



OUTREACH CALL

D3 User Needs and Innovation Solutions Report

PoliRuralPlus has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101136910.

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OUTREACH D3 User Needs and Innovation Solutions Report

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OUTREACH CALL



**Scoping Exercise to Identify
Opportunities for Job creation and
Business Growth in the Circular
Economy in County Monaghan
IRELAND**

On behalf of the Czech Technical University in Prague





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The content of this deliverable does not reflect the official opinion of the European Union. Responsibility for the information and views expressed herein lies entirely with the author(s).

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1. Introduction and Background

1.1 PoliRural Plus

The PoliRuralPlus project is funded under Horizon 2020 and builds on the successful results of PoliRural provided for rural regions which was funded under a previous round. In this project, the project partners want to address the research agenda established by PoliRural and broaden foresight, planning and development scope to regions that include both urban and rural areas, and anything in between. Central to PoliRuralPlus are 9 pilot projects that serve as proving grounds for an EU-wide integrated approach to territorial planning and action foresight which will lead to policy change and the sustainable exploitation of opportunities to diversify the rural economy and embrace challenges encountered across members states in today's world.

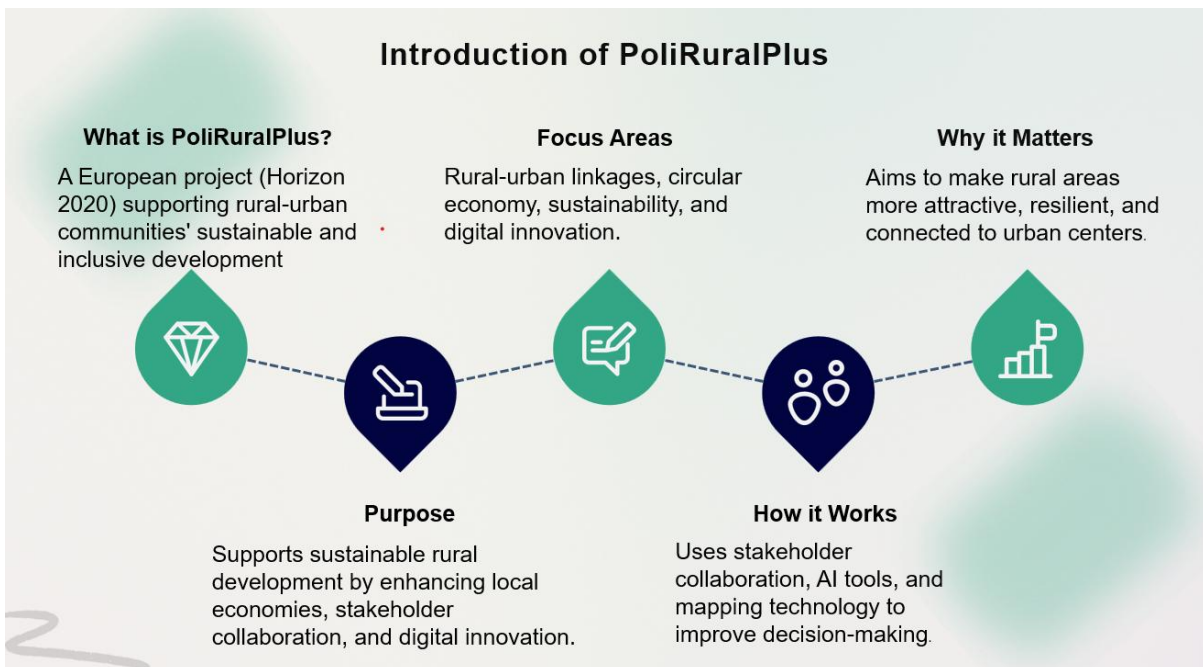


Fig.1 PoliRuralPlus Introduction

1.2 Outreach call Proposal

McAdam Consulting Services Ltd submitted a proposal following a competitive outreach call for the topic of Green Business and was subsequently successful in being awarded the contract to carry out the research project.

The primary objectives of our project is to carry out a scoping exercise to identify key areas within the business, farming and community and voluntary sectors that there is potential to develop Circular Economy businesses over the next 5 years in County Monaghan. This involved a combination of desk research and also consultation with key stakeholders in each cohort.

The research exercise will provide a scoping document that can provide focus for the pilot to specify areas to concentrate efforts on- The original mobilise call was for the area of green business is very broad and this needs to be considered in order to make meaningful impact on areas where greatest potential lies

There are a multiplicity of supports around the general green area – however the major gaps is the generation of ideas, considering viability and the implementation/ testing of same. Also many opportunities require partnership or collaboration – or clustering of number of people or businesses to provide a viable proposition – no organisation is doing this at present.

The area of County Monaghan is encountering major challenges due to its dependency on livestock based agriculture and associated supply and processing industries. This project will directly address these challenges brought about by changing policy relating to climate change and European and local level and the proposed reductions in livestock numbers. It also will examine exploiting the untapped potential of the large waste streams created by the intensive poultry and mushroom industries in Ireland of which county Monaghan is the epicentre. Monaghan as a county has very unique challenges as being physically located in a border location on the border of the European union.

This proposal will strive to create synergies and complement the new LEADER programme actions in this area and also the new LECP for County Monaghan that focuses heavily on climate change and diversification of the rural economy. The lack of innovation in this field has proven barrier to uptake European programmes and this project proposes to utilise the entrepreneurial spirit of this region for economic, environmental and social gain.

In a County Monaghan context the area of Green Economy and more specifically Circular Economy has been highlighted as a growth area from which the projects core objectives can be best achieved.

County Monaghan, located in a strategic location adjacent to the border with Northern Ireland, is positioned to tap into the growing trend of the circular economy , which emphasizes the reduction, reuse, and recycling of resources. Transitioning to a circular economy model offers significant opportunities for the local rural economy, particularly in terms of diversification and future proofing jobs and employment in sectors such as agriculture, manufacturing, waste management, and innovation. This report identifies key opportunities for leveraging circular economy principles in County Monaghan, evaluates potential economic impacts, and suggests a roadmap for taking the next steps to implementation. Monaghan as a county has very unique challenges as being physically located in a border location on the border of the European union. The area's economy is heavily dependent on agriculture and in particular intensive agricultural enterprises of poultry, mushrooms and dairying due to land type unsuitable to conventional tillage or crop production. The area also as an opportunity has a long history and culture of entrepreneurship and creativity and we plan to exploit these traits in the local economy.

1.3 Circular Economy

For the purposes of this scoping exercise the definition of Circular Economy used was;

‘A circular economy is a way of using resources that minimizes waste, pollution, and environmental impact. In a circular economy, waste and primary raw material use are minimised by maintaining the value of products and materials for as long as possible’

We understand that the circular economy is built around three core principles:

1. Design for longevity: Creating products that are durable, repairable, and reusable.
2. Maintain and extend product life: By using products for as long as possible through reuse, repair, and refurbishment.
3. Regenerate natural systems: Encouraging practices that restore and replenish resources, reducing the environmental impact.

