

Supplementary

## Integrated Sustainability Assessment of Divergent Mediterranean Farming Systems: Cyprus as a Case Study

Tables S1 and S2 present 48 structural and functional variables, including both clustering and non-clustering variables, used for the characterization and profiling of the identified farming systems. Statistical tests (ANOVA and  $\chi^2$  test) were done to detect significant differences between systems with regard to these variables and ascertain systems' distinctiveness. A brief description of each system is given below.

Farming system 1 (FS1): *“Medium-sized irrigated farms with open field vegetables/potatoes, profitable with or without subsidies”*. This system relied heavily on irrigation. The Utilized Agricultural Area (UAA) was dedicated to potatoes and other open field vegetables. FS1 was considered as semi-intensive, both in terms of land to labor ratio (LLR) and capital intensity. The total labor required was above-average and was mostly provided by the family members and seasonal hired workers. This system exhibited good economic results and it was the only profitable system when subsidies were excluded from gross income.

Farming system 2 (FS2): *“Small to medium-sized irrigated farms with greenhouse/open field vegetables and permanent crops, labor-intensive”*. It was characterized by the second smallest UAA dedicated to greenhouse vegetables, open field vegetables and permanent crops, mainly olives. Similar to FS1, this system was highly dependent on irrigation. With the second highest total labor input and the largest proportion of permanent hired labor, FS2 was the most labor-intensive (smallest LLR); however, capital intensity was very low. Economic results were generally moderate for FS2.

Farming system 3 (FS3): *“Large farms with market-oriented rainfed cereals and fodder crops, high dependency on subsidies and high off/non-farm income”*. FS3 was characterized by the second largest UAA sown to rainfed cereals and fodder crops, and the highest percentage of income from subsidies. This system was the most extensive (highest LLR), but it also exhibited the second highest capital intensity. The household income coming from off/non-farm activities was high. FS3 demonstrated the lowest total labor required and the lowest share of permanent hired labor. Economic results were in general above-average, however, net profit without subsidies was the worst among systems.

Farming system 4 (FS4): *“Small irrigated farms with open field vegetables, potatoes and permanent crops, off-farm based”*. It exhibited the smallest UAA allocated to open field vegetables, potatoes and permanent crops (mostly olives and citrus), and the lowest proportion of rented land. Based on the value of LLR, FS4 was considered as semi-intensive. Nevertheless, capital intensity was the lowest among systems. The farmers of FS4 were the most elderly and the most experienced, but low educated, with ample off/non-farm income. The low total labor required was mostly provided by the family members and economic outputs were in general below-average.

**Table S1.** Characterization of identified farming systems; land use/cultivation plan, livestock ownership and production orientation variables (mean  $\pm$  SD).

