

Economic and environmental indicators of Mertolenga beef cattle and Serpentina goat farms in Montado area

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Introduction

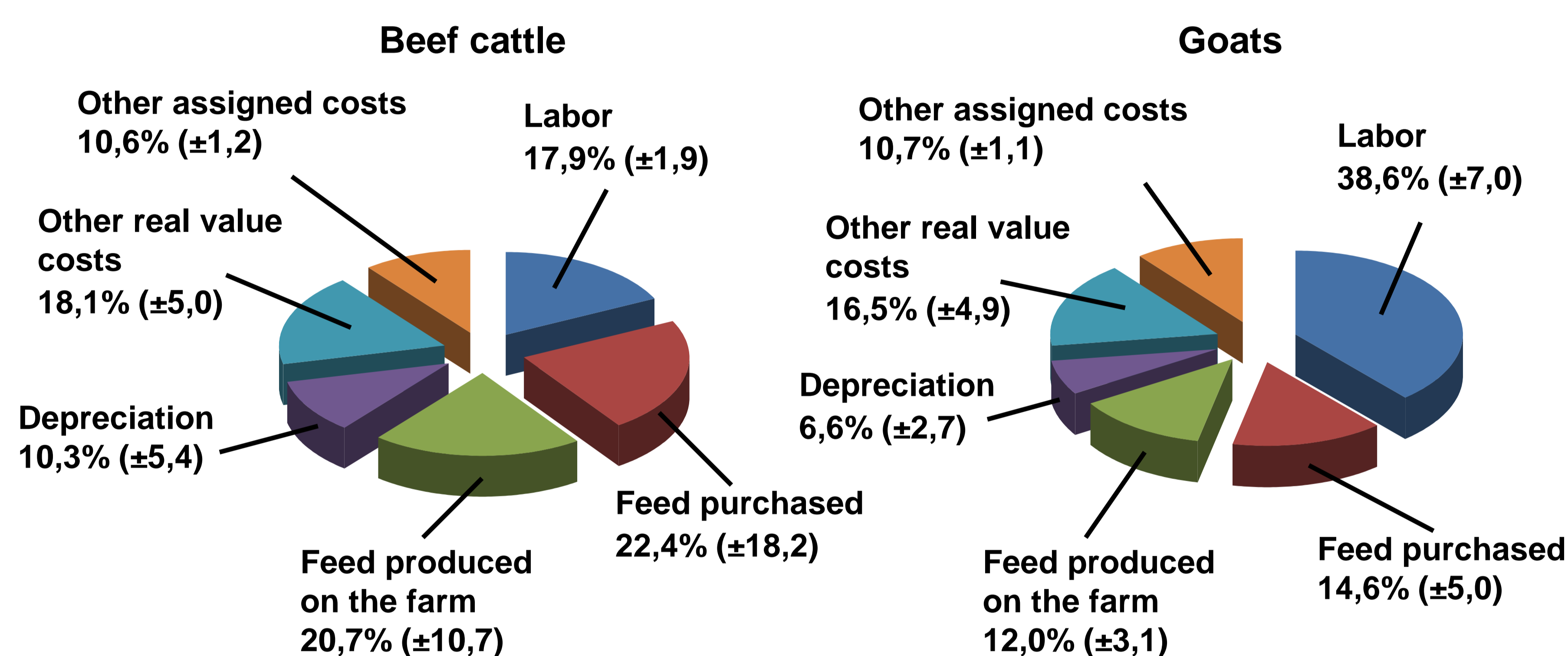
This study aims at determining economic and environmental indicators in beef cattle and goat production systems in 'Montado' farms. Studied farms are associated with ACBM (Mertolengos Cattle Breeders Association) and APCRS (Serpentine Goats Breeders Association), integrating the traditional ecosystem of the 'Alentejo' region. Headers registered in the studied farms were 0.40 ± 0.08 adult cows and 1.39 ± 0.35 adult goats per hectare. The combined densities of holm oak (*Quercus ilex*) and cork oak (*Quercus suber*) on the studied farms were 13.8 ± 6.3 trees per hectare for cattle and 14.7 ± 6.9 trees per hectare for goat production.

