 51 years. The population under 35 years of age was just 13%. The situation is worse in the mountainous and semi-mountainous/vine areas. This led to Measures 1.6 and 1.7 of the Rural Development Plan 2004-2006, which provide incentives for the early retirement of older people and the entry of young people below the age of 39. Many people in the agricultural industry are under-employed. This problem is more intense in the mountainous and semi-mountainous areas where there are less non-agricultural jobs.

The hot Cyprus climate means that the government typically had to spend most of its agricultural bill on water management (up to 80% in 1985). Since the 1990s, however, more money has been spent on improving the quality and competitiveness of agricultural products, the restructuring of the problematic sectors and the gradual harmonization with the common market.

There has been only one plan with a holistic approach to rural vitality and growth. It took place in one area between 1978 and 1982 and was co-sponsored by the FAO. Even though water management was still a very big part of it, it also focussed on many other aspects, such as the road network, research, local health and education facilities and, finally, flood prevention measures and afforestation. This resulted in a much lower rate of people leaving the area than in similar areas not included in the plan.

According to the Agricultural Census of 1994, about 75% of the farmers have agriculture as a secondary occupation. Full-time farmers are older than part-time farmers, and there is a negative relationship between the intensity of off-farm work and farm size. As far as education is concerned, full-time farmers have a lower level of education, with only 22.6% having completed secondary education, compared to 51.4% for part-time farmers.

There are still weaknesses in the road network (in connecting rural areas to urban areas and other rural areas). The service sector is underdeveloped (including access to schools, health centers and broadband internet). This negatively affects the economic development of rural areas and the quality of life in them.

There are four rural zones in Cyprus: mountainous, semi-mountainous/vine, coastal, and plains/dry land. The first two are worse off in terms of most of the issues mentioned above. Coastal and plains/dry land areas make up almost 80% of total agricultural land. Mountainous areas are just over 5% of the total. The coastal zone is characterised by a high percentage of irrigated land (40%) and the prevalence of annual crops, such as cereals, potatoes and vegetables; citrus and table grapes are the main permanent crops. In the dryland zone, there is a greater specialisation, with cereals taking up

about two thirds of the average holding's land. The majority of the livestock farms are located in the above zones, where also a considerable percentage of the farm area is used for forage production. The Vines and the Mountainous zones are characterised by permanent crops. In the first zone, vines are cultivated on 80% of the mean holding's area, while in the latter, apart from vines, irrigated fruit trees, nuts and olives are cultivated to a relatively large extent.

As far as education is concerned, the population of students in primary schools in rural areas has dropped from 64% in 1970 to around 33% in recent years. This percentage has been relatively stable during the past decade. These percentages are similar to the total rural population area percentages. The number of students per teacher is 13.1 in rural areas compared to 16.5 in urban areas. In addition there are 26 private primary schools in urban areas whereas there is only one in rural areas.

1. Annotated bibliography

Axis 1: Competitiveness of agricultural and forestry sectors

Citation	Markou, M. (2002). Marketing of fruits and consumer preferences in Cyprus. <i>Agricultural Economics Report 42</i> . (Source: Cyprus)
Annotation	Trade liberalization through the GATT and the abolition of duties for agricultural products of European origin exert pressure on local agricultural products. This study derives useful information for Cypriot consumers' preferences concerning fruit consumption and the correlation between fruit origin (local vs. imported) and socio-economic characteristics of consumers. Cypriot consumers prefer local fruit instead of imported, loose instead of packed, and organic, although more expensive. Fruit appearance determines their purchase preference, while price is a rather inferior factor.

Citation	Markou, M., Mattas, K., and Katrakilides, K. (2004). Sectoral cointegration and the role of agriculture in the economy of Cyprus during 1960-1998: A vector auto regression approach. <i>Agricultural Economics Report 43</i> . (Source: Cyprus)
Annotation	Agriculture has been considered for a long period as the backbone of Cyprus economy. The agricultural sector has recently lost its leading position in the economy to the secondary and tertiary sectors of industrial production, trade and services (mainly tourism). The main outcome of this study is that agriculture has a positive impact on the other sectors of the economy, but its development is rather independent.