Variable (Unit)	Farming Systems (FSs)						
	FS1 (n = 60)	FS2 (n = 46)	FS3 (n = 35)	FS4 (n = 70)	FS5 (n = 103)	FS6 (n = 10)	All (n = 324)
<i>Land use</i>							
Total UAA (ha)*	16.25 $\pm$ 18.35 <sub>b</sub>	11.46 $\pm$ 24.68 <sub>ab</sub>	74.37 $\pm$ 81.74 <sub>c</sub>	5.72 $\pm$ 5.69 <sub>a</sub>	16.34 $\pm$ 17.91 <sub>b</sub>	115.51 $\pm$ 82.47 <sub>c</sub>	22.67 $\pm$ 42.48
Irrigated UAA (%)*	83.1 $\pm$ 26.6 <sub>a</sub>	78.9 $\pm$ 33.6 <sub>a</sub>	4.0 $\pm$ 7.2 <sub>b</sub>	75.6 $\pm$ 33.6 <sub>a</sub>	8.5 $\pm$ 19.0 <sub>b</sub>	6.2 $\pm$ 7.9 <sub>b</sub>	46.3 $\pm$ 44.0
Rented UAA (%)*	62.9 $\pm$ 30.4 <sub>ab</sub>	52.2 $\pm$ 38.3 <sub>ac</sub>	75.7 $\pm$ 32.0 <sub>bd</sub>	34.4 $\pm$ 33.6 <sub>c</sub>	83.5 $\pm$ 27.8 <sub>d</sub>	89.1 $\pm$ 12.9 <sub>a</sub>	63.9 $\pm$ 36.5
Share of UAA under cereals and fodder crops (%)	16.9 $\pm$ 26.8 <sub>a</sub>	19.3 $\pm$ 33.4 <sub>a</sub>	92.8 $\pm$ 17.8 <sub>b</sub>	21.9 $\pm$ 31.8 <sub>a</sub>	92.2 $\pm$ 23.1 <sub>b</sub>	99.0 $\pm$ 3.1 <sub>b</sub>	53.0 $\pm$ 45.2
Share of UAA under open field vegetables (incl. potatoes) (%)	78.2 $\pm$ 26.6 <sub>c</sub>	35.1 $\pm$ 33.1 <sub>a</sub>	0.7 $\pm$ 2.3 <sub>b</sub>	51.3 $\pm$ 40.1 <sub>a</sub>	1.5 $\pm$ 7.3 <sub>b</sub>	1.0 $\pm$ 3.1 <sub>b</sub>	31.1 $\pm$ 39.4
Share of UAA under open field vegetables (excl. potatoes) (%)	27.3 $\pm$ 34.4 <sub>a</sub>	27.4 $\pm$ 29.8 <sub>a</sub>	0.1 $\pm$ 0.4 <sub>b</sub>	27.5 $\pm$ 33.7 <sub>a</sub>	0.2 $\pm$ 1.3 <sub>b</sub>	1.0 $\pm$ 3.1 <sub>b</sub>	15.0 $\pm$ 27.7
Share of UAA under potatoes (%)	50.9 $\pm$ 37.9 <sub>b</sub>	7.7 $\pm$ 17.7 <sub>a</sub>	0.6 $\pm$ 2.3 <sub>a</sub>	23.8 $\pm$ 32.7 <sub>c</sub>	1.2 $\pm$ 6.9 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	16.1 $\pm$ 30.0
Share of UAA under greenhouse vegetables (%)	0.9 $\pm$ 3.4 <sub>a</sub>	27.6 $\pm$ 31.7 <sub>b</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	0.6 $\pm$ 2.1 <sub>a</sub>	0.0 $\pm$ 0.3 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	4.2 $\pm$ 15.3
Share of UAA under permanent crops (incl. citrus and olives) (%)	4.0 $\pm$ 10.7 <sub>c</sub>	18.0 $\pm$ 29.2 <sub>ab</sub>	6.5 $\pm$ 17.8 <sub>ac</sub>	26.1 $\pm$ 35.4 <sub>b</sub>	3.4 $\pm$ 13.8 <sub>c</sub>	0.0 $\pm$ 0.0 <sub>c</sub>	10.7 $\pm$ 24.3
Share of UAA under permanent crops (excl. citrus and olives) (%)*	0.8 $\pm$ 4.3	6.1 $\pm$ 16.8	1.7 $\pm$ 6.6	2.4 $\pm$ 8.1	0.5 $\pm$ 2.7	0.0 $\pm$ 0.0	1.9 $\pm$ 8.2
Share of UAA under citrus (%)	1.0 $\pm$ 3.7 <sub>ab</sub>	1.6 $\pm$ 3.6 <sub>a</sub>	0.7 $\pm$ 2.8 <sub>ab</sub>	11.2 $\pm$ 24.6 <sub>c</sub>	0.1 $\pm$ 0.5 <sub>ab</sub>	0.0 $\pm$ 0.0 <sub>b</sub>	2.9 $\pm$ 12.4
Share of UAA under olives (%)	2.1 $\pm$ 5.3 <sub>b</sub>	10.2 $\pm$ 18.9 <sub>ab</sub>	4.1 $\pm$ 11.9 <sub>abc</sub>	12.5 $\pm$ 22.3 <sub>a</sub>	2.9 $\pm$ 13.4 <sub>bc</sub>	0.0 $\pm$ 0.0 <sub>c</sub>	5.9 $\pm$ 15.9
Land per unit of labor required (ha AWU <sup>-1</sup> ) <sup>a</sup>	6.71 $\pm$ 4.96 <sub>ac</sub>	2.76 $\pm$ 4.33 <sub>b</sub>	70.10 $\pm$ 38.60 <sub>d</sub>	5.40 $\pm$ 5.90 <sub>ab</sub>	9.09 $\pm$ 8.09 <sub>c</sub>	26.04 $\pm$ 10.72 <sub>e</sub>	14.07 $\pm$ 24.34
<i>Livestock ownership</i>							
Total livestock units (herd size) (LU)*	1.44 $\pm$ 7.23 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	0.80 $\pm$ 3.44 <sub>a</sub>	0.38 $\pm$ 1.68 <sub>a</sub>	27.84 $\pm$ 24.64 <sub>b</sub>	105.50 $\pm$ 35.70 <sub>c</sub>	12.54 $\pm$ 25.94