Ultimately business opportunities that are generated in this sector in County Monaghan could either be manufacturing or service based.

2. Methodology

This scoping exercise took place over a period of 3 months commencing in December 2024 and was completed in March 2025.

A list of key stakeholders was compiled that would form the core group with whom consultation would take place. It was established at an early stage that the level of knowledge in the area of circular economy within County Monaghan was somewhat limited and stakeholders from outside of the County area were also added to the stakeholder list to broaden the skillset of the consultees and also to bring new ideas to the conversation that were not present locally. Many of the stakeholders envisaged to be included in the broader Green Economy research piece were not relevant to the narrower topic of Circular Economy and it required re consideration as the methodology to be employed to best engage with this cohort. The adjusted methodology as follows was used to undertake this assignment.

Initially a desk research exercise was undertaken to assess the circular economy context and operating environment in Ireland and more specifically available in County Monaghan. This involved the sourcing and review of local, regional and national policy and also supports. Detailed up to date information on volumes of specific waste streams or indeed by products was not available from any source contacted, however some sectoral specific information was available and this was included in this report.

To comprehensively collect user needs within the region, we will employ a range of methodologies:

- Surveys: On to one surveys of key opportunities were undertaken as part of stakeholder interviews with specific questions.
- Focus Groups: Conducting in-person focus groups to gather diverse perspectives and in-depth insights.
- Interviews: Engaging in one-to-one interviews with key stakeholders to capture critical viewpoints and detailed feedback.

Our approach to understanding user needs was designed to ensure inclusivity and comprehensive coverage by ensuring all necessary sectors were invited to participate:

- Representative Sampling: Ensuring a representative sample with good geographic coverage within the pilot area. This will include a mix of demographics, sectors, and geographic locations to reflect the diversity of the region.
- Accessible Participation: Providing multiple modes of participation, including phone and in person interviews to accommodate those not tech-savvy. This ensured that all voices are heard, regardless of their comfort with technology.

We anticipated and encountered several challenges and had strategies in place to address them:

- Technology Literacy: To engage those who are not tech-savvy, we will provide paper surveys and offer phone interviews as alternatives. Following consultation with the initial cohort of stakeholders we decided to collect all views and data via one to one or face to face group consultation.
- A greater level of ideas generation took place where a number of stakeholders had the opportunity to pool ideas and opportunities and collectively develop potential business opportunities that could be exploited.
- Encouraging Participation: To maximize engagement, we invited the majority of key stakeholders individually and partnered with the local enterprise office to encourage attendance and involvement in the research pilot. The in person engagement culminated in a facilitated consultation event that took place in a central community venue in Castleblayney which was easily accessible and well attended.



Pic.1 Consultation Workshop Circular Economy Scoping Exercise

3. Desk Research- Circular Economy Business Context in Ireland

Ireland and County Monaghan's economy has grown rapidly in recent decades, Ireland now having the EU's second-highest per capita GDP. But this has come at a cost. Economic growth has led to an increase in material consumption — a major driver of carbon emissions and environmental degradation.

In 2024, Ireland advanced its commitment to a circular economy by setting specific targets and implementing initiatives aimed at reducing waste and promoting sustainable resource use. The National Waste Management Plan for a Circular Economy 2024-2030 outlines several key objectives:

- **Waste Prevention:** Aiming for a 1% annual reduction in household waste generation throughout the plan's duration.
- **Increased Recycling:** Targeting an increase in the recycling rate of domestic and commercial waste from 40% to 50%.
- **Reduction of Landfill Usage:** Striving to eliminate unprocessed waste going to landfills.

Additionally, the plan sets a national reuse target of 10 kg per person per year and aims to reduce food waste by 50% by 2030, aligning with Ireland's commitment under UN Sustainable Development Goal 12.3.

To support these objectives, the Irish government has invested over €2.5 million in Circuléire during 2023 and 2024. This funding supports innovation and demonstration projects designed to facilitate the transition from a linear to a circular economy.

A notable initiative launched in February 2024 is Ireland's first bottle deposit return scheme. Initially facing consumer resistance, the scheme saw a dramatic increase in returns, from 2 million containers per month in February to 111 million by August. By the end of the eight-month period, a total of 630 million containers had been returned, significantly reducing litter and promoting recycling.

Job Market Contribution: It is estimated that approximately 5.5% of jobs in Ireland are linked to the circular economy, with 3.4% being direct circular jobs and 2.1% contributing indirectly through sectors like resource management and knowledge sharing.

These efforts underscore Ireland's dedication to advancing a circular economy, aiming to reduce single use items.

Specific details are not available for the pilot area of County Monaghan however some data is available for Ireland.

3.1 Key Circular economy statistics Ireland

- Ireland's residents consume 22 tonnes of raw materials per person annually
- This surpasses both the EU average of 17 tonnes per capita and the estimated 'sustainable' level of consumption of 8 tonnes per capita.
- The building industry is the largest contributor to Ireland's material consumption, reflecting the housing and infrastructure needs of its rapidly growing population. The services sector, led by booming tech and finance industries, follows closely as the second-largest consumer.
- Over 97% of materials in Ireland's economy come from virgin sources
- Only 2.7% of the materials consumed by the Irish economy come from secondary sources—considerably less than the global average of 7.2% in 2023 and almost 12% across the EU. However, not all non-circular materials are wasted: Ireland's Circularity Indicator Framework shows a broader picture of material flows, including stock build-up.
- Circular Material Use Rate (CMUR): Ireland's CMUR was notably low at 2% in 2020, significantly below the EU average of 12.8%. This low rate is partly due to Ireland's open economy, strong agricultural sector, and high export levels.

The share of secondary materials consumed by the global economy has decreased from 9.1% in 2018 to 7.2% in 2023—a 21% drop over the course of five years.

There is also very significant interest now in Ireland in government. The volume of discussions, debates and articles on the concept has almost tripled over the past five years worldwide and this is also reflected in Ireland. While some progress has been made the performance of Ireland vs our European neighbours or in deed on a worldwide basis is below average.

The following fig.2 shows some key Circular Economy and waste data highlights for Ireland.