Citation	Markou, M., and Vassiliou, V. (2004). Knowledge management in solving agricultural problems in Cyprus. <i>Agricultural Economics Report 45</i> . (Source: Cyprus)
Annotation	In the framework of the eForesee, which is a co-operative project between Cyprus, Malta and Estonia funded by the European Commission, a second pilot exercise entitled "Knowledge management in solving agricultural problems in Cyprus" was conducted. It concluded that the targets and visions related to agriculture, rural development and environment protection, are drastically affected by the ongoing process for adaptation to the European economic and social environment, by processes in the International environment, and by special conditions prevailing in Cyprus.

Citation	Panayiotou, G.S. (1983). Demand and price analysis of livestock products in Cyprus. <i>Agricultural Economics Report 14</i> . (Source: Cyprus)
Annotation	This report examines the relationships between total food consumption, retail prices and consumer income. Cypriot agriculture is producing more food per capita and at lower real prizes while consumption expanded rapidly. The price spreads (marketing margins) of livestock products were between relatively constant percentages of the

	retail price. Demand curves for almost all livestock products showed a declining trend in price in both the retail and farm level as per capita consumption increased. The decline at the farm level was more rapid than at the retail level (derived demand was less elastic than primary demand). On the other hand, both retail and farm gate prices exhibited a rising trend as per capita disposable income increased.
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Citation	Panayiotou, G.S. (1993). Supply and demand elasticities for the main fruits in Cyprus. <i>Agricultural Economics Report 34</i> . (Source: Cyprus)
Annotation	Supply elasticities estimated for fourteen fruits showed that supply positively related with the area under each crop and negatively with input prices. For most fruits, however, there was a positive relationship of fruit supply with labour cost, which lacks economic reasoning. A possible explanation lies in the low opportunity cost of labour due to disguised unemployment in the agricultural sector. Increased production (supply) could lead to decreased farm income, unless production is exported.

Citation	Papachristodoulou, S., and Papayiannis, Chr. (1989). The impact of policy measures on grape production employment and growers income for the main viticultural zones of Cyprus. <i>Agricultural Economics Report 26</i> . (Source: Cyprus)
Annotation	The study examines the main problems of viticulture and tests the extent to which alternative policies for restructuring may improve the quality and limit the quantity of grapes and enhance family income. Impacts of policies could be: (a) Short-run total production declines and long-term total production exhibits a smaller decline, (b) Labour expected to be released for off-farm jobs, or (c) Annual income rising by 1.8% to 7.6% depending on the zone.

Citation	Papachristodoulou, S., and Panayiotou, G.S. (1989). World outlook in vine products production, consumption and trade. <i>Agricultural Economics Report 27</i> . (Source: Cyprus)
Annotation	Viticulture is a problematic farm activity in both developed and developing countries. It is associated with heavy subsidization, which enhances production and results in unwanted surpluses of vine products. The solution to the problem may be found in the improved qualities of the vine products, which face an expanding market.

Citation	Papayiannis, Chr. (1991). Production economics of olives 1985-1988. <i>Agricultural Economics Report 30</i> . (Source: Cyprus)
Annotation	This paper refers to the technical and economic analysis of olive production of two areas of Cyprus.

Citation	Papayiannis, Chr., and Markou M. (1999). A structural and economic analysis of farming in Cyprus. <i>Agricultural Economics Report 38</i> . (Source: Cyprus)
Annotation	This study analyses the farm structures, estimates farm and off-farm incomes of the mean agricultural holding, and determines the most frequent types of farming in each of the four agro-economic zones considered.

Citation	Vouzounis, N.A., Dararas, V.E., and Georghiou, G. (2003). Chemical control of weeds in the aromatic crops lavender, oregano and sage. <i>Technical bulletin 218</i> . (Source: Cyprus)
Annotation	Irrigated aromatic crops are plagued with competition by a large number of weed species. A comprehensive chemical weed control program in aromatic crops was started in 1996 at the National Agricultural Research Institute. Pre-emergence herbicides applied to lavender, oregano and sage, a few days after planting, reduced significantly the dry weight of weeds. Although some of the herbicides tested often caused foliar damage to the crops, they did not affect yield or oil content compared to

	the untreated control.
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Axis 2: Improving the environment and countryside

Citation	Markou, M., and Vassiliou, V. (2004). Knowledge management in solving agricultural problems in Cyprus, <i>Agricultural Economics Report 45</i> . (Source: Cyprus)
Annotation	In the framework of the eForesee, which is a co-operative project between Cyprus, Malta and Estonia funded by the European Commission, a second pilot exercise entitled “knowledge management in solving agricultural problems in Cyprus” was conducted. It is concluded that the targets and visions related to agriculture, rural development and environment protection, are drastically affected by the ongoing process for adaptation to the European economic and social environment, by processes in the International environment and by special conditions prevailing in Cyprus.

