**Challenges and Opportunities**

Some of the challenges to the successful adoption of agroforestry and opportunities that agroforestry systems can offer are highlighted below, along with how the Farming & Forestry Grant can overcome or help deliver them.

**Challenge:** Insufficient evidence and high costs of data collection.

*Evidence on the environmental impacts of food could incentivise producers and retailers to improve product environmental sustainability. However, data collection is constrained by costs and time and there are concerns about placing additional demands on farmers.*

Measuring sustainable environment-food system interactions

<https://researchbriefings.files.parliament.uk/documents/POST-PN-0702/POST-PN-0702.pdf>

**How can we help?**

**Farming & Forestry Grant:** This grant pilot will fully support acquiring a range of data, which could demonstrate the product’s and process’s environmental credentials and help justify further investment in nature friendly sustainable practices.

**Opportunity:** Improved yields, improved soil health and reduced soil erosion.

*Scientific evidence now shows that the adoption of agroforestry can increase yields by a factor of two (average 96% in a multistudy review), depending on crop type, local conditions, and level of expertise. These yield increases have been shown to reflect multiple ecosystem services provided by the trees, including enhanced soil nutrient status (e.g., through nitrogen fixation), reduced crop stress (e.g., through reduced temperature and rainfall extremes), reduced soil erosion (binding of soil by roots), and regulation of water supply (hydraulic uplift of deep water by tree roots. Furthermore, the yield improvements can be highly sustainable because agroforestry maintains soil fertility and can even restore degraded lands.*

Agroforestry Can Enhance Food Security While Meeting Other Sustainable Development Goals

<https://journals.sagepub.com/doi/full/10.1177/1940082917720667>

**How can we help?**

**Farming & Forestry Grant:** The grant supported integration of trees, guided by an appointed agent, allows the applicant to benefit from these potential increases in yields and soil health while be fully funded.

**Opportunity:** Improved animal welfare.

*Trees in agroforestry systems benefit animal welfare by providing shade and protection. The protection includes protection from wind, but also in the case of poultry a perceived protection from predators supporting the poultry in using the entire range area which is beneficial in terms infection risk and risk for excessive nutrient load in certain areas of the range.*

*The foliage from the trees may represent a significant feed resource depending on tree species, in particular in terms of energy, protein and micronutrients for cattle.*

Agroforestry for livestock farmers: Results of innovations<https://www.agforward.eu/documents/D%205.14%20Agroforestry%20for%20livestock%20farmers%20results%20of%20innovations.pdf>

**How can we help?**

**Farming & Forestry Grant:** The flexibility of the grant allows us to support a wide range of agroforestry systems, so applicants can follow their passions or interests.

**Challenge:** Knowledge and funding inhibit the uptake of agroforestry.

*The top three factors inhibiting the uptake of agroforestry are 1) a lack of conceptual understanding and knowledge of agroforestry, 2) a lack of grants, subsidies or funding opportunities, and 3) a lack of practical understanding and knowledge of agroforestry.*

Increasing adoption of agroforestry in the UK

<https://www.organicresearchcentre.com/wp-content/uploads/2021/06/AF-ELM-Test-Evidence-Review-Policy-Brief-1.pdf>

<https://www.researchgate.net/publication/348339423_Barriers_to_uptake_of_agroforestry_in_the_UK>

**How can we help?**

**Farming & Forestry Grant:** For applicants that reach the second stage of the grant, the NFC will pair them with agents to advise them and design the scheme. The grant will cover the cost of the agent in designing and implementing schemes.

**Challenge:** Lack of maintenance planning and support.

*The biggest problem for existing agroforestry plantings has been a lack of detailed planning plus the adequate resources for tree care in the early years. Trees are a long-term investment, and they require a long-term approach. Farmers need to know their work and farm plans will be properly supported.*

The Promise of Agroforestry: Lessons from the Field

<https://landworkersalliance.org.uk/wp-content/uploads/2018/10/Promise_of_agroforestry_web_pageview.pdf>

**How can we help?**

**Farming & Forestry Grant:** For applicants that reach the second stage of the grant, the NFC will pair them with agents to advise them and design the scheme. The grant will cover the cost of the agent in designing and implementing schemes. With a 25-year agreement, and a competitive tender approach, applicants can benefit from the level of financial support that works for them.

**Opportunity:** The sale of environmental benefits.

*Across the three case studies, arable farming generated higher farm incomes than the agroforestry or tree-only systems, but the arable systems also created the greatest environmental costs. By comparison the agroforestry and tree-only systems generated lower CO2 emissions and sequestered more carbon. Applying monetary values to the environmental externalities meant that the equivalent annual values of the agroforestry and tree-only systems were greater or similar to that for the arable system in the UK case study.*

Whole system valuation of arable, agroforestry and tree-only systems <https://www.sciencedirect.com/science/article/abs/pii/S0959652620323301>

**How can we help?**

**Farming & Forestry Grant:** The aims of the grant pilot include the development of marketable environmental services and support for applicants to access additional revenues. The competitive tender approach allows applicants to balance support and income at a level that suits them.

**Challenge:** Insufficient financial support and complicated schemes will restrict the move towards more sustainable practices.

