REPORT 3: ‘Transferable Lessons for Role Model Farming’ (for use in Co-Design Laboratories)

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TASK REQUIREMENTS

Report 3: '*Transferable Lessons for Role Model Farming'* is the third report that responds to the requirements of *Task 5 – The 'Role Model' Farmer* of the *CoBioEcon* project (2021-2027). This report stands alone, but it is recommended the previous reports are read consecutively for context.

Sub-task 5.3 *'Transferable Lessons for Role Model Farming'* contained two subtasks detailed below:

6. To develop baseline strategies and recommendations for the role model farmer for testing in co-design labs towards a co-produced regional strategy.

7. To generate baseline strategies and recommendations in line with the European Commission's Green Deal, the Farm to Fork Strategy and the United Nations Sustainable Development's Goals; and following the tenets of the 'just transition', sustainability, circularity, the cascade principle and climate action principles.

1. INTRODUCTION

Report 3: 'Transferable Lessons for Role Model Farming' sets out the multi-scalar policy context within which the baseline strategies and recommendations are grounded. In response to '*Subtask 7. To generate baseline strategies and recommendations in line with the European Commission's Green Deal, the Farm to Fork Strategy and the United Nations Sustainable Development's Goals; and following the tenets of the 'just transition', sustainability, circularity, the cascade principle and climate action principles'*, please note the agricultural just transition is identified as a barrier to the development of the bioeconomy in *Report 2 'Enabling farmers to transition to circular farming practices'.* The baseline strategies typified by farmers in this report are synonymous with their general practices identified in *Report 1 'Characterising the 'role model' farmer'*. The recommendations that follow are practical, forward-looking suggestions based on transferable lessons learned by role model farmers. These recommendations are divided into activity type. For completeness, the enclosed *Bibliography* was accessed to develop the questions for the *Farmer Facilitator Innovation Workshops* which developed the recommendations.

2. POLICY CONTEXT

The development of Ireland's bioeconomy takes place within an evolving international, European and national landscape in which farmers are culturally embedded (Mannion et al. 2026). Using a multi-scalar policy context helps explain why farmers' decisions in relation to the bioeconomy are not shaped by one policy alone. Instead, their choices may reflect a combination of the sustainable development goals ('SDGs') (UN, 2015), EU regulations, emerging Irish bioeconomy policy, local initiatives and practical farm-level realities.

2.1 United Nations Sustainable Development Goals ('SDGs')

The sustainable bioeconomy directly supports the SDGs (UN, 2015) by advancing SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land). It replaces fossil-fuel reliance with renewable biological resources to transform agri-food systems, cut carbon footprints, and restore

ecosystems. Schroeder et al. (2019) identify the extent to which circular economy practices are relevant for the implementation of the SDGs. The strongest relationships exist between circular economy practices and the targets of SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 15 (Life on Land), however, Warchold and Pradhan (2025, p1) identify that while the bioeconomy 'can drive progress towards the SDGs, a balanced distribution of synergies and trade-offs constrains its impact that requires collaborative effort'. The authors report that adopting a more integrated and collaborative approach which 'maximises synergies and minimises trade-offs can strengthen the impact of the bioeconomy', advancing Europe closer to achieving the 2030 Agenda for Sustainable Development (UN, 2015). Given the identification of the bioeconomy in the implementation of the SDGs, the role of small holder farmers is embedded in sustainable food production and protectors of food security as part of the SDGs. Terlau et al (2018) point to small holder farmers (identified as having small acreage, being independent, a family-run business with low use of technology) as the 'backbone' for the implementation of the SDGs, however, the authors note that farmers have encountered barriers making it difficult for them to drive the bioeconomy forward. The SDGs help frame the bioeconomy as a means for advancing economic development, while recognising planetary boundaries, which is then transposed into European policy.

2.2 European Policy

Current EU policy includes *The European Green Deal* (European Union, 2026) which sets out a plan to transform Europe's economy, energy, transport, and industries for a more sustainable future. 'Agriculture plays a central role in *The European Green Deal* with various policies and strategies converging to promote sustainable agriculture and food systems' (Boix-Fayos and de Vente, 2023, p1). *The Farm to Fork Strategy* (European Union, 2020) is core to *The European Green Deal* and approaches agriculture from a sustainable food perspective. Boix-Fayos and de Vente (2023) draw on multiple sources of data including policy documents, scientific literature and global data to identify the transition towards more sustainable agriculture requires more