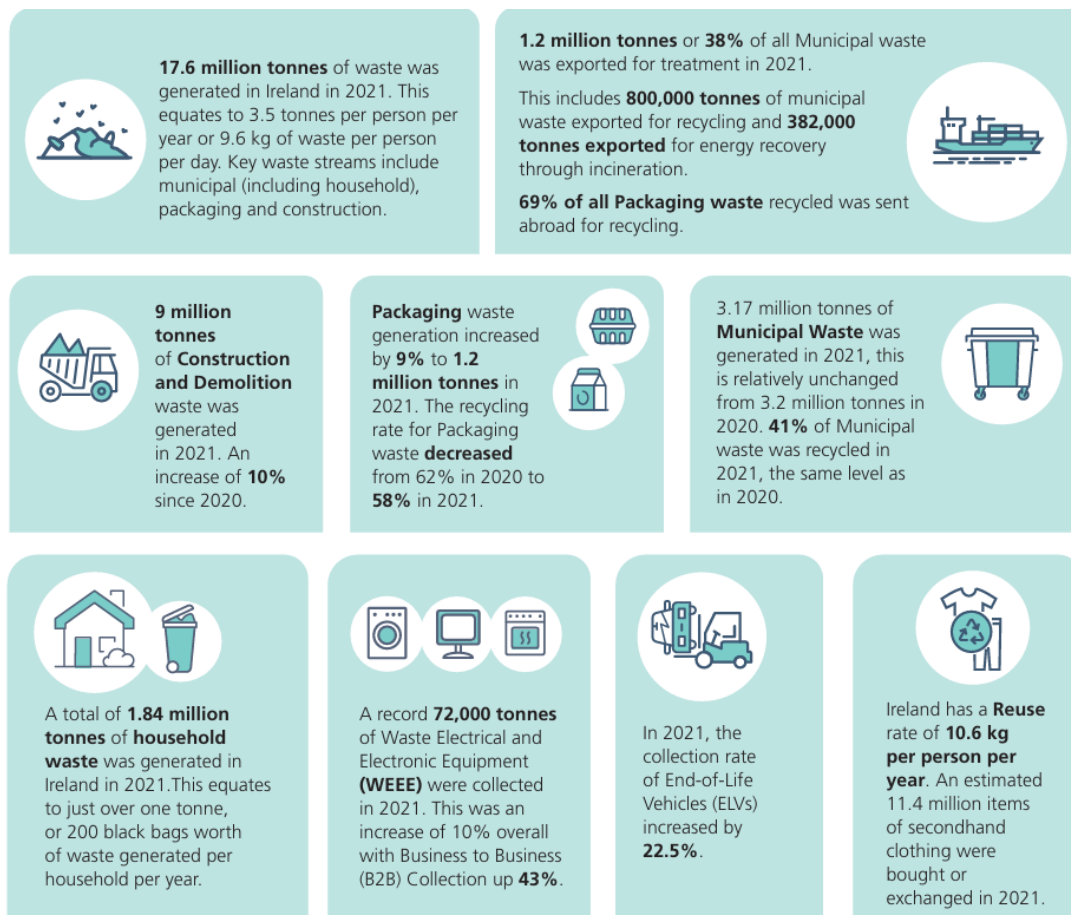


Fig.2 Circular economy and waste data highlights, 2021 – Source EPA 2023

3.2 Local Policy

Local Authorities have been given a remit in relation to development of the circular economy at Council level.

Monaghan County Council has published a Climate Action Plan 2024-2029. The plan has been prepared to meet the increasing challenge of climate change for our county. To secure a sustainable future for the citizens of Monaghan, the 5-year plan contains over 150 climate actions across the 5 themes of: Governance, Built Environment & Transport, Natural Environment, Communities & Sustainability. The Circular Economy is reference 19 times in the document and a number of actions are listed to increase activity in this sector to help address Ireland’s and the Counties Climate Change targets.

3.3 National Policy

The Environmental protection Agency (EPA) has a statutory remit in relation to the Circular Economy in Ireland. In 2021 a 6 year strategy The Circular Economy Programme for Ireland 2021-2027 was launched. Circular Economy Programme incorporates and builds upon the previous National Waste Prevention Programme to support national-level, strategic programmes to prevent waste and drive the Circular Economy in Ireland. The development of the Circular Economy Programme responds to the commitment within the national policy

document The Waste Action Plan for a Circular Economy to reconfigure the National Waste Prevention Programme into Ireland’s Circular Economy Programme.

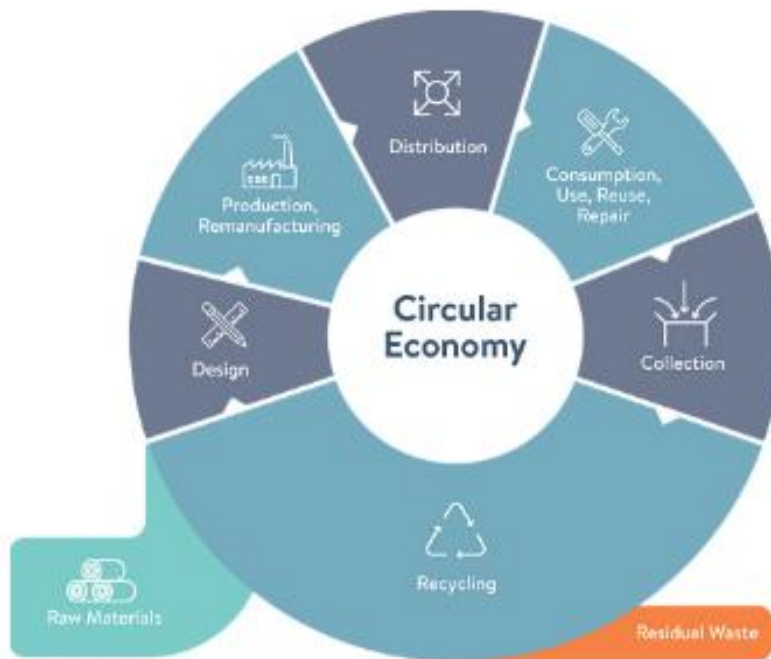


Fig 3. Circular Economy Lifecycle – Source EPA Irelands Circular Economy Programme 2024-2029

A number of key priority areas have been identified for Ireland in the Circular Economy programme as follows;



Fig 4. Circular Economy Priority areas– Source EPA Irelands Circular Economy Programme 2024-2029

3.4 The role of social enterprises

Considerable opportunities exist for community based circular economy initiative in Ireland. Organisations such as the Community Resources Network provide representation and a voice for community led businesses and initiative that have started to make progress into the Circular Economy. www.crni.ie

4. Opportunities for Business creation Identified

Desk research was undertaken in the first instance which involved the review of accessible information in relation to waste streams and byproducts in county Monaghan, and also review of local and national strategies and programmes targeted at development of the circular economy it was decided to cluster the consultation findings and to conduct the focus group workshops under the following 4 headings which it was felt captured the main areas under which opportunities lay. This simplification or clustering of the 7 priority areas in the national circular economy programme under 4 headings allowed for ease of managing the workshops and one to one discussions with key stakeholders.