Methodology

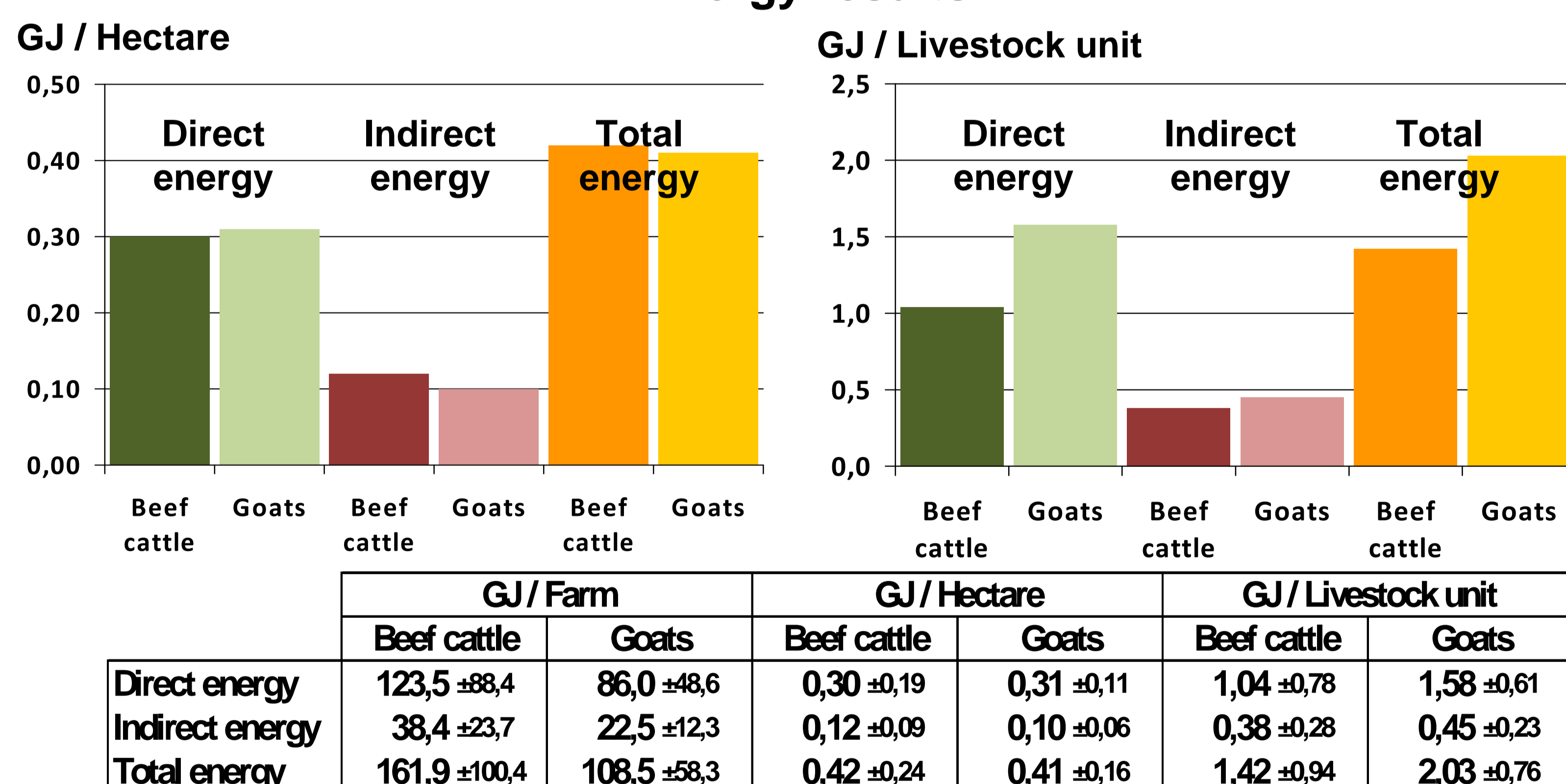
Technical, economic and environmental data was collected in eight farms with a significant area of Montado (four farms per animal species) during 2010/2011. For each selected farm, data on land, other resources and their uses, operating costs and income was obtained for an annual production cycle. In the costs' structure, several items were individualized: labor costs, feed produced on the farm (assigned land value included), feed purchased, depreciation, other real value costs and other assigned costs. In the economic component of this study were considered "Net Added Value", "Entrepreneurial Income", "Profit" and "Labor Income", using hectare of grazing area as reference. Three scenarios of farmers support income were considered: 1) current CAP without integrating Single Farm Payment Scheme (SPS), 2) current CAP including SPS, and 3) CAP post 2013, considering a direct aid per hectare estimated at 150 Euros. Accounting for the energy intensity associated with suckler cow and goat farms included direct and indirect energy inputs, using a methodology integrating the whole farming process.