Dairy cows (LU)	0.00 $\pm$ 0.00 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	105.50 $\pm$ 35.70 <sub>b</sub>	3.26 $\pm$ 19.22
Sheep and goats (LU)	1.44 $\pm$ 7.23 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	0.80 $\pm$ 3.44 <sub>a</sub>	0.37 $\pm$ 1.68 <sub>a</sub>	27.82 $\pm$ 24.66 <sub>b</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	9.27 $\pm$ 19.09
Livestock density (LU ha <sup>-1</sup> of UAA) (ratio)	0.03 $\pm$ 0.12 <sub>a</sub>	0.00 $\pm$ 0.00 <sub>a</sub>	0.01 $\pm$ 0.02 <sub>a</sub>	0.07 $\pm$ 0.32 <sub>a</sub>	4.40 $\pm$ 10.78 <sub>b</sub>	1.24 $\pm$ 0.63 <sub>c</sub>	1.46 $\pm$ 6.39
<i>Production orientation</i>							
Percentage of gross income <sup>b</sup> from cereals and fodder crops (%)*	1.9 $\pm$ 5.5 <sub>a</sub>	3.4 $\pm$ 8.3 <sub>a</sub>	49.4 $\pm$ 17.7 <sub>b</sub>	2.4 $\pm$ 4.7 <sub>a</sub>	0.7 $\pm$ 4.4 <sub>a</sub>	1.4 $\pm$ 4.3 <sub>a</sub>	7.0 $\pm$ 16.7
Percentage of gross income from open field vegetables (incl. potatoes) (%)*	89.1 $\pm$ 10.5 <sub>b</sub>	27.5 $\pm$ 24.9 <sub>c</sub>	4.3 $\pm$ 12.1 <sub>a</sub>	60.2 $\pm$ 38.1 <sub>d</sub>	1.7 $\pm$ 8.1 <sub>a</sub>	3.8 $\pm$ 11.9 <sub>a</sub>	34.5 $\pm$ 40.4
Percentage of gross income from open field vegetables (excl. potatoes) (%)	31.5 $\pm$ 37.3 <sub>a</sub>	23.2 $\pm$ 23.3 <sub>a</sub>	0.7 $\pm$ 3.8 <sub>b</sub>	33.4 $\pm$ 35.4 <sub>a</sub>	0.3 $\pm$ 1.3 <sub>b</sub>	3.8 $\pm$ 11.9 <sub>b</sub>	16.6 $\pm$ 28.8
Percentage of gross income from potatoes (%)	57.6 $\pm$ 38.9 <sub>b</sub>	4.3 $\pm$ 10.0 <sub>a</sub>	3.6 $\pm$ 11.7 <sub>a</sub>	26.8 $\pm$ 33.0 <sub>c</sub>	1.5 $\pm$ 7.5 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	17.9 $\pm$ 31.8
Percentage of gross income from greenhouse vegetables (%)*	1.9 $\pm$ 7.2 <sub>a</sub>	55.6 $\pm$ 30.5 <sub>b</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	3.4 $\pm$ 12.2 <sub>a</sub>	0.4 $\pm$ 3.5 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	9.1 $\pm$ 23.1
Percentage of gross income from permanent crops (incl. citrus and olives) (%)	0.9 $\pm$ 2.3 <sub>b</sub>	7.9 $\pm$ 19.4 <sub>abcd</sub>	8.4 $\pm$ 14.3 <sub>c</sub>	21.7 $\pm$ 32.4 <sub>a</sub>	1.2 $\pm$ 5.1 <sub>bcd</sub>	0.0 $\pm$ 0.0 <sub>d</sub>	7.3 $\pm$ 19.3
Percentage of gross income from permanent crops (excl. citrus and olives) (%)	0.2 $\pm$ 1.0	3.4 $\pm$ 10.8	1.9 $\pm$ 5.6	2.0 $\pm$ 8.8	0.4 $\pm$ 3.6	0.0 $\pm$ 0.0	1.3 $\pm$ 6.5
Percentage of gross income from citrus (%)	0.3 $\pm$ 1.0 <sub>a</sub>	1.1 $\pm$ 4.4 <sub>a</sub>	2.0 $\pm$ 7.5 <sub>a</sub>	11.3 $\pm$ 24.5 <sub>b</sub>	0.1 $\pm$ 0.7 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	2.9 $\pm$ 12.5
Percentage of gross income from olives (%)	0.4 $\pm$ 1.2 <sub>bc</sub>	3.4 $\pm$ 11.2 <sub>abc</sub>	4.6 $\pm$ 10.1 <sub>abc</sub>	8.4 $\pm$ 18.8 <sub>a</sub>	0.7 $\pm$ 2.5 <sub>b</sub>	0.0 $\pm$ 0.0 <sub>c</sub>	3.1 $\pm$ 10.7
Percentage of gross income from dairy cows (%)	0.0 $\pm$ 0.0 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	86.4 $\pm$ 20.2 <sub>b</sub>	2.7 $\pm$ 15.3
Percentage of gross income from sheep and goats (%)	0.9 $\pm$ 4.4 <sub>a</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	1.1 $\pm$ 4.9 <sub>a</sub>	3.4 $\pm$ 15.0 <sub>a</sub>	83.7 $\pm$ 15.2 <sub>b</sub>	0.0 $\pm$ 0.0 <sub>a</sub>	27.6 $\pm$ 40.0
Percentage of gross income from subsidies (%)*	5.3 $\pm$ 2.9 <sub>a</sub>	5.5 $\pm$ 5.9 <sub>ab</sub>	36.8 $\pm$ 9.9 <sub>d</sub>	8.9 $\pm$ 6.9 <sub>bc</sub>	12.3 $\pm$ 8.7 <sub>c</sub>	8.5 $\pm$ 4.3 <sub>abc</sub>	11.8 $\pm$ 11.6