recognition of the role of farmers in social and economic policy formation. Linking to this, Park and Grundmann (2023) locate the agricultural sector as a primary and core sector of EU bioeconomy strategy which has not been sufficiently embedded in the bioeconomy policy framework and note that neglecting the needs of stakeholders, such as farmers, could have serious implications for sustainability. The *Strategy for a Competitive and Sustainable Bioeconomy* (European Union, 2025) identifies that the bioeconomy has the potential to advance the European Union's environmental goals and develop a circular economy without damaging nature and aligns with the *Vision for Agriculture and Food* (European Union, 2025). A key area of action within the *Vision for Agriculture and Food* is to create a competitive and resilient sector. To support this, the EU (European Union, 2025) have set out 25 amendments to CAP legislation, the most relevant to this research, includes enhancing the attractiveness of the simplified payment scheme for small farms by raising the annual lump payment ceiling to €2,500, removing conditionality requirements whilst also allowing beneficiaries to participate in eco-schemes, increasing investment opportunities (up to €50,000) for young and small farmers, reduction of the administrative burden on farmers, and better recognition of organic farming.

2.3 Current and Emerging Irish Bioeconomy Policy

The Irish Government's vision for the bioeconomy is to place it as a global leader through harnessing Ireland's natural resources, exploiting opportunities available and avoiding unintended consequences. The *Bio-Éire* project (2015-2017) (Walsh et al. 2017) was a foundational, two-year research initiative funded by the Department of Agriculture, Food and the Marine, led by Teagasc to identify and evaluate commercial opportunities for expanding the Irish bioeconomy. Data gathered from the *Bio-Éire* project informed the 2018 *National Policy Statement on the Bioeconomy* (Department of the Taoiseach, 2018), which had at its core several guiding principles, such as sustainability; cascading; precautionary; food first; area-based local and regional development. Since the publication of the *National Policy Statement on the Bioeconomy*, the Government has created a *Bioeconomy Implementation and Development Group* collectively presided over by the Department of Agriculture, Food and Marine and the Department of Environment, Climate and Communications, to direct bioeconomy initiatives with all stakeholders. The BIDG has delivered several

major actions including the setting up of a *National Bioeconomy Forum 1.0*, (established in October 2020), comprising industry representatives and experts, and the creation of the *Irish Bioeconomy Network* whose actions the BIDG co-ordinate. The network consists of leading organisations, centres, clusters, and programmes actively promoting engagement and raising awareness of the bioeconomy and its continuing development. With the publication of *The Whole of Government Circular Economy Strategy 2022-2023 – Living More Using Less* (Department of Climate, Energy and the Environment, 2021), the bioeconomy has been positioned as a sector (that includes agriculture) in the circular economy, albeit the Irish bioeconomy's policies, strategies and action plans do not exist in isolation from other relevant governmental strategies. In 2023, Ireland's overarching strategy for a circular, low-carbon bioeconomy was set out in the *Bioeconomy Action Plan 2023-2025* (Department of the Environment, Climate and Communications and the Department of Food, Agriculture and the Marine, 2023). The roadmap contains 33 actionable steps across seven pillars, aiming to shift agricultural and industrial production toward sustainable, bio-based solutions and renewable resources. Recent changes to the governance of the Irish bioeconomy also include the renewal of the *Irish Bioeconomy Forum 2.0* in March 2024, with increased membership of 52, and the Expert Advisory group now comprising 19 members. Both the *Irish Bioeconomy Forum 2.0* and the *Bioeconomy and Implementation Group* are tasked with driving policy recommendations and direction.

In October 2026, Ireland's first bioeconomy strategy was published (Department of Climate, Energy and the Environment and the Department of Food, Agriculture and the Marine, 2026). In the *Bioeconomy Strategy 2026-2030 - BioScale 2030: Advancing a Sustainable Bioeconomy for Ireland*, farmers are located in two key sectors; *Sector A: Agri-Bioeconomy and Circular Nutrients* and *Sector E: Circular Bioeconomy: Food and Other Organic Wastes*. Key sector targeted actions relevant to this research in which the farmer (or producer groups, that is, groups of farmers working collaboratively) are identified include (Ibid. p54):

A4: Explore opportunities for the creation of producer groups under the next *Common Agricultural Policy 2028-2034* and examine the potential for using existing rural and community development structures and funding mechanisms, including LEADER where appropriate, to support community-led and place-based bioeconomy initiatives.

A6: Strengthen advisory services and knowledge transfer systems to support farmer participation and co-innovation in shaping emerging bioeconomy value chains.

A7: Develop targeted education and skills initiatives related to circular agriculture and biobased processing technologies.

A8: Support the development of circular nutrient systems that reduce nutrient losses while enabling the sustainable reuse of organic resources.

A9: Promote agricultural bioeconomy practices that contribute to improved soil health, biodiversity and water quality outcomes.

A10: Strengthen co-ordination between agriculture, climate, energy, enterprise and research policy to support the development of agri-bioeconomy value chains.