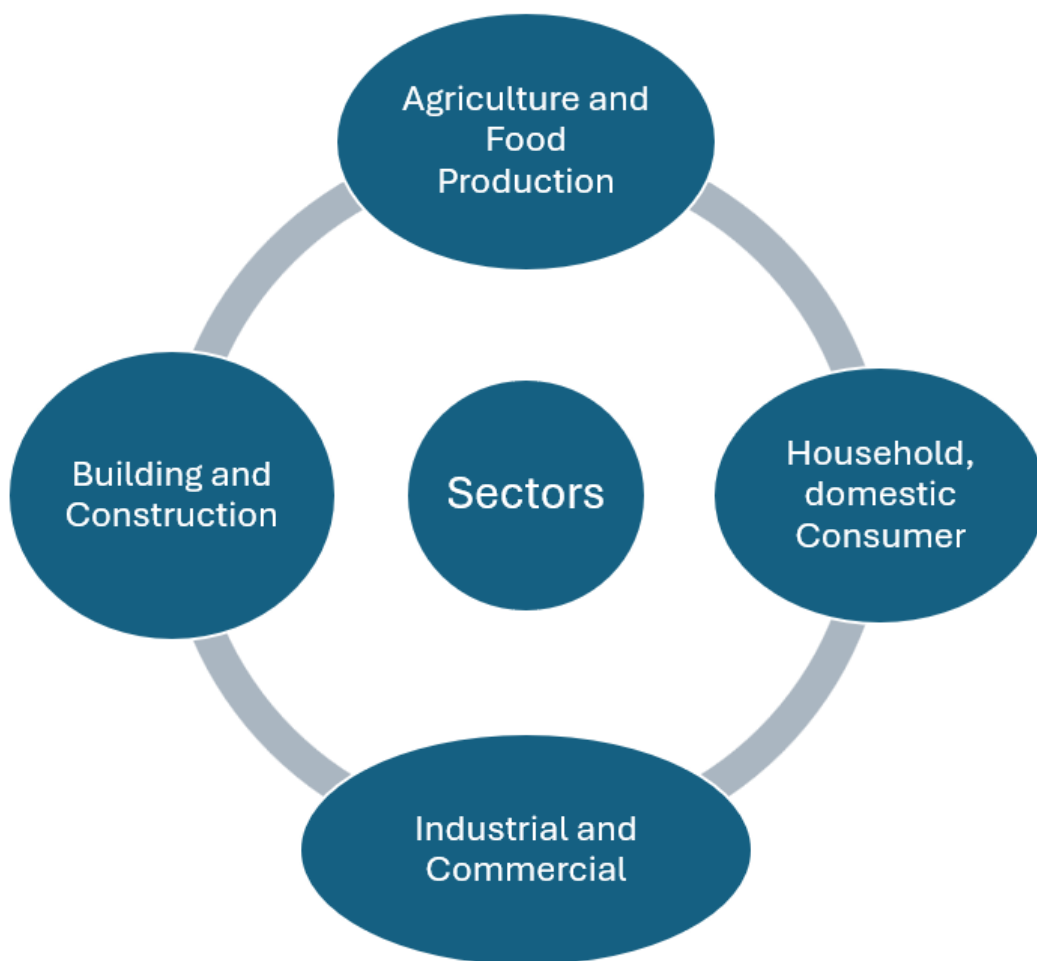


Fig 5. Sectoral areas chosen for the County Monaghan Scoping exercise

The following word cloud provides an insight into key discussions recorded as part of the consultation process which included the one to one interviews and also the focus groups.



Fig 6. Consultation Word cloud

The primary in person consultation events involved bringing together 23 stakeholders and running 3 focus groups/brainstorming sessions to list key waste and by products streams within the county and also to identify opportunities to develop circular economy businesses from some of these streams.

The Local Enterprise office which is part of Monaghan County Council was contacted with a view to engaging with both the business community and also with the public sector organisations. The final event was jointly hosted and publicised by the consultants in partnership with Monaghan Integrated Development Social Enterprise officer and Monaghan Local Enterprise Office and staff from both organisations were present at the event, including the CEO of Monaghan Integrated Development.

In total the following number of stakeholders were engaged as part of the process

- Total SMEs: 21 from businesses / agriculture
- Total Researchers: 3 – CREDIT Technology Gateway, Head of School of Engineering DKIT, Lecturer Interior and Furniture Design- TU Dublin School of Art and Design
- Total Policy Makers/Government Local Development Agencies: 7 – members of staff x Monaghan County Council, MID, Local Enterprise office

- Total Community Members/NGOs: Circulated through PPN office – 7 engaged with project – next PPN plenary will discuss circular economy.
- Educational Institutions: 2 – Dundalk Institute of Technology, Technological University Dublin

The scoping exercise for identifying business opportunities in the circular economy for County Monaghan reveals a variety of sectors where significant potential for innovation, sustainability, and economic growth exists. This analysis covers several key sectors, including agriculture, food production, building and construction, industrial and commercial activities, and household/domestic waste. Below is a detailed analysis of the potential opportunities in each sector, as well as the challenges that could hinder progress.



Pic.2 Focus Group Discussion Circular Economy Scoping Exercise

The following are a summary of the key findings opportunities sector drawn from the consultation process;

4.1 Agriculture and Food Production

Agriculture plays a vital role in County Monaghan’s economy, and its circular economy potential is significant due to the vast quantities of organic waste generated in the region which is unique in Ireland. Circa 70% of the countries Poultry industry is located within 60km of Monaghan Town.

Key waste streams identified;

- Poultry Litter – 200,000+ tonnes per annum
- Cow manure and slurry
- Spent Mushroom Compost- 100,000 tonnes per annum
- Dairy Washings
- Pig Slurry
- Farm Plastics and IBC cubes and containers
- Silage Wrap/Farm Plastic/Netting
- Waste Packaging and drums
- Animal Feed waste
- Waste oils and lubricants
- Tyres and rubber
- Sprays
- Medicines
- Paint
- Fruit & Vegetables waste / food waste from food retail and food service industry
- Ash Dieback / Japanese Knotweed

At present some of these waste streams are repurposed or segregated for recycling, it is noted however that in particular the poultry industry is becoming increasingly vulnerable due to the increased regulations for nutrients in farming namely Nitrogen and Phosphate application. The development of this industry is now being curtailed due to inability to gain planning for new production units due to waste disposal concerns. Spent mushroom compost follows thereafter as the second largest volume of by product that requires attention for similar reasons. Agriculture in Monaghan is one of the most promising sectors for circular economy business development, offering several opportunities in particular Agricultural Waste Recycling: The conversion of agricultural by-products such as animal manure, crop residues, and food waste into valuable resources, including biogas, fertilizers, and compost. And also Food Waste Recycling: Leveraging food waste from processing plants for bioenergy production or as raw material for other industries (e.g., packaging or cosmetics).

