Parliamentarians for Agroecology

Parliamentary Briefing: Agroecology and Seeds
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As pressures on food systems intensify—from climate instability and biodiversity loss to rising input costs and supply chain disruption—there is growing recognition that the resilience of agriculture depends not only on farming methods, but also on the diversity and accessibility of seeds.

At present, the UK seed and plant breeding system is increasingly concentrated around a relatively narrow set of commercial priorities and high-input agricultural models. While this has supported significant advances in plant breeding, it has also created concerns about declining crop diversity, reduced farmer autonomy, and limited breeding activity targeted at agroecological and low-input systems.

Key asks

Parliamentarians for Agroecology (P4A) would encourage you to:

- **Submit a written question to Defra** to ask how they are supporting independent and agroecological plant breeders, particularly in relation to variety registration, heterogeneous seed systems and low-input farming needs.
- **Utilise committee sessions** (EFRA or EAC) to explore the importance of crop diversity, farmer-led innovation and regionally adapted varieties

Seed policy today

Since the 1990s, seed legislation has increasingly evolved around systems of intellectual property protection. These systems have provided important incentives for commercial innovation, but concerns are growing internationally that highly concentrated seed systems risk declining biodiversity and reducing farmer autonomy. In the long term, this will result in increased vulnerability within food systems and a lack of natural climate resilience.

The International Union for the Protection of New Varieties of Plants (UPOV) is the international framework that underpins Plant Breeders' Rights in the UK and many other countries. Established in 1961, UPOV aims to encourage investment and innovation in plant breeding by granting breeders exclusive rights over the commercial use of new plant varieties. To qualify for protection, varieties must generally be distinct, uniform, stable and new. Supporters argue UPOV is essential for innovation and food production, while critics contend that it can favour large commercial breeding systems and contribute to reduced crop diversity and barriers for independent breeders and farmers. However, provision exists for governments to implement bespoke "Sui Generis" arrangements that cater for specific objectives that might otherwise be disadvantaged by UPOV. Such models have been successfully adopted by countries such as India and Malaysia and there is a strong case for the UK to similarly utilise the benefits afforded by this provision.

Genetic diversity for resilience

Seed and genetic diversity are essential to building resilience within the food system and adapting to the climate and nature crisis. Modern agriculture relies heavily on a narrow range of highly uniform crop varieties, leaving food production vulnerable to pests, diseases,

extreme weather and supply chain shocks. Diverse crops and livestock provide a vital buffer against these risks, as different varieties respond differently to drought, flooding, heat, pests and changing environmental conditions. Traditional landraces, heterogeneous populations and regionally adapted varieties often contain important resilience traits lost through intensive breeding focused primarily on yield and uniformity.

Independent breeders, farmers and growers play a vital role in developing and maintaining crop diversity through farmer selection, modern landraces, heterogeneous populations and regionally adapted varieties. These systems often preserve important traits relating to flavour, nutrition, resilience and adaptation to local growing conditions. There is an urgent need for a more balanced approach to plant breeding and seed policy—one that protects innovation while also safeguarding biodiversity, resilience and the public interest. Recent comparative research has suggested that more balanced models can support sustainable development goals and farmers' rights while still protecting breeders' interests.

Agroecology and Seeds

Agroecology is increasingly recognised internationally as a practical framework for creating resilient food systems that work with ecological processes rather than against them. Defined by the UN Food and Agriculture Organization (FAO) as an approach that applies ecological and social principles to farming and food systems, agroecology seeks to strengthen the relationships between soils, water, plants, animals and people while supporting resilient rural economies and healthy food production.

Seeds sit at the heart of this transition. Different farming systems require different crop characteristics. Organic and low-input systems, for example, often require varieties with stronger natural disease resistance, better nutrient efficiency, wider genetic diversity and greater adaptability to variable local conditions. Yet many current breeding programmes remain primarily geared towards standardised, high-input production systems.

Innovation for Plant Breeding

P4A would support the creation of a protected legal and regulatory space in which plant breeders can voluntarily commit varieties under an "open-source" or commons-based arrangement. Such a framework could support collaborative innovation while maintaining access to crop genetics for future breeding, helping to strengthen biodiversity, regional adaptation and resilience within the food system. Importantly, this would not replace the existing commercial system, but create additional space to operate alongside it.

Any alternative framework should continue to uphold high professional standards, including strong traceability, quality assurance, transparency and market confidence equivalent to existing systems. Many small-scale seed producers and independent breeders already demonstrate exceptionally high levels of stewardship and accountability within the seed sector. This approach is not a challenge to innovation, but an opportunity to broaden the UK's plant breeding landscape, supporting agroecological innovation, resilient rural economies, specialist markets and long-term food security, while helping position the UK as a leader in climate-adapted agriculture and sustainable food system growth.

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