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| Title of thesis: | Economic instruments for supplying agrobiodiversity conservation | | | |

Insert the abstract text here - the space will expand as you type.

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| Agrobiodiversity is declining across global farm production systems. These declines transcend both farm animal genetic resources (FAnGR) and plant genetic resources (PGR) – the focus of this PhD. Both can sustain greater adaptability and resilience in commercial production through so called ‘option value’. In addition, PGR and FAnGR embody cultural and heritage attributes that are often absent in UK and global agriculture, but remain valued by society. Conservation is therefore important and economic incentives represent a potential supply-side mechanism to improve the status of rare breeds, cultivars and crop wild relatives. Yet, the exploration of incentive tools in the context of PGR and FAnGR remains underexplored but may improve economic efficiency and conservation outcomes. Using different survey instruments and modelling approaches (including choice modelling, linear programming and multi criteria decision analysis) I investigate how rationalising incentive support, through more targeted interventions, could result in pro-conservation outcomes. Our findings suggest optimising subsidy support relies on three key factors. First, institutional and incentive support offered to farmers for conservation should reflect local circumstances, including addressing barriers-to-entry in conservation schemes. Second, identifying least cost suppliers of conservation services may enable more diversity to be conserved at comparable cost. Third, optimising what species, varieties and breeds are supported may improve conservation outcomes through more rationalised investments in diversity. Policy responses to address declining FAnGR and PGR should consider the use of tender instruments (i.e. reverse auctions) to identify least cost suppliers for conservation services. Optimisation modelling and decision analysis techniques can be used to measure trade-offs inherent in different conservation goals and ultimately balance the use and non-use values of diversity that are supplied through the total economic value framework. While the drive for sustainable intensification of production may improve productivity, we need to be clear how breed and cultivar diversity can be encompassed into future policy priorities that reflect the need for greater food security plus cultural and heritage value attributes. The implications of deploying new and potentially disruptive technologies (i.e. gene editing) in the context of farm animal diversity requires further deliberation. |