Citation	Vouzounis, N.A., V.E. Dararas, and G. Georghiou, (2003). Chemical control of weeds in the aromatic crops lavender, oregano and sage, <i>Technical bulletin 218</i> . (Source: Cyprus)
Annotation	Irrigated aromatic crops are plagued with competition by a large number of weed species. A comprehensive chemical weed control program in aromatic crops was started in 1996 at the National Agricultural Research Institute. Pre-emergence herbicides applied to lavender, oregano and sage few days after planting reduced significantly the dry weight of weeds. Although some of the herbicides tested often caused foliar damage to the crops, they did not affect yield or oil content compared to the untreated control.

Axis 3: Improving the quality of life in rural areas and encouraging diversification

Citation	Markou, M. and Vassiliou, V. (2004). Knowledge management in solving agricultural problems in Cyprus. <i>Agricultural Economics Report 45</i> . (Source: Cyprus)
Annotation	In the framework of the eForesee, which is a co-operative project between Cyprus, Malta and Estonia funded by the European Commission, a second pilot exercise entitled “knowledge management in solving agricultural problems in Cyprus” was conducted. It is concluded that the targets and visions related to agriculture, rural development and environment protection, are drastically affected by the ongoing process for adaptation to the European economic and social environment, by processes in the International environment and by special conditions prevailing in Cyprus.

Additional references from Cyprus:

Statistical Service of the Government of Cyprus	Agricultural Statistics 2002
Ministry of Agriculture, natural resources and environment	Annual report of the Ministry of Agriculture, natural resources and environment 2004
Statistical Service of the Government of Cyprus	Agricultural Census 1994
Ministry of Agriculture, natural resources and environment	Cyprus Rural Development Plan 2004-2006
Statistical Service of the Government of Cyprus	http://www.mof.gov.cy/cystat/
Ministry of Agriculture, natural resources and environment	"Agrotis" (farmer) Bi-monthly periodical of the Ministry of Agriculture, natural resources and environment 2004 and 2005 editions.
Agricultural Research Institute	Papayiannis, Chr., and Markou, M. 1999. A structural economic analysis of farming in Cyprus. <i>Agricultural Economics Report 38</i> .
Statistical Service of the Government of Cyprus	Labour Statistics 2002
Statistical Service of the Government of Cyprus	Education Statistics 2003

3. Current availability of statistical data

Measurement in relative terms	Measurement in absolute terms	Geographical area: level of disaggregation	Available since	Latest available period	Source ¹
GDP/capita (EU-25 = 100) 81.2	GDP/capita (abs. value) €10,100	National	1960	2004 Provisional	http://www.mof.gov.cy/cystat/ and http://europa.eu.int/comm/eurostat/
Rate of unemployment (% active population) 2005 average 3.8%	Unemployment (abs. number) 2005 average 13,548	National	1985	August 2005	http://www.mof.gov.cy/cystat/
Rate of female unemployment 7.3% (1st trimester 2005)	Female unemployment (abs. value) 11,651 (1st trimester 2005)	National	1985	1 st trimester 2005	http://www.mof.gov.cy/cystat/
Rate of young people (<25 y.o.) unemployment 14% (1st trimester 2005)	Young people unemployment (abs. value) 5,812 (1st trimester 2005)	National	1985	1 st trimester 2005	http://www.mof.gov.cy/cystat/
% of GVA in primary sector 3.6% (2004 Estimate)	GVA in primary sector (abs. value) €245.5m (2004 Estimate)	National	1960	2002, 2003 Provisional, 2004 Estimated	http://www.mof.gov.cy/cystat/ and Agricultural Statistics 2002
% employment in primary sector 8%	Employment in primary sector (abs. number) 24,900	National	1960	2002	Labour Statistics 2002
Importance of young people (5-14) % N/A	= N/A				
Importance of middle people (15-54 + 54-64) % 97%	= 334,661	National	1985	1 st trimester 2004	http://www.mof.gov.cy/cystat/
Importance of age people (>=65) % 3%	= 9,512	National	1985	1 st trimester 2004	http://www.mof.gov.cy/cystat/
% employment in Secondary sector 21%	= 65,400	National	1960	2002	Labour Statistics 2002
% employment in Third sector 71%	= 221,100	National	1960	2002	Labour Statistics 2002
% of self-employed + family workers 17.4%	= 55,000 (primary sector 11,800)	National	1960	2002	Labour Statistics 2002
% Long-term unemployment 1.3% (1 st trimester 2005)	= 4,714 (1 st trimester 2005)	National	1960	1 st trimester 2005	http://www.mof.gov.cy/cystat/
Share of population covered by LAG's N/A	Population covered by LAG's (abs. number) N/A				
Measurement in relative terms	Measurement in absolute terms	Geographical area:	Available	Latest	Source ²