Business Opportunities:

1. Poultry Litter and Anaerobic Digestion:
 - With over 200,000 tonnes of poultry litter produced annually, converting this waste into biogas through anaerobic digestion (AD) represents a major opportunity for renewable energy generation. Biogas can be used for energy production (electricity, heat) or converted into biomethane for use as a renewable energy source. Monaghan has a natural gas pipeline passing through the county and is ideally positioned to locate such a facility. 2 separate AD plant developers were consulted as part of this scoping exercise and both expressed interested in Monaghan as a location to develop an industrial scale plant.
2. Food Waste processing and Composting:
 - Utilizing food waste through composting or anaerobic digestion (AD) can contribute to producing organic fertilizer.

- By-products from this process, such as sulfuric acid and digestate, could be utilized in mushroom compost production and agricultural fertilizers.
 - Potential for increased mulching and processing of green waste previously burned on farms pre 2023 ban introduction.
3. Waste Diversion into Useable Products:
- Circa 2,000 tonnes of Spent Mushroom Compost are produced weekly in County Monaghan and environs. At present this material is land spread and much of it exported to other parts of Ireland, an opportunity exists to utilise some of this by product of the mushroom industry for more productive use.
 - Non-animal by-products like vegetables and green waste can be processed on-site for other uses, reducing waste and enhancing sustainability in local farms and food production.
4. Cattle slurries and manures
- County Monaghan due to the land type of rolling Drumlin landscape has limited opportunity for crop production. The area has land suited to growing grass and livestock based production is present in all parts of the county. The dairy industry in particular produces large volumes of slurry that at present is all being land spread.
 - There is potential to develop business opportunities from utilising this by product by removing water and possibly other nutrients for use as a fertiliser and or soil conditioner. There is potential for use as a feedstock for Anaerobic digestion however the viability of farm based small scale units is not viable at present and access to the ESB or Gas network is not viable due to cost and price paid to producers

Challenges:

- Site Location/Transport/Logistics: The logistical challenges related to transporting organic waste to AD plants need to be addressed. Developing a centralized waste management and collection infrastructure will be critical. A large number of studies have been undertaken in county Monaghan over the last 25 years to attempt to address the disposal of Poultry litter and Spent mushroom compost. These have ranged from incinerator projects to Anaerobic digestion plants, to pelleting and fertilisers plants. Despite the passing of time and advances in technology, at present 1 pelleting plant operates selling poultry litter pellets in relatively modest quantities.
- Access to Finance and Technology: Investment in the infrastructure needed for AD systems and waste-to-energy technologies can be a barrier without proper financial incentives or support.
- Access to electricity grid or gas network for projects that produce same is limited to very large scale units to cover the costs and complexity of same. The price being paid for electricity and gas is significantly lower than in some other countries in Europe making Ireland not as desirable an investment location as elsewhere.



Pic.3 Focus Group Discussion Circular Economy Scoping Exercise

4.2 Building and Construction

The building and construction sector in County Monaghan can significantly benefit from circular economy principles, focusing on materials reuse, waste minimization, and sustainable construction practices. The county like most parts of Ireland has seen very high demand for housing with this trend set to continue for the foreseeable future. This will lead to high levels of building waste which brings not only a challenge but also an opportunity. Key players in the building and construction industry including some of the largest timber frame manufacturers, solar panel installers and concrete products companies are located in County Monaghan. Monaghan has a well-established manufacturing base, particularly in food processing, engineering, and textiles. Circular economy opportunities include: Product Design for Reuse and Recycling: Encouraging local manufacturers to design products that are easier to repair, refurbish, or recycle at the end of their life cycle. Industrial Symbiosis: Encouraging collaboration between different manufacturing companies to exchange waste materials or by-products that can be used as inputs in other industries. These measures could increase the resilience of Monaghan's manufacturing sector, create new business opportunities, and make local industries more sustainable, resilient and future proofed. Construction and demolition waste. Construction waste accounts for over half of the total waste currently being generated in Ireland. Excavated soil and stone waste makes up about 85% of the total; the remainder includes concrete, brick, tiles, glass, metal, plastic and wood. Approximately 8% of total Irish construction and demolition waste is recycled or reused, with most being used as backfilling¹⁵ material and some being sent for disposal. Based on 2021 figures, approximately 8.2 million tonnes of construction and demolition waste was backfilled (7.65 million tonnes) or disposed of at landfills (0.6 million tonnes). Given that so much of this waste is potentially preventable, reusable or recyclable, this is an unnecessary and largely avoidable cost for the construction industry.

Key waste streams identified;

- Site Clearance – Trees, Top Soil, Hardcore, Stone – accounting for 85% of waste in Ireland – less in Monaghan due to Agricultural waste. Exact figures unavailable.
- Used PPE
- Plastics – single use bags
- Quarrying
- Steel Re-bar
- Tiles/Slates
- Rubble
- Wood
- Steel/Metals
- Glass
- Insulation
- Cement/Concrete
- Precast slabs
- Plastic
- Electrical waste/copper/wire
- PVC off cuts
- Paint and coatings
- Packaging

Business Opportunities:

1. Recycling and Reuse of Construction Materials:
 - Wool insulation and hemp-based materials offer environmentally friendly alternatives for construction.
 - Reusing construction and demolition materials to avoid sending them to landfills, which can be processed into new materials like aggregates.
 - Increased use of
2. Tyres and Waste to Biochar:
 - Tyres can be recycled into CIRCOL or used to create biochar, which can be applied in the concrete industry.
 - Waste tyres can also be repurposed for energy generation.
3. Sustainable Transportation and Energy:
 - The use of Hydrotreated Vegetable Oil (HVO) for construction site vehicles could drastically reduce fossil fuel emissions (by 90%), supporting the transition to greener energy solutions.
4. Mobile Waste Processing:
 - Mobile crushing and chipping services on construction sites can reduce transportation costs and keep materials local, improving the efficiency of waste management.

Challenges:

- Legislation: Ensuring that existing laws allow for the easy reuse of materials and that proper environmental standards are met to meet planning and environmental regulations.
- Coordination: Efficient collaboration among building companies, material suppliers, and local authorities is needed to streamline the reuse of materials and integrate circular economy principles into design of new buildings.
- Product design: greater emphasis at design and manufacturing stage of raw materials in the construction industry to re purpose or reuse at time in the future.

4.3 Industrial and Commercial

The industrial and commercial sectors in County Monaghan can greatly benefit from circular economy practices through waste segregation, waste heat recovery, and recycling of materials for integration into new builds, together with extending the operational life of fixtures and fittings through upcycling, maintenance and refurbishing.

This area was seen as very broad and a long list of potential by products and waste streams was identified. A dedicated exercise to cover the dozens of industry and commercial waste stream types would be required to extensively map same.