*Payments must be sufficiently generous to make it worthwhile for farmers to switch from conventional farming to more sustainable practises. Otherwise, the temptation will be to farm even more intensively to make up for lost revenue.*

*Accessing schemes that support land use change will need to be as straightforward for farmers otherwise uptake will be limited by bureaucracy, despite the interest of farmers.*

*At present, most of the Government money that goes into food related innovation is directed towards scientists and academics. In many of the other areas where innovation happens – on farms, for example, there has long been a funding drought.*

National Food Strategy: An independent review for Government

<https://www.nationalfoodstrategy.org/>

**How can we help?**

**Farming & Forestry Grant:** The competitive tender approach allows farmers to take control and set out the support they require to be bold and innovative. It is designed to be easy to understand and navigate. The grant will support the gathering of evidence to help inform future decision making.

**Opportunity:** Improved productivity.

*Despite numerous studies demonstrating the higher productivity of agroforestry systems (AFS), these results contradict the views of many farmers, who see AFS as unproductive and thus as financially unviable. Given that there is a need to increase food production significantly by 2050, high-yielding agroforestry provides a viable option to contribute to the yield increase to meet the increase in food demand due to population growth and changes in food consumption patterns.*

*Although site and system specific, crop and tree yields produced in agroforestry generally required less land or fewer resources in terms of light, water and nutrients compared to monoculture.*

Agroforestry Benefits and Challenges for Adoption in Europe and Beyond

<https://www.mdpi.com/2071-1050/12/17/7001>

**How can we help?**

**Farming & Forestry Grant:** Applicants can work with knowledgeable agents to design systems to increase yields or reduce inputs. They can also share information to inspire other farmers and leave a legacy greater than their own landholding.

**Opportunity:** Improved soil health.

*Nutrient availability and cycling have been shown to be greater and more efficient in agroforestry systems (AFS), compared to conventional agro-ecosystems. AFS enhances the growth of arbuscular mycorrhizal fungi, which enhances litter decomposition, resulting in enhanced plant-available nutrients.*

*AFS have several documented benefits to reduce the non-point source pollution of ground water and aquatic bodies due to reduction and filtration of surface runoff and enhanced infiltration into the soil to recharge the aquifers. For example, a combined food and energy system recorded a water-holding capacity of 45% higher compared to a conventional wheat production system. Similarly, soil erosion prevention in a combined food and energy system was 3.3 Mg ha−1 year−1 lower than in conventional wheat production.*

*Agroforestry systems improve soil stability and prevent erosion through several processes.*

Agroforestry Benefits and Challenges for Adoption in Europe and Beyond

<https://www.mdpi.com/2071-1050/12/17/7001>

**How can we help?**

**Farming & Forestry Grant:** Applicants can work with knowledgeable agents to design systems to benefit productivity by protecting or improving soil health, while also protecting water quality and creating additional wildlife habitats.

**Challenge:** Supply chains and incentives have supported the wrong outcomes.

*Supply chains often reward farmers more for productivity and meeting consumer demand rather than protecting the natural capital that healthy soils provide. Year-round consumer demands for produce, and a “chronic” lack of profitability in farming, have cemented the need for maximum production through intensive farming, a major cause of soil degradation, and may encourage practices harmful to soil. Precarious farming incomes do not encourage a financially risky switch to sustainable land management practices that might reduce food production in the short term, require significant upfront investment, or that might need trial and error to get right due to England’s geodiverse landscape.*

Soil Health: A House of Commons Committee report

[https://publications.parliament.uk/pa/cm5804/cmselect/cmenvfru/245/report.html#](https://publications.parliament.uk/pa/cm5804/cmselect/cmenvfru/245/report.html)

**How can we help?**

**Farming & Forestry Grant:** The grant can support schemes that require time to mature and become productive, and the competitive tender approach allows farmers to take control and set out the support they require. Environmental considerations such as soil health are fundamental to NFC objectives.

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**Challenge:** Contrasting attitudes and evidence.

*Widespread agreement across the sample is apparent that adopting farm woodland or agroforestry (AF) would lead to carbon offsetting and improve landscape appearance. On the downside, it was also a widely held view that AF would reduce yields on adjoining land due to competition for water, nutrients and light. There was less universal agreement, although still believed by most sample farmers, that AF adds to job satisfaction and enhances their reputation as farmers. There is much less acceptance that AF can positively contribute to farm income, reduce soil erosion, or that there are suitable markets available for AF products, or even on-farm uses for these. The contribution of farm woodland or AF to farm income was by far the most important statement. This perception is a significant barrier to adoption, especially when coupled with the fact that farm woodland or AF is widely believed not to positively contribute to farm income and reduces the productivity of adjoining land.*

Farmers’ attitudes towards, and intentions to adopt, agroforestry on farms in lowland South-East and East England

[https://www.sciencedirect.com/science/article/pii/S0264837723001345#bibliog0005](https://www.sciencedirect.com/science/article/pii/S0264837723001345" \l "bibliog0005)

**How can we help?**

**Farming & Forestry Grant:** The evidence shows that a well-designed agroforestry system can positively contribute to a farms productivity while reducing soil erosion and increasing habitats for wildlife. There are many examples of farmers with successful productive agroforestry systems. The Farming & Forestry Grant pairs applicants with expert agents to ensure the design delivers the required outcomes, and the tender approach to the grant allows applicants to bid for the level of support they require to balance the perceived risks.