

Interactions between profit and welfare on extensive sheep farms

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Abstract

Extensive sheep farming systems make an important contribution to socio-economic well-being and the 'ecosystem services' that flow from large areas of the UK and elsewhere. They are therefore subject to much policy intervention. However, the animal welfare implications of such interventions and their economic drivers are rarely considered. Under Defra project AW1024 (a further study to assess the interaction between economics, husbandry and animal welfare in large, extensively managed sheep flocks) we therefore assessed the interaction between profit and animal welfare on extensive sheep farms. A detailed inventory of resources, resource deployment and technical performance was constructed for 20 commercial extensive sheep farms in Great Britain (equal numbers from the Scottish Highlands, Cumbria, Peak District and mid-Wales). Farms were drawn from focus groups in these regions where participative research with farmers added further information. These data were summarised and presented to a panel of 12 experts for welfare assessment. We used two welfare assessment methods one drawn from animal welfare science ('needs' based) the other from management science (Service Quality Modelling). The methods gave complementary results. The inventory data were also used to build a linear programme (LP) model of sheep, labour and feed-resource management month-by-month on each farm throughout the farming year. By setting the LP to adjust farm management to maximise gross margin under each farm's circumstances we had an objective way to explore resource allocations, their constraints and welfare implications under alternative policy response scenarios. Regression of indicators of extensification (labour per ewe, in-bye land per ewe, hill area per ewe and lambs weaned per ewe) on overall welfare score explained 0.66 of variation with labour and lambs weaned per ewe both positive coefficients. Neither gross margin nor flock size were correlated with welfare score. Gross margin was also uncorrelated with these indicators of extensification with the exception of labour/ewe, which was negatively correlated with flock size and hence with gross margin. These results suggest animal welfare is best served by reduced extensification while greater profits are found in flock expansion with reduced labour input per ewe and no increase in other inputs or in productivity. Such potential conflicts should be considered as policy adjusts to meet the requirements for sustainable land use in the hills and uplands.

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