Results

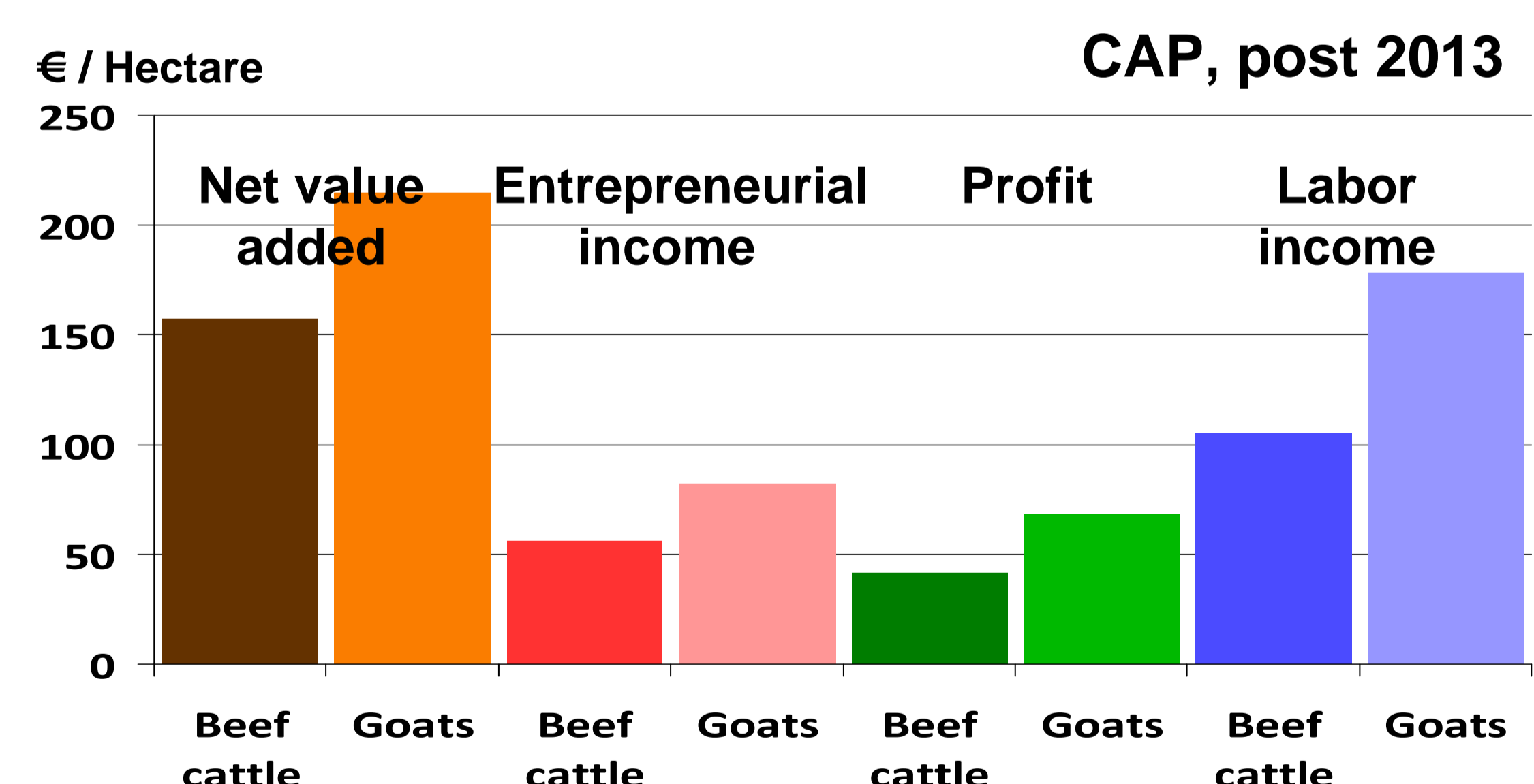
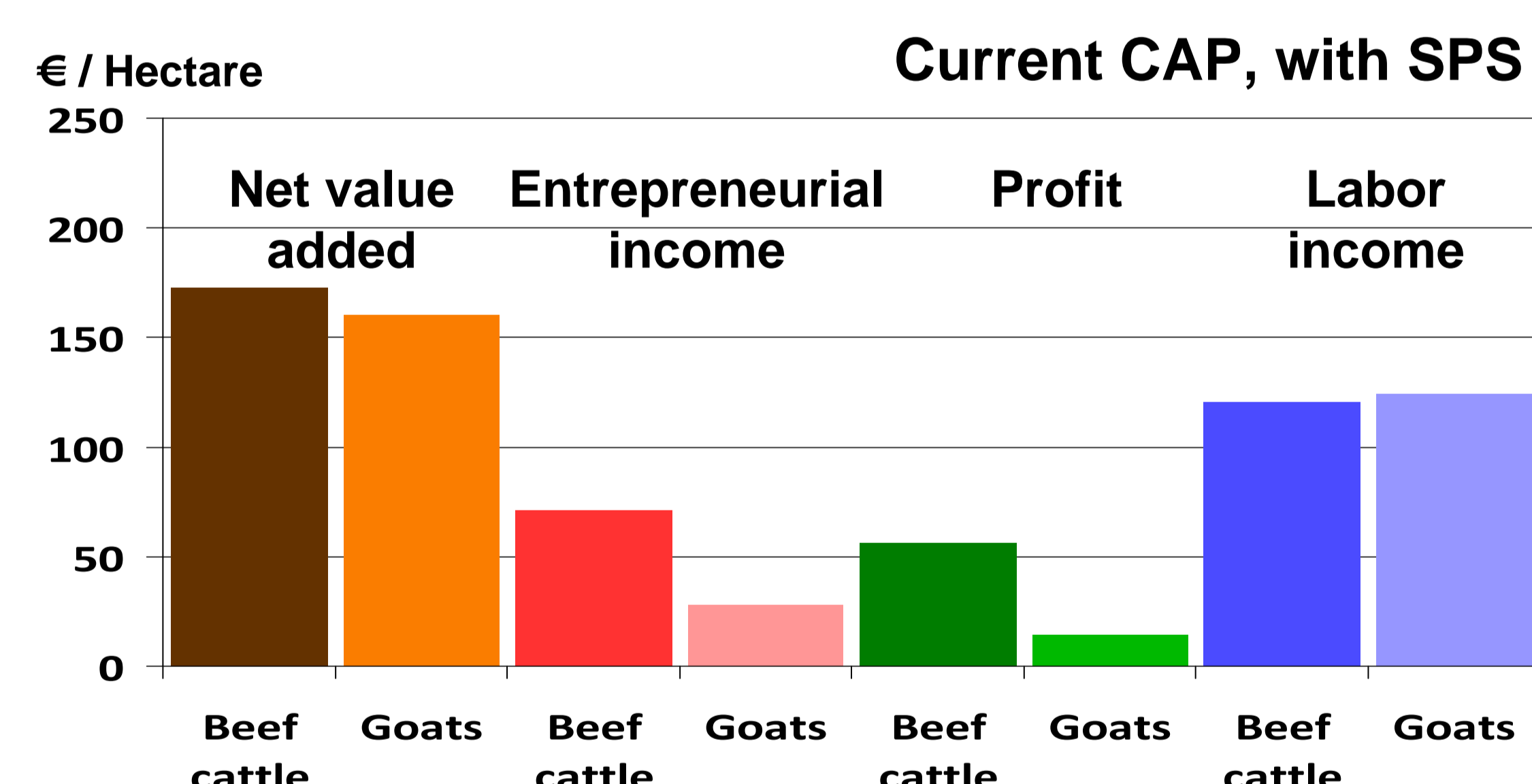