Key waste streams identified;

- Industrial process Water
- Heat
- Energy
- Packaging waste
- Cardboard
- Raw materials
- Oil
- Grease
- Tyres
- Vehicles / machinery
- Metals
- Energy – Heat & Light
- Oils/Chemicals
- Hazardous Materials
- Transport
- Upgrading Machinery
- Off Cuts from production processes.
- Tyres
- Solvents/C.F.C's

- Paints

Business Opportunities:

1. Reworked Renewable Heating Systems manufacture and installation:
 - At present almost all renewable heating resellers and installers import products from overseas, brand and resell. In the coming years as systems reach end of life and require upgrades large number of old systems will be available for remanufacture.
2. Segregation and Recycling:
 - Implementing more sophisticated waste segregation in industrial and commercial environments (e.g., separate bins for different waste types) can help increase recycling rates and reduce landfill waste. At moment only 2 bin types in most parts of the county, need a green bin
3. Textile Recycling and Waste Electronics:
 - Initiatives like FabBRICK (a French project turning textile waste into bricks) could be adapted to County Monaghan, turning textile waste into building materials.
 - Small electrical equipment, particularly from WEEE (Waste Electrical and Electronic Equipment), can be recycled to reclaim valuable metals and components. At present these materials are transported outside the county for processing or overseas. There are opportunities to reuse some of these materials again, for example electrical panel manufacture, solar panels at end of life being refurbished rather than being replaced – largest solar panel installers in Ireland. located in County Monaghan, similar applies to heat pumps.
4. Plastic Recycling
 - Ensuring that packaging materials are truly recyclable (addressing the greenwashing issue) and eliminating non-recyclable components in commercial products.- at present Monaghan has Shabra plastics based in Castleblayney that recycles certain plastic materials for integration into new plastics, still large volumes of plastics travel out of the county and overseas for processing.
5. Collaboration between businesses:
 - A detailed industry by industry mapping exercise is required to be undertaken far outside of the scope of this report to map how by-products of one industry or business could be the raw materials for another business. There is no evidence to suggest this exercise has ever been undertaken and given the diverse nature of business in the county coupled with a concentration of engineering and food related businesses there would appear to be opportunities here yet to be exploited.

Challenges:

- Coordinating Waste Streams: Proper segregation of waste streams can be a challenge without a structured system in place and ensuring critical masses of waste streams are accessible of uniform quality in order for uses to be considered.
- Supply Chain Issues: Ensuring that the necessary infrastructure and supply chains are established to support the recycling and reuse of industrial waste. At present no mapping exercise has been undertaken for any specific industry sector. This is a very substantial piece of work that needs to be undertaken before significant progress can be made.



Pic.4 Facilitated Focus Group Discussion Circular Economy Scoping Exercise

4.4 Household and Domestic / Consumer

Addressing household and consumer waste and creating opportunities for waste upcycling and recycling at the domestic level will be crucial for a successful circular economy in County Monaghan. Consumers also provide a customer base for upcycled products such as for example the recently established Hub Furniture recycling facility in Monaghan town or the Carrickmacross Toy Library.

Key waste streams identified

- Electronics
- Coffees cups
- Short term storage
- Clothes
- Mattresses
- Furniture
- Foams

- Fabrics
- Packaging
- WEEE – Batteries
- Food Waste
- Medical Waste
- Litter
- Light Bulbs
- Glass
- Vapes
- Cars
- Clothes
- Textiles
- Paper
- Toys
- Bicycles
- E scooters
- Fossil Fuels
- Paints

Business Opportunities:

1. Social Enterprises for Upcycling:
 - Establishing new social enterprises to manage and process household waste streams (e.g., old furniture, textiles, and electronics) can create jobs and help divert waste from landfills.
2. Upcycling Programs for Toys and Plastics:
 - Providing a supply chain mechanism for upcycled household items like toys and plastic products that can be sold or donated for reuse could help eliminate waste. Charity shops already do this to an extent but there is considerable scope to redirect large volume away from landfill.
3. Education and Awareness:
 - Raising awareness about waste segregation and the importance of recycling correctly could reduce contamination rates in recyclables.
4. Reusable packaging and products production:
 - A number of key packaging companies operate within the county – there is opportunity to utilise this resource to develop new fully recyclable packaging and to pilot the use of same in communities. An example was given during the consultation of recyclable plates for school lunches and issues with satisfactory return of same for reworking into new products. This example demonstrated that the technology in many cases is there, however the will or compulsion within the community or target audience is somewhat lacking.

Challenges:

- **Public Mindset:** Attitudinal change will be required in the local Monaghan population and increasing participation in recycling programs is often difficult.
- **Storage and Capacity:** Charitable organisations and other upcycling hubs may struggle to handle the sheer volume of reusable goods. At present the Hub recycling social enterprise at Teach na Daoine Monaghan is seriously hampered by lack of affordable light industrial workspace for both storage and upcycling of furniture.

5. Challenges and Barriers

While the potential for circular economy business in County Monaghan is significant, there are a number of challenges uncovered as part of this process which need to be addressed to make meaningful progress to development of this underutilised sector of our local economy:

1. **Availability of Structured supports:** No single dedicated resource exists or has been found that collates all of the information in relation to Circular Economy business development or expansion in Ireland. While some supports may of course be generic in nature, dedicated supports also will be required.
2. **Coordination and Access to Best Practices:** Lack of coordination among stakeholders and access to best practices can hinder efforts to adopt circular economy strategies. There is no County based Circular Economy strategy or structured approach to delivery of meaningful change locally reflecting the aspirations of the National Circular Economy Programme for Ireland.
3. **Awareness and Knowledge:** Many businesses and individuals may not be familiar with circular economy and what it might mean for their sector. A single repository or signposting of technical knowledge in the field of circular economy also appears to be absent.
4. **Capital Investment:** Transitioning to circular models may require initial investment in infrastructure, technologies, and research and development. Supports over and above what is currently available will be required in order for some processes and systems to be deemed viable to proceed. E.g. greater levels of supports are available for certain technologies in other jurisdictions for example Anaerobic digestors in Northern Ireland.
5. **Regulatory and Policy Barriers:** Existing regulations and policies may not always align with circular economy principles. For example the upcycling of electrical items is not happening due to lack of knowledge or absence of regulations in this field.
6. **Market Demand:** The success of circular economy ventures often depends on market readiness for recycled products and services. A cultural change will be required in the Irish context to educate consumers of the need to reuse and upcycle materials and products. An attitudinal shift is already starting to take place however further work is required in this regard.
7. **Circular Economy recording and data metrics:** It proved extremely challenging to source readily available information on waste stream/by products and indeed circular economy activity in County Monaghan. It would appear more circular economy activity is taking place that remains unrecorded and while certain sector, primarily driven by EU regulations, such as WEEE, batteries, tyres, plastic bottles etc. do have systems in place others require considerable work to accurately measure progress at a local or regional level.
8. **Classification of by products:** Many by-products from different parts of the economy are currently classified as wastes. This in itself creates a barrier in that in the case of many products they are limited and heavily regulated in their use once they have the waste classification. Re classification of some to by-products would enable them to be utilised much more easily for productive use.