n: number of farms; UAA: Utilized Agricultural Area; AWU: Annual Work Unit (2080 h year<sup>-1</sup>); LU: Livestock Unit (according to Reference [1]). Different subscript lowercase letters within rows indicate significant differences between means at  $p < 0.05$  according to Games-Howell test. \* Variables included in multivariate analysis.

<sup>a</sup> Variable used to assess criterion or predictive validity of the clusters. <sup>b</sup> All incomes from agricultural activities including subsidies. Source: Reference [2].

**Table S2.** Characterization of identified farming systems; farm and household, labor, and economic variables (mean  $\pm$  SD for continuous variables; frequencies (%) for categorical variables).

Variable (Unit)	Farming Systems (FSs)						
	FS1 (n = 60)	FS2 (n = 46)	FS3 (n = 35)	FS4 (n = 70)	FS5 (n = 103)	FS6 (n = 10)	All (n = 324)
<i>Farm and household</i>							
Farmer's age (years)*	52.08 $\pm$ 10.45 <sub>ab</sub>	52.70 $\pm$ 10.46 <sub>ab</sub>	54.97 $\pm$ 13.26 <sub>ab</sub>	64.11 $\pm$ 7.60 <sub>c</sub>	56.64 $\pm$ 10.31 <sub>a</sub>	43.20 $\pm$ 11.48 <sub>b</sub>	56.26 $\pm$ 11.28
Farmer's education level (years)*	8.92 $\pm$ 2.77 <sub>ab</sub>	9.04 $\pm$ 3.53 <sub>ab</sub>	9.71 $\pm$ 3.20 <sub>ac</sub>	7.64 $\pm$ 2.97 <sub>b</sub>	7.49 $\pm$ 3.12 <sub>b</sub>	12.50 $\pm$ 3.24 <sub>c</sub>	8.40 $\pm$ 3.27
Farming experience (years)*	34.12 $\pm$ 13.10 <sub>ab</sub>	35.04 $\pm$ 13.25 <sub>ab</sub>	34.94 $\pm$ 15.17 <sub>ab</sub>	46.43 $\pm$ 11.90 <sub>c</sub>	37.53 $\pm$ 12.86 <sub>a</sub>	24.30 $\pm$ 9.59 <sub>b</sub>	37.78 $\pm$ 13.83
Household size (no. of members)	3.58 $\pm$ 1.41 <sub>ab</sub>	3.91 $\pm$ 1.71 <sub>b</sub>	3.57 $\pm$ 1.29 <sub>ab</sub>	2.94 $\pm$ 1.23 <sub>a</sub>	4.06 $\pm$ 1.82 <sub>b</sub>	4.30 $\pm$ 1.57 <sub>ab</sub>	3.66 $\pm$ 1.60
No. of farmer's children (no. of children)	2.67 $\pm$ 1.22	2.70 $\pm$ 1.17	2.54 $\pm$ 1.27	2.93 $\pm$ 1.17	3.21 $\pm$ 1.52	2.30 $\pm$ 1.25	2.88 $\pm$ 1.33
Participation in POs (% of farms) <sup>a</sup>	61.7 <sub>a</sub>	54.3 <sub>a</sub>	68.6 <sub>a</sub>	58.6 <sub>a</sub>	14.6 <sub>b</sub>	70.0 <sub>a</sub>	46.0
Share of total household income derived from off/non-farm activities (%)*	28.6 $\pm$ 28.1 <sub>ab</sub>	23.6 $\pm$ 26.8 <sub>ad</sub>	44.4 $\pm$ 33.2 <sub>bc</sub>	56.8 $\pm$ 24.0 <sub>c</sub>	45.2 $\pm$ 31.5 <sub>c</sub>	8.3 $\pm$ 14.3 <sub>d</sub>	40.3 $\pm$ 31.1
LFA <sup>b</sup> (% of farms)	13.3 <sub>a</sub>	30.4 <sub>abc</sub>	48.6 <sub>c</sub>	18.6 <sub>ab</sub>	35.9 <sub>bc</sub>	40.0 <sub>abc</sub>	28.7
<i>Labor</i>							