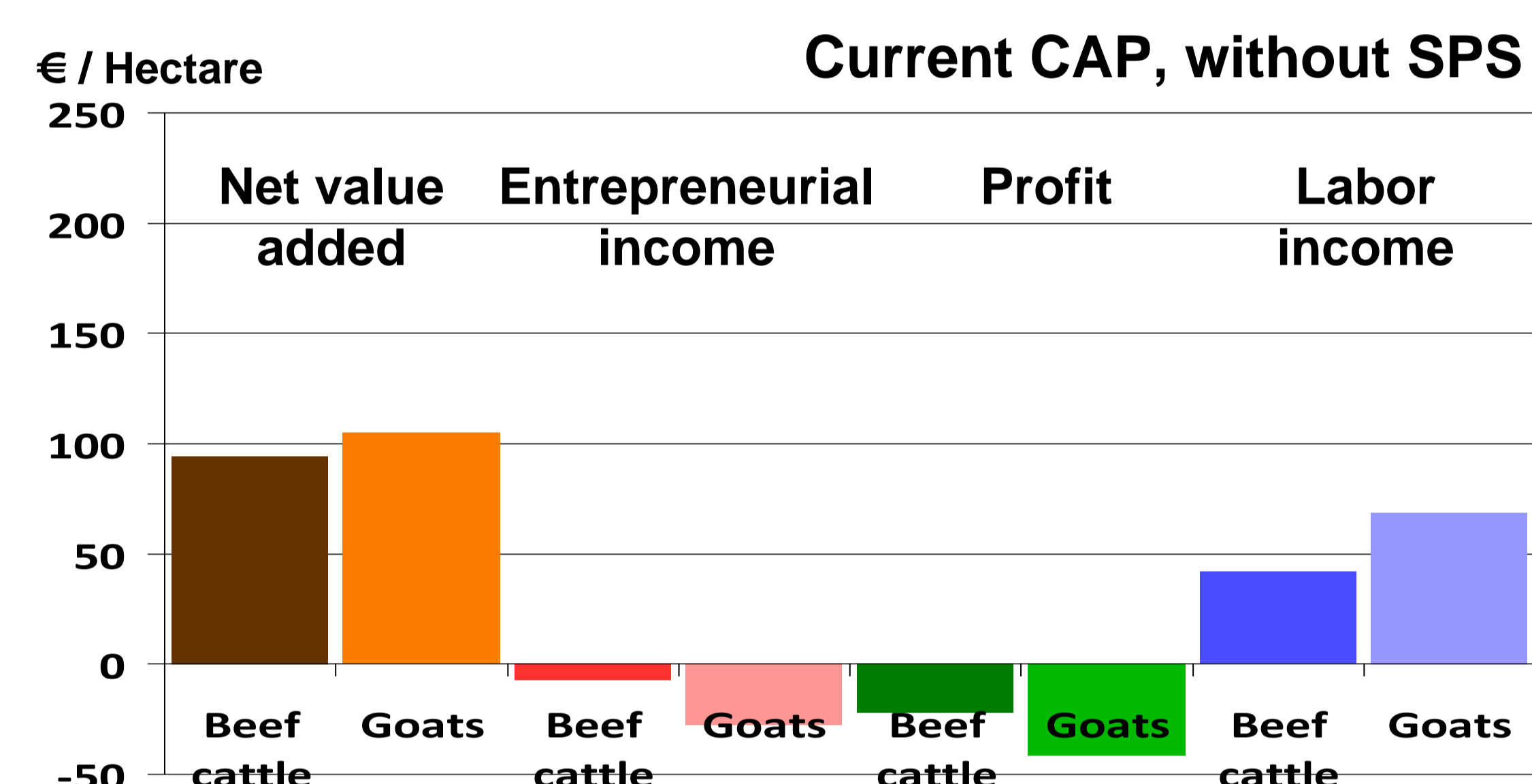
Production costs structure