¹ using the Harvard System described above for published sources; or giving the URL reference for on-line sources

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terms	terms	level of disaggregation	since	available period	
% farmers with basic and full education attained None 3.9%, Elementary 54.6%, Secondary 31.9%, Higher 9.6%	Farmers with basic and full education attained (abs. number) None 1,712, Elementary 24,086, Secondary 14,066, Higher 4,210	National		1994	Agricultural Census 1994
Labour productivity in agriculture (EU-25 = 100) - total and by sector.	Labour productivity in agriculture (abs. value) - total and by sector. Total 32.2 weeks, Coastal zone 41.1, Dryland zone 30.2, Vines zone 28.8, Mountain zone 22.7	National		1994	Agricultural Census 1994
% farmers < 35 years 13%	=5,679	National	1985	1994	Agricultural Census 1994
% farmers >= 55 years 37%	=16,229	National	1985	1994	Agricultural Census 1994
GFCF in agriculture / UAA (€/ha) c£356	GFCF in agriculture (abs. value) c£47.2m	National	1960	2002	Agricultural Statistics 2002
Share of GVA in food industry N/A	Gross Value Added in food industry (abs. value) N/A				
GVA /employee in food industry N/A	Gross Value Added in food industry N/A				
GFCF in food industry / UAA (€/ha) N/A	GFCF in food industry (abs. value) N/A				
% farms < 1 ESU	number of farms < 1 ESU				
Farm size (ha) average and distribution Average 3.4ha	=16,418 <1ha, 30,862 <3ha, 956 >20ha	National	1985	1994	Agricultural Census 1994
Farm size (ESU) and distribution N/A	= N/A				
Number of farms	=44,802	National	1960	1994	Agricultural Census 1994
Utilized agricultural area (ha) 68%	=132,700 ha	National	1960	2002	Agricultural Statistics 2002
Agricultural Work Unit N/A	=N/A				
GFCF in forestry / area of forest available for wood supply (€/ha) N/A	GFCF in forestry (abs. value) N/A				
GVA /employee in forestry	Gross Value Added in forestry c£1.46m	National	1960	2002	Agricultural Statistics 2002
Employment in forestry sector 1.5% of primary sector	=410	National	1985	2002	Labour Statistics 2002/2003

² using the Harvard System described above for published sources; or giving the URL reference for on-line sources

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Measurement in relative terms	Measurement in absolute terms	Geographical area: level of disaggregation	Available since	Latest available period	Source ³
area of forest available for wood supply (FAWS)	= Not Applicable				
ownership (% area of FAWS under private ownership)	= Not Applicable				
average size of holding (of total forest area) by type of ownership (ha)	= Not Applicable				
% UAA under Natura 2000 7.0%	Agriculture areas under Natura 2000 (abs. value) 64682 Ha	National		Current Sept 2005	Forestry Department Of Ministry of Agriculture, Natural Resources and Environment
% forest area under Natura 2000 38.6%	Forestry areas under Natura 2000 (abs. number) 47580 Ha	National		Current Sept 2005	Forestry Department Of Ministry of Agriculture, Natural Resources and Environment
Trends of index of population of farmland birds N/A	= N/A				
% UAA of High Nature Value Farmland areas N/A	High Nature Value farmland areas (abs. number) N/A				
% UAA of extensive agriculture N/A	area of extensive agriculture (abs. number) N/A				
% UAA with low grazing LU/ha N/A	area of extensive livestock (abs. number) N/A				
% area LFA TOTAL 93%	= 5,495 km2	National		Current Sept 2005	Agricultural Department Of Ministry of Agriculture, Natural Resources and Environment
% area LFA UAA 93%	= 124,078 Ha	National		Current Sept 2005	Agricultural Department Of Ministry of Agriculture, Natural Resources and Environment
% area Natura 2000	= N/A				
gross nutrient balance: surplus of nitrogen in kg/ha	= N/A				
% UAA designated as nitrate vulnerable zone 5.0%	= 460 km2	National		Current Sept 2005	Agricultural Department Of Ministry of Agriculture, Natural Resources and Environment

