



Global Farm Platform for Sustainable Ruminant Livestock: Statement of Intent

The major challenges of the twenty-first century, namely climate change, population growth, environmental pollution, loss of biodiversity and ecosystem services, and availability of food, water and energy, have engendered concerns about the sustainability of livestock keeping and consumption of their products, particularly so for ruminants. Careful consideration of the manifold contributions of ruminant livestock to global food security and rural livelihoods led an international, multidisciplinary group of scientists working under the Worldwide Universities Network (WUN) Global Challenge *Responding to Climate Change* and the UK-USA *Global Innovations Initiative* to create a vision for sustainable ruminant production in the face of these challenges. The critical facets of this vision of transformative change are set out in a Nature position paper '*Steps to Sustainable Livestock*'¹, which advocates an international network of model farms, the ***Global Farm Platform***.

The challenges for future farming are complex and require interdisciplinary solutions that can only be developed and demonstrated on real-world farms. In contrast to conventional research stations, model farms enable researchers to define and implement 'ideal' farming systems that are economically, environmentally and socially sustainable in their local contexts. Model farms can also strengthen links between food producers and consumers, and between our research institutions and our communities, schools, industries and local authorities. Model farms enable evaluation of potential innovative approaches, act as examples to follow, and provide information for policy-makers. Changing farming practices is difficult, and there will be no one-size-fits-all solution. We will identify better practices to optimise livestock systems in different regions, using local resources, breeds and feedstuffs — and produce tangible evidence to convince local farmers.

This ***Statement of Intent*** sets out the Vision, Mission and proposed *modus operandi* of the Global Farm Platform.

Vision: **Sustainable ruminant livestock systems**

Mission:

We will use a global network of model farms – the *Global Farm Platform* – to develop transformational solutions to challenges confronting sustainable ruminant production and promote their adoption. This multidisciplinary international network will provide a unique combination of research and practice for diverse ruminant production systems in a wide range of cultural, socioeconomic and climatic zones.

Plan:

The Global Farm Platform offers an unrivalled opportunity to carry out high quality scientific investigation in centres of excellence, allowing us to progress further and faster than would otherwise be possible working as individual institutions. We will use the Platform to enhance opportunities for development of large trans-national research proposals, collection and sharing of big data, scientific exchanges and for application of cutting edge technologies. The Platform will further provide a unique vehicle for training of early-career researchers.

To realise our vision we will involve a wide range of stakeholders, engage with the farming community, share a common interdisciplinary research strategy and standardised methodologies, educate and build capacity as detailed in the appendix. This initiative will make us the 'go-to' hub of knowledge for sustainable ruminant production systems in the global context.

¹ Nature: 6 March 2014, Vol 507, p.32-34.



Statement of Intent

Appendix

Stakeholders

- Farmers
- Rural communities
- Industry organisations
- Supply chains
- Research community and funders
- Governmental and non-governmental organisations
- Policy makers
- The public, including consumers
- The media

Engage and support the farming community

- Ensure farmers contribute to the research agenda and dissemination of best practice
- Gather an evidence base on the impact of ruminant livestock systems
- Highlight farmer focus on production, economics and the environment
- Link groups of farmers and researchers in each country
- Encourage endorsement of the Global Farm Platform by the farming community

Common interdisciplinary research strategy

- Share and standardise methodology and data collection
- Catalogue types of information collected at each platform
- Leverage information from relevant big data
- Test hypotheses in different systems
- Promote long-term experimental studies responsive to emerging trends
- Research ruminant systems in the context of life-cycle assessment
- Address '*Sustainable intensification*'²
- Quantify biodiversity and genetic diversity in agro-ecosystems
- Design systematic breeding programmes
- Recognise '*impact-value relationship*' for ruminant systems, including *social licence to operate*³
- Develop an economic framework applicable to all model farms, including market and non-market values e.g. environmental and public health benefits and costs
- Optimise feed utilisation including rumen fermentation
- Develop resilient plant-soil systems for ruminant production
- Standardise measures of animal health and welfare
- Enhance livestock product quality including traceability
- Incorporate best practice from similar/related farming systems
- Incorporate automation and technology for efficiency

Education

- Involve undergraduate and postgraduate students in interdisciplinary projects
- Build capacity and transfer knowledge to consultants and farmers
- Promote scientific training, exchanges and lifelong learning

²A process in which yields are increased without adverse environmental impact and without the cultivation of more land. (Reaping The Benefits: Science and the Sustainable Intensification of Global Agriculture. Royal Society 2009.

http://royalsociety.org/uploadedFiles/Royal_Society_Content/policy/publications/2009/4294967719.pdf

³ Maximising animal welfare and reducing environmental footprint