A11: Support the development of multi-actor partnerships connecting farmers, processors, research organisations and public bodies to advance circular agri-bioeconomy projects.

In *Sector E: Circular Bioeconomy: Food and Other Organic Wastes*, key sector targeted actions include (Ibid. p68):

E1: Support the development of infrastructure for the collection, processing and valorisation of organic waste streams including food waste, wastewater residues and other organic resources.

E2: Improve the quality and traceability of organic waste streams including wastewater to support higher-value bioeconomy applications.

E4: Promote the use of circular organic resources within agriculture, energy systems and industrial processes.

E8: Support circular organics systems that contribute to reduced greenhouse gas emissions and improved resource efficiency.

E9: Ensure the development of organic resource value chains supports environmental protection and aligns with circular economy objectives.

Policy transposition is the process where a government turns an international agreement or a regional legislative rule, such as a European Union directive, into its own national laws. Using Ireland as a case-study, Faulkner et al. (2024) examine how the objectives contained in the EU's '*Sustainable Bioeconomy for Europe*' (European Commission, 2018) are adapted and implemented at a national level applying a narrative policy framework (see Kuenzler et al. 2025) to analyse how national bioeconomy policy aligns with EU objectives using *Bioeconomy Action Plan 2023-2025* (Department of the Environment, Climate and Communications and Department of Food, Agriculture and the Marine, 2023). The authors assess the implications of bioeconomy policy for institutional capacity, policy coherence, and sustainable development, focusing on the challenges primary industries face in adapting to these policies. They note that the broad objectives within EU policy make difficult demands on a primary sector such as agriculture, which results in misalignment between policy objectives and capabilities, and exacerbates existing inequities between stakeholders. Policy coherence is essential for the transition to the bioeconomy. However, policy

incoherence has been identified in the literature with misalignment between the four Strategic Policy Objectives of the *National Policy Statement on the Bioeconomy* (Department of the Taoiseach, 2018), leading to a 'silo' approach (Kelleher et al. 2019). More recently, O'Riordan et al. (2025) in their probing of Irish bioeconomy governance identify six themes that need prioritisation in the bioeconomy: roles and responsibilities; building capacity (people); the approach to regulation; stakeholder engagement; monitoring and the use of data; knowledge generation and sharing. Barriers to, and support for, implementation and commercialisation of the bioeconomy were also identified. The authors identify a level of frustration connected to lack of awareness of the relevance and potential of the bioeconomy across central government, and a lack of embeddedness of the bioeconomy within policy divisions in relevant departments. The dearth of information and knowledge in relation to the bioeconomy and how it can benefit each sector/stakeholder was also viewed as a particular shortcoming. The centralisation of government was also identified as an issue impacting the building of alliances between and across multiple cross-sector stakeholders in the Irish bioeconomy, with local government lacking integration of staff across several key areas. Given these factors, collaboration, therefore, is key for a Just Transition to the bioeconomy and this is particularly relevant in regional parts of Ireland, such as the West of Ireland (OECD, 2026), for example, which faces a combination of socio-economic and environmental challenges that underscore the need for a transition to a circular bioeconomy.

3. BASELINE STRATEGIES

The baseline strategies typified by farmers in this research are synonymous with their general practices identified in *Report 1: Characterising the 'role model' farmer*.

In short, the key practices are:

- Adoption of sustainable agricultural practices
- Farmer mobility for knowledge transfer and exchange for use in Ireland
- Rejection of 'expert advice' to pursue their vision for their farming 'business'
- Willingness to 'stand out from the (farming) crowd'
- Risk-taking (calculated)
- Active networking in the bioeconomy
- Attending farmer discussion groups

4. RECOMMENDATIONS

The following recommendations are practical, forward-looking suggestions based on lessons learned by role model farmers. There is one overarching recommendation. Other recommendations are divided into activity type.

4.1 Recommendation for all farmers

1. Conversion to organic production.

4.2 Recommendations for dairy farmers

1. Optimisation of herd through AI genetics.
2. Increase of milk quality through monitoring of somatic cell count.
3. Close management of the grassland (use of multi-species swords).
4. Viewing the farm as a complete ecosystem that is a sustainable business.

4.3 Recommendations for tillage farmers

1. Planting of 'tolerant' crops.
2. Sowing earlier in response to weather variability.
3. The use of 'chopped straw' as fertiliser.
4. GPS and yield mapping.
5. Soil health monitoring.
6. Reduce chemical (N) use by whatever means available.

4.4 Recommendations for sheep farmers

1. Selection of species and their wool type (grouped by the fineness and texture of their fleece) for wool production.

2. Re-use of wool into wool logs.

3. Membership of a wool co-op.

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