Overcoming these challenges will require collaboration between local government, national government, entrepreneurs businesses, and researchers/academic institutions.

6. Review of Supports for Development of the Circular Economy in Ireland

A brief review desk top review was undertaken of key supports available for the development of the circular economy in Ireland. Some of these supports are not available in County Monaghan however are noted for the purposes of providing an insight into interventions that have an can be used to develop this sector effectively. It is noted that information on supports was not available in any single location and that a variety of supports are available from different organisations and agencies. An opportunity in the first instance exists for the development of a comprehensive and dedicated guide for businesses in County Monaghan to be developed and provided to interested parties with up to date funding call dates, rates and key contacts.

A. Department of the Environment, Climate and Communications Circular Economy Innovation Grant Scheme (CEIGS)

Objective: support Irish businesses develop circular solutions in product and service design, production.

Target Audience(s): social enterprises, voluntary and community organisations and small/medium businesses (defined here as less than 50 employees).

Total Funding: c.€500,000 per call with indicative grant €50,000 for 1-year projects.

Availability: The 2024 call opened on 19th June 2024 and closed on 19th July 2024

The purpose of this grants scheme is to provide support to projects which work in the Circular Economy space, with the aim of advancing the Circular Economy in Ireland and raising awareness of the need to transition to a Circular Economy. The Circular Economy Innovation Grant Scheme (CEIGS) is a Government of Ireland initiative led by the Department of the Environment, Climate and Communications (DECC).

By funding circular economy projects and enterprises, the CEIGS directly supports the growth of the circular economy in Ireland and provides high-profile examples of best practice.

The CEIGS was established by Minister Smyth in April 2021, and since that first call, CEIGS funding totalling €1,135,107 has been awarded to 23 projects covering wide range of circular economy themes including food waste, plastics, single-use plastics, packaging, construction, textiles and general waste.

B.Environmental Protection Agency (EPA)

Green Enterprise Funding: Innovation for a Circular Economy

Objective: Support innovation projects for the implementation of circular economy approaches in business models.

Target Audience(s): Research organisations, SMEs, multinationals.

Total Funding: Up to €100,000 (this is information of 2022)

Availability: 2024 Call is closed - Updates to come on 2025 Call

The Environmental Protection Agency has an annual grant-aid funding call, named Green Enterprise: Innovation for a Circular Economy. The initiative supports businesses to develop and demonstrate innovative practical applications and solutions that prevent waste and stimulate the circular economy. A circular economy is where no resources are wasted and the value of materials are kept in the economy as long as possible, through reuse, repair, and recycling.

The Green Enterprise funding aims to support innovators in Ireland to develop, demonstrate and implement circular economy approaches in their business models. It is managed through the EPA-led Circular Economy Programme and is co-funded by EPA Research.

The fund is open to projects linked to:

- Plastics
- Construction and demolition
- Food

Resources and raw materials (electrical and electronic equipment, textiles, furniture)
The maximum amount of funding available is €100,000 per grant award. Grant aid is provided on a shared cost contribution basis. An applicant can get from 25% up to 95% of the total eligible project costs incurred, depending on the type of organisation applying.

The programme is being reviewed by the EPA to consider where it fits within the overall funding landscape. As a result, there will be no funding call in 2024. There is no update for 2025.

C.EPA Research Call 2024

Objectives: Enhance Ireland's competitiveness and resilience and inform policy innovation.

Target Audience(s): Research organisations, SMEs, multinationals.

Total Funding: €14.3m awarded in 2023

Availability: Awaiting 2025

The call aims to support innovative research projects to support policy-and decision-making addressing environmental, climate change and sustainability challenges. Applicant may apply under a range of broad thematic areas including facilitating a circular economy.

D.Enterprise Ireland Green Transition Fund

The Green Transition Fund supports companies across each of the different aspects of their decarbonisation journey – from initial planning and capability building to investment, research, and innovation. The fund is comprised of two separate streams:

The Climate Planning Fund for Business includes the following opportunities:

- Climate Action Voucher: €1,800 for advisory support to develop an initial sustainability/decarbonization/circular economy strategy and action plan
- Green Start: Up to €5,000 to fund consultancy to introduce environmental best practice systems.
- Green Plus: up to €50,000 support for training project to improve environmental management capability.
- Strategic Consultancy: Up to €35,000 support to assist large energy user to develop carbon reduction roadmap.

Audience: High-potential start-ups, SME and large enterprise can apply to all the above, except from GreenPlus which is available only for SME and large enterprise.

Availability: any time.

The Enterprise Emissions Reduction Investment Fund include the following opportunities:

- Capital investment for Energy Monitoring & Tracking Systems: Up to €50,000 for companies to put in place systems to monitor energy usage.
- Capital Investment for Decarbonisation processes: Up to €1m to support companies to decarbonise their manufacturing combustion processes.

- Innovation and R&D Grants: From €5,000 innovation vouchers to large scale R&D projects in the areas of sustainability and decarbonisation.

Audience: Manufacturing, SMEs and large enterprises.

Availability: any time.

E. Intertrade Ireland -Innovation Boost

Objective: Support innovation projects for the implementation of circular economy business models.

Target Audience(s): Indigenous SME on manufacturing or tradeable services

Total Funding: c. €50,000

Availability: All year round.

The Innovation Boost aims to support cross-border business on the island of Ireland through developing and embedding innovation through facilitating and funding an academic partner to help industry overcome an innovation or technology gap.

F. Innovation Boost B2B

Objective: Support innovation projects for the implementation of circular economy business models.

Target Audience(s): Indigenous SME on manufacturing or tradeable services

Total Funding: Provides up to €50,000 per partner.

Availability: All year round.

The Innovation Boost B2B aims to support innovative cross-border partnerships and promote business collaborate to solve problems.

G. Community Foundation Ireland

In 2023 The Community Foundation Ireland supported applications from groups interested in developing local Circular Economy Action Plans.

Background- The Circular Economy Fund was set up in 2019 under Community Foundation Ireland's wider Environment and Nature grant-making to encourage sustainable practices in communities across Ireland. It was grounded in evidence that suggested community groups and organisations needed support in the development of a circular economy and to tackle issues related to sustainability.

The mission of the Circular Economy Fund is to invest strategically to raise the profile of circular economy, support the development of skills needed to effectively engage with issues associated with sustainability, and ensure that organisations working in this space are supported to continue their work.

Since 2019, close to €200,000 has been awarded in grants to organisations working on new and innovative approaches to reduce consumption and waste as well as designing and implementing online campaigns aimed at building awareness of circular economy and its impact.

Local and community-based organisations are now being invited to apply for structured grants to develop their Community Circular Economy Action Plans.

Applications were being invited until Friday, 28 July 2023.

Local groups will be supported through Online Training, resource packs and access to experts to develop Community Circular Economy Action Plans which will be supported by grants of up to €2,500.