Total labor required (AWU farm <sup>-1</sup> )*	2.56 $\pm$ 2.28 <sub>bc</sub>	3.43 $\pm$ 2.05 <sub>c</sub>	1.07 $\pm$ 1.04 <sub>a</sub>	1.26 $\pm$ 0.82 <sub>a</sub>	1.90 $\pm$ 1.24 <sub>b</sub>	4.24 $\pm$ 1.59 <sub>c</sub>	2.08 $\pm$ 1.75
Share of permanent hired labor in total labor required (%)*	13.4 $\pm$ 21.7 <sub>a</sub>	54.6 $\pm$ 23.4 <sub>b</sub>	4.3 $\pm$ 15.6 <sub>a</sub>	11.7 $\pm$ 23.5 <sub>a</sub>	12.9 $\pm$ 21.5 <sub>a</sub>	45.9 $\pm$ 22.1 <sub>b</sub>	18.7 $\pm$ 26.8
Employment degree <sup>c</sup> (%)*	115.5 $\pm$ 14.1 <sub>c</sub>	96.4 $\pm$ 10.8 <sub>ab</sub>	96.1 $\pm$ 10.9 <sub>ab</sub>	92.6 $\pm$ 12.9 <sub>a</sub>	99.1 $\pm$ 10.9 <sub>b</sub>	102.3 $\pm$ 7.5 <sub>ab</sub>	100.1 $\pm$ 14.1
<i>Economic</i>							
Gross profit <sup>d</sup> (k€ farm <sup>-1</sup> )*	34.59 $\pm$ 33.97 <sub>a</sub>	20.35 $\pm$ 20.34 <sub>ab</sub>	36.46 $\pm$ 39.76 <sub>ab</sub>	6.10 $\pm$ 5.08 <sub>c</sub>	17.75 $\pm$ 19.88 <sub>b</sub>	153.73 $\pm$ 85.90 <sub>d</sub>	24.94 $\pm$ 37.58
Net profit <sup>e</sup> (k€ farm <sup>-1</sup> )*	15.27 $\pm$ 17.30 <sub>a</sub>	4.19 $\pm$ 6.78 <sub>b</sub>	9.15 $\pm$ 16.52 <sub>ab</sub>	0.55 $\pm$ 1.98 <sub>c</sub>	0.78 $\pm$ 7.64 <sub>bc</sub>	39.83 $\pm$ 47.07 <sub>abc</sub>	6.01 $\pm$ 15.45
Net profit without subsidies (k€ farm <sup>-1</sup> )	7.87 $\pm$ 15.69 <sub>a</sub>	-0.89 $\pm$ 10.26 <sub>c</sub>	-19.37 $\pm$ 17.64 <sub>b</sub>	-2.52 $\pm$ 4.11 <sub>c</sub>	-7.75 $\pm$ 10.31 <sub>d</sub>	-8.59 $\pm$ 36.98 <sub>abcd</sub>	-4.03 $\pm$ 15.05
Rate of return to total capital <sup>f</sup> (%)*	4.7 $\pm$ 4.6 <sub>a</sub>	3.6 $\pm$ 2.9 <sub>a</sub>	1.0 $\pm$ 0.5 <sub>b</sub>	1.6 $\pm$ 1.2 <sub>cd</sub>	1.4 $\pm$ 1.2 <sub>bc</sub>	2.1 $\pm$ 0.5 <sub>d</sub>	2.4 $\pm$ 2.8
Return to labor <sup>g</sup> per day (€)*	72.60 $\pm$ 33.29 <sub>a</sub>	40.26 $\pm$ 8.63 <sub>b</sub>	59.72 $\pm$ 33.40 <sub>a</sub>	42.21 $\pm$ 12.11 <sub>b</sub>	31.86 $\pm$ 10.76 <sub>c</sub>	68.05 $\pm$ 33.85 <sub>abc</sub>	46.96 $\pm$ 25.84
Share of land rent in total production costs <sup>h</sup> (%)*	5.9 $\pm$ 3.1 <sub>a</sub>	3.3 $\pm$ 2.8 <sub>b</sub>	22.6 $\pm$ 7.6 <sub>d</sub>	5.6 $\pm$ 3.8 <sub>ac</sub>	4.0 $\pm$ 4.3 <sub>bc</sub>	4.8 $\pm$ 2.4 <sub>abc</sub>	6.6 $\pm$ 7.1
Share of total labor costs in total production costs (%)*	26.9 $\pm$ 11.6 <sub>b</sub>	42.7 $\pm$ 12.4 <sub>a</sub>	17.2 $\pm$ 9.5 <sub>c</sub>	39.0 $\pm$ 11.9 <sub>a</sub>	23.2 $\pm$ 8.0 <sub>b</sub>	7.8 $\pm$ 2.8 <sub>d</sub>	29.0 $\pm$ 14.0
Capital intensity <sup>i</sup> (k€ AWU <sup>-1</sup> )	4.60 $\pm$ 3.59 <sub>a</sub>	3.33 $\pm$ 2.49 <sub>a</sub>	10.80 $\pm$ 10.22 <sub>bc</sub>	3.14 $\pm$ 2.58 <sub>a</sub>	6.73 $\pm$ 3.64 <sub>b</sub>	21.56 $\pm$ 9.67 <sub>c</sub>	5.97 $\pm$ 5.98

