

17. Evaluating and avoiding feed-food competition in Ireland's livestock sectors

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Feed-food competition occurs when agricultural land is used to feed livestock rather than being used directly to produce food crops for humans. As a consequence, the area of agricultural land may need to increase to meet the demand for food production. This means that we are engendering the negative environmental externalities associated with increased agricultural activity (from livestock numbers and the agricultural productivity to feed them) without actually increasing the overall food produced. Hence, by reducing the level of feed-food competition we can move towards a more sustainable agriculture sector that uses land and livestock as efficiently as possible. The efficiency to which livestock use land to produce food can be calculated using land-use ratio (LUR) values. The LUR compares current livestock production yields against the potential yield from the alternative crop from the land used by livestock. Using the production of human edible protein (HEP) as a functional unit, we can demonstrate whether the livestock systems of Ireland (a livestock intensive agriculture sector) are demonstrably producing more HEP than we could have produced from an alternative crop rotation. We demonstrated that Ireland's dairy sector and sheep sectors are positive producers of HEP with a LUR's of 0.61 and 0.92 respectively. The suckler beef and pig systems are engendering feed-food competition with their LUR's of 1.25 and 1.73. With demonstrable feed-food competition occurring in Ireland's livestock sectors, directing how to reduce and avoid this feed-food competition will likely increase net food production. To this end, we will model the effects of reducing feed-food competition in Ireland's livestock sectors and the food production and environmental externality ramifications of reducing feed-food competition. This can outline strategies to assist with planning an agriculture sector that is more environmentally sustainable.

