**PhD Draft Chapters**

1. Romania Fieldwork: Contracts for supplying Farm Animal Genetic Resources (FAnGR) conservation services in Romania

The chapter explores the barriers to participate in rare breed conservation programmes for farmers in small scale semi-subsistence systems in Romania. We use a choice experiment (CE) to determine attributes of a conservation contract which may be less or more desirable from a farmer perspective whilst also measuring WTA conservation subsides. The former are used to inform design of optimal contracts whilst the latter are contrasted with subsidy payment rates (Euro/head livestock/year) proposed by the EU for keeping rare breeds. We address suitable targeting of farmers for such contracts through assessment of socioeconomic variables and how this may influence probability of contractual enrolment among farmers. Finally, we acknowledge the importance of spatial targeting in conservation programmes which delivers dual benefits.

Completeness: 80%

Expected completion date: June 2017

1. Institutions review paper: Valuing rare livestock breeds and farm animal genetic diversity: preferences, institutions and prospects

The chapter focuses on the distinction between ‘rare breeds’ and FAnGR more generally. Highlighting the links between FAnGR and the sustainable intensification (SI) agenda, we discuss the prioritisation of efficiency objectives in the food system (and associated supply chains) over culture and heritage values. Drawing on the latter, we link this example to the case of rare breeds which may possess attributes of value not linked to production efficiency.

Completeness: 70%

Expected completion date: February 2017

1. Zambia PGR paper: Economic costs for in-situ conservation of Crop Wild Relatives (CWR) in Zambia: An application of Competitive Tender (CT)

The chapter identifies the lack of robust economic estimates concerning the costs surrounding in-situ CWR conservation. We discuss the cost implications of using different Area management options (AMOs) for conservation services and how the ‘mix’ of these might lead to fundamentally different conservation outcomes (i.e. species and diversity). The article moves to discuss the aggregated resources (and costs) required should a national in-situ CWR conservation strategy be implemented in Zambia. The article concludes with a summary of economic considerations for in-situ PES type programmes.

Completeness: 20%

Expected completion date: September 2017

1. UK diversity indicator: Developing a prioritisation metric for conserving cattle native breeds at risk (NBAR) in the UK

Prioritisation measures and indicators currently developed to inform FAnGR conservation planning are too data intensive and specific. Consequently, there has been low/no uptake of these indicators by governments or NGO’s to inform their conservation efforts. We develop a simplistic indicator tool (applied to 29 UK cattle NBAR) for prioritisation of breeds for conservation (relative to budget constraints) through collaboration with a number of governmental and non-governmental stakeholders. The new tool represents a holistic set of criteria (diversity; utility and endangerment) to guide conservation planning and ultimately deliver better public value from conservation spend (i.e. maximise benefits relative to cost).

Completeness: 20%

Expected completion date: December 2017

1. Ex-situ conservation costs: Determining optimal sampling strategies and conservation costs associated with ex-situ gene banks

Detailed information about costs of collections will be collected from gene banks in EU member countries through an online questionnaire and evaluated against the gene bank objectives. The degree of overlap between different collections will be analysed and quantified. An LP model will use different scenarios to model the optimal conservation strategy for storing material in gene banks relative to the costs. Thus, we try to describe what an ‘efficient’ gene-banking sampling strategy might resemble to best capture and conserve livestock genetic diversity (within and between breeds).

Completeness: 0%

Expected completion date: March 2018

1. UK competitive tender: Determining least cost conservation service providers for UK native breeds at risk (NBAR): The case of cattle

Develop a pilot CT instrument to measure farmer willingness to accept (WTA) conservation payments (subsidies) for FAnGR conservation services. CT mechanisms have been used by Narloch et al., (2011a&b, 2013) as a method for determining the costs of agrobiodiversity conservation. Bids are assessed not only on price but also other parameters (i.e. the diversity indicator identified in 4) which may improve conservation outcomes whilst considering value for money. Through analysis, we can determine factors influencing farmer WTA estimates and identify least cost conservation service providers whilst considering bid offer characteristics. Socio-economic parameters coupled with GIS modelling could help develop a more targeted approach to subsidy payments and ultimately conservation of NBAR.

Completeness: 0%

Expected completion date: March 2018