n: number of farms; AWU: Annual Work Unit (2080 h year<sup>-1</sup>); k€: thousand euros; POs: Producer Organizations. For continuous variables different subscript lowercase letters within rows indicate significant differences between means at  $p < 0.05$  according to Tukey HSD test or Games-Howell test (when the equality of variances assumption was violated). For categorical variables different subscript lowercase letters within rows indicate significant differences between frequencies at  $p < 0.05$  according to  $\chi^2$  test (z-test and Bonferroni correction). \* Variables included in multivariate analysis. <sup>a</sup> Variable used to assess practical significance of the clusters. <sup>b</sup> The farm is located in Less Favored Area (LFA). <sup>c</sup> Employment degree = (labor required in AWU/labor available in AWU)  $\times$  100; when the variable equals 100 the available labor is fully exploited; values  $< 100$  denote underemployment; values  $> 100$  denote overemployment. <sup>d</sup> Gross profit = gross income – variable costs; gross income includes all incomes from agricultural activities including subsidies. <sup>e</sup> Net profit = gross income – total production costs (variable costs + fixed costs). <sup>f</sup> Rate of return to total capital = (land rent + interests + net profit)/(farm capital + land capital). <sup>g</sup> Return to labor = total labor costs (wages) + net profit. <sup>h</sup> Total production costs = variable costs + fixed costs. <sup>i</sup> Capital intensity = fixed capital costs per AWU; this variable was used to assess criterion or predictive validity of the clusters. Source: Reference [2].

