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## How can food and farming research deliver for the long-term public good?

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Meeting the demands of a rapidly growing global population will require substantial improvements in agricultural productivity, whilst agriculture must become more sustainable and resilient. Food and farming research is helping us achieve these goals, to ensure a safe and high-quality supply of food sufficient to deliver future food and nutritional security.

Research is delivering significant improvements across the agriculture and food system and providing economic and social benefits to the UK through increased productivity, improved quality and safety, increased trade and exports, and protecting the wider environment for generations to come.

Our world-class research capabilities in institutes, centres, universities and businesses are harnessing the genomics revolution in crop and livestock breeding for improvements in traits including resilience, sustainability and resistance to pests and diseases. We are developing and using new tools and digital technologies, robotics and autonomous systems, big data, machine learning and artificial intelligence to revolutionise farming practices in the UK and further afield.

To understand real-world challenges, research into sustainable agricultural systems is integrating the biology of crops and farmed animals with farm management and the wider environment. This requires balancing production (including optimising potential trade-offs) with maintaining the natural capital on which agriculture and other ecosystem services depend.

Food and farming research is of key economic and social importance to the UK and globally. As the UK's largest public sector funder of agriculture and food security research, BBSRC takes its responsibility for future generations seriously. Our community is harnessing the step changes in understanding the biology of crops and farmed animals and combining this with novel innovations and new technologies to help address the global food and farming challenges.

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