Energy results



Results considering three CAP scenarios



	Current CAP, without SPS		Current CAP, with SPS		CAP, post 2013	
	Beef cattle	Goats	Beef cattle	Goats	Beef cattle	Goats
Net Value Added	94,4 ±22,4	105,0 ±34,3	172,8 ±33,2	160,6 ±54,2	157,7 ±29,9	214,8 ±46,8
Entrepren. Inc.	-7,1 ±23,3	-27,6 ±18,3	71,3 ±28,1	28,0 ±10,5	56,2 ±30,6	82,3 ±15,4
Profit	-21,9 ±22,2	-41,2 ±21,0	56,5 ±26,3	14,4 ±7,5	41,4 ±30,7	68,6 ±15,6
Labor Income	42,2 ±22,0	68,7 ±28,0	120,6 ±28,6	124,3 ±48,6	105,4 ±27,6	178,5 ±40,4

Conclusions

Within the current CAP framework, cattle beef production farms show better economic performance than goat farms, except for labor income (as a result of the higher volume and cost of skilled labor observed in goat production). In the CAP post 2013 scenario, the goat production farms show better results when compared to those obtained for beef cattle production farms and when compared to those obtained in the current CAP scenario. Globally, beef cattle farms use more direct and indirect energy than goat farms, however, expressed by hectare the energy use is similar in both group farms. Expressed in livestock unit goat farms use more direct and indirect energy than beef cattle farms.

Bibliography

- Audsley E., 1997. Harmonization of environmental life cycle assessment for agriculture. Final Report, Concerted Action AIR3-CT94-2028.
 Avillez, F., Gomes da Silva, F., Trindade, C.P., Avillez, F., Salema, J-P., Pereira, N., 2006. *Planeamento da Empresa Agrícola – Manual Técnico*, Curso de Formação Global em Gestão Agrícola, Mód.I, 1ª Ed.
 Marques, F. e Fernandes, L., 2010. Modelo de registo de informação técnica e económica em empresas agrícolas. Dep. de Zootecnia – Escola de Ciências e Tecnologia – Univ. de Évora, policopiado.
 Pervanchon, F. et al., 2002. Assessment of energy use in arable farming systems by means of an agro-ecological indicator: the energy indicator. *Agricultural Systems*, Vol. 72, Issue 2, pp. 149-172