³ using the Harvard System described above for published sources; or giving the URL reference for on-line sources

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Measurement in relative terms	Measurement in absolute terms	Geographical area: level of disaggregation	Available since	Latest available period	Source ⁴
% irrigated area 19.6%	= 35,900 ha	National	1960	2002	http://www.mof.gov.cy/cystat/
annual trends in the concentrations of nitrate in surface water	= N/A				
annual trends in the concentrations of nitrate in ground water	= N/A				
concentrations of pesticides in ground and surface waters	= N/A				
% UAA devoted to energy and biomass crops N/A	UAA devoted to energy and biomass crops (abs. number) N/A				
share of agriculture in total production of renewable energy	total production of renewable energy by agriculture (abs. number) N/A				
share of agriculture in GHG emissions	emissions of GHG by agriculture (abs. number) N/A				
Soil : areas at risk of soil erosion (in risk level)	= N/A				
% UAA under organic farming 0.8%	UAA under organic farming (abs. number) 1060 Ha	National		Current Sept 2005	Agricultural Department Of Ministry of Agriculture, Natural Resources and Environment
Protective forests – soil, water and other	= N/A				
Land use (% land cover agriculture / forestry / nature)	= N/A				
% holders with other gainful activity 61.2%	holders with other gainful activity (abs. value) 31,897	National	1960	1994	Agricultural Census 1994
% employment in non-agricultural sector 92%	Employment in non-agricultural sector 299,300	National	1960	2004 Provisional	Statistical Service of Cyprus
Number of micro enterprises / 1000 hab	Number of micro enterprises (abs. value) N/A				
% GVA in non-agricultural sector 96%	GVA in non-agricultural sector €6.6b	National	1995	2004 Estimate	http://www.mof.gov.cy/cystat/
Number of beds (in hotels, camping, etc) / km ² 10.2	Number of beds (in hotels, camping, etc) 94,466	National	1Q 1996	4Q 2002	Monthly Economic Indicator September - June 2003
% of households having access to internet at home 29%	households having access to internet at home (abs. value) 43,212	National	1996	2004	http://www.mof.gov.cy/cystat/
DSL and cable modem coverage 19.7% of total connections	DSL and cable modem coverage	National	2003	2004	http://www.mof.gov.cy/cystat/

⁴ using the Harvard System described above for published sources; or giving the URL reference for on-line sources

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Measurement in relative terms	Measurement in absolute terms	Geographical area: level of disaggregation	Available since	Latest available period	Source ⁵
Share of GVA in services 64%	GVA in services (abs. value) €4.4b	National	1960	2004 Estimate	Statistical Service of Cyprus
Net migration rate 2%	=15,724	National	1960	2004	http://www.mof.gov.cy/cystat/
% of active population of adults participating in life long training 26.4%	active population of adults participating in life long training (abs. number)	National	1980	2003	Statistics of Education 2003/2004
% persons with (Medium + High) educationnal attainment (25_64) 20+ population Medium 45% High 25%	persons (25_64) with (Medium + High) educationnal attainment	National	1946	2004	Statistics of Education 2003/2004
% females with (Medium + High) educationnal attainment (25_64) 20+ population Medium 43% High 24%	females (25_64) with (Medium + High) educationnal attainment	National	1946	2004	Statistics of Education 2003/2004
% area in rural areas >90%	>5300 km2	National		Current Sept 2005	Agricultural Department Of Ministry of Agriculture, Natural Resources and Environment
% population in rural areas 31%	218,225	National	1960	2001	Population Census 2001
density population in rural areas	>41 pop/km2				Calculated from above
% GVA in rural areas	N/A				
% employment in rural areas	N/A				

⁵ using the Harvard System described above for published sources; or giving the URL reference for on-line sources