H. Funding for Subsidised Labour

One potential support is Government funding to address labour costs of the Circular Economy sector. Social enterprises with state-subsidised labour play an important role in providing repair services in areas that might otherwise be poorly served by the Circular economy. Social enterprises engaged in the CE are often reliant on funded positions; for example, under the Tús community work placement scheme and/or CSP.

CSP is administered by Pobal and funded by the Department of Rural and Community Development. It provides robust employment support specifically for social enterprises, providing a contribution towards salary costs for staff and managerial roles. Organisations must apply for CSP funding, for which there is a high level of competition.

A number of social enterprises interviewed to inform this study emphasised the importance of CSP funding and the need for more CSP funded roles to support the sector. While expansion of CSP positions for social enterprises providing products in the CE is desirable, it should be noted that social enterprises account for a small proportion (c. 1%) of CE enterprises in Ireland, and targeted supports for commercial repair enterprises should also be considered.

I. Local Authority Level Circular Economy supports

Local Enterprise Offices- Local enterprise office have a suite of support both in terms of capital grant assistance, feasibility and product development and also soft supports and employment grants.

The majority of these supports are available to businesses operating in the international tradeable service and manufacturing sectors. Applications from existing businesses operating in the circular economy sector or new entrants are welcomed and grant aid of up to 50% can be secured provided the business is located with the county and meets certain qualification and governance requirements.

Monaghan Green Business Hub- Monaghan County Council has initiated the Monaghan Green Business Hub, aiming to foster a community-led approach to circular economy and climate action. This project collaborates with local entities, including the Local Enterprise Office (LEO), Monaghan Town Team, Chamber networks, and the County Monaghan Tidy Towns network. The hub focuses on promoting sustainable business practices and community engagement in environmental initiatives.

Circular Economy Innovation Fund-The Circular Economy Innovation Fund supports non-profit organizations, social enterprises, and small businesses (with fewer than 50 employees) aiming to innovate within the circular economy sector. Grants ranging from €40,000 to €50,000 are available, with a limited number of exceptional projects potentially receiving up to €100,000. These funds are intended to encourage projects that can be scaled or replicated nationwide, promoting sustainability and resource efficiency.

Community Climate Action Fund- Monaghan County Council periodically invites applications for the Community Climate Action Fund, targeting projects that reduce food waste and promote sustainable consumption. Eligible initiatives include community gardens, allotments, repair hubs, community composting facilities, and community fridges. These projects aim to empower communities to take active roles in climate action and resource conservation.

Innovation for a Circular Economy- The "Innovation for a Circular Economy" program, managed by the Local Enterprise Office, offers grants of up to €100,000. These grants support businesses in sectors such as plastics, construction and demolition, food, and resources like electrical and electronic equipment, textiles, and furniture. The funding covers a significant portion of eligible project costs, depending on the type of organization, to encourage the adoption of circular economy practices.

Monaghan County Council's Sustainable Initiatives- Monaghan County Council has demonstrated a commitment to sustainability through initiatives like the Cold-Mix-Recycling project. This pilot program repurposes previously discarded materials into viable, sustainable products, contributing to the county's circular economy goals.

Social Enterprise Opportunities-The County Monaghan Social Enterprise Strategy 2021-2025 identifies potential areas for social enterprise development, including circular economy initiatives such as furniture restoration, mattress recycling, and bicycle repair services. These endeavours not only promote environmental sustainability but also offer economic opportunities within the community.

J. European Level Funding Supports

Horizon Europe- Horizon Europe is European Union's primary funding program for research and innovation. The programme funds large scale international research projects on a variety of topics including the circular economy and sustainability.

Objectives: Improving European competitiveness through innovation.

Target Audience(s): Research organisations, SMEs, multinationals.

For most call proposals you must apply as a team of at least three partner organization from three different EU or associated countries, at least one being from an EU country.

Total Funding: Budget of EUR 95.5 billion for the period of 2021-2027.

Availability: Funding opportunities all year around, deadlines dependent on specific calls.

Innovation Fund- The Innovation Fund is one of the world's largest funding programmes for the demonstration of innovative low carbon technologies, especially with an emphasis on energy and industry. It focuses on projects with European added value that can bring significant emission and greenhouse gas reductions.

Objectives: Support and foster innovation in low-carbon technologies and processes across Europe.

Target Audience(s): Research organisations, SMEs, multinationals.

Total Funding: The Innovation Fund's total budget is dependent on the carbon price and it is estimated to be c.€40 billion over 2020 to 2030.

Availability: Regular calls throughout the year.

Circular Bio-based Europe Joint Undertaking- The Bio-based Industries Joint Undertaking (BBIJU) is a €2 billion partnership between the EU and the Bio-based Industries Consortium which builds on the success of its' predecessor, the [Bio-based Industries Joint Undertaking \(BBIJU\)](#).

Objectives: Develop new technologies to transform renewable natural resources into bio-based products.

Target audience(s): Research organisations, SMEs, multinationals.

Total Funding: For 2024 the call budget is €213 million.

Availability: Calls opened 24th April 2024 and close on 18th September 2024.

EU Just Transition Fund- The EU Just Transition Fund (EUJTF) is Pillar 1 of the European Union Just Transition Mechanism. Its purpose is to assist the most affected territories in transitioning to a climate-neutral economy. In Ireland, the EUJTF supports the economic transition of the Midlands region and focuses on upskilling and employment projects in green enterprise. Not available in County Monaghan.

Target Audience(s): Private, public, and community and voluntary organisations.

Total Funding: Budget of €169 million from 2021-2027.

Availability: various dates.

K. Irish Circular Economy Network

CIRCULÉIRE is Ireland's First Circular Innovation Network. Their mission is to demystify, derisk, and deliver circular business model innovation by unlocking the value that resides in an Irish circular economy. CIRCULÉIRE is a multi-million euro cross-sectoral, industry-led public-private partnership that provides Industry with the necessary supports and expertise to drive their systems-level circular innovation.

Irish Manufacturing Research (IMR) (Secretariat) in conjunction with three public sector Strategic Partners (Department of the Environment, Climate and Communications (DECC); the Environmental Protection Agency (EPA); and EIT Climate-KIC), and 25 Founding Industry Members (MNCs and SMEs alike) soft-launched the programme in January 2020 as a pilot initiative.

Building on the impacts achieved by the pilot initiative from 2020 to 2022, the Department of Environment, Climate, and Communications became the primary public funder of CIRCULÉIRE in 2023. This support enables the continued scaling of industry-led circular innovation while leveraging existing expertise and activities within the national circular innovation ecosystem.

They work across multiple Industry sectors and are stewarding over 50 organisations and their supply-chains on a journey from linear to circular business models.

7. Conclusions

County Monaghan has considerable potential to transition to a circular economy, which could generate significant economic activity and create jobs in agriculture, manufacturing, renewable energy, waste management, and social enterprises. By embracing circular economy principles, the