Farming system 5 (FS5): “Specialized medium-sized sheep/goats farms with high off/non-farm income”. With a herd size of 27.82 Livestock Units (LU) of sheep/goats and the UAA almost entirely sown to rainfed cereals/fodder crops (mainly barley) for on-farm consumption (livestock feeding), FS5 was a specialized livestock system. In terms of LLR, FS5 was regarded as large semi-intensive, albeit capital intensity was slightly above-average. Livestock density was far above-average, indicating high environmental pressure. The farmers of FS5 were the least educated and the least organized, with high off/non-farm income. Permanent hired laborers provided only 12.9% of the labor needed, whilst all economic results were below-average.

Farming system 6 (FS6): “Large specialized, capital-intensive dairy cattle farms, with young and educated farm managers”. This system was also a specialized livestock system, with a large herd size consisted entirely of dairy cows (105.5 LU). It exhibited the largest UAA (mostly rented), almost entirely dedicated to rainfed cereals/fodder crops (mainly wheat and barley) for on-farm consumption. Based on the value of LLR, FS6 was regarded as semi-extensive. Livestock density was rather low, yet capital intensity was the highest between systems. The farmers of FS6 were the youngest, the most educated and the most organized. The labor required was the highest, with permanent hired workers providing 45.9% of the labor needed. Economic results were the best or among the best, although without considering subsidies FS6 was not profitable.

## References

1. Eurostat Statistics explained: Livestock Unit. Available online: [http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Livestock\\_unit\\_\(LSU\)](http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Livestock_unit_(LSU)) (accessed on 12 June 2020).
2. Stylianou, A.; Sdrali, D.; Apostolopoulos, C.D., Capturing the diversity of Mediterranean farming systems prior to their sustainability assessment: The case of Cyprus. *Land Use Policy* **2020**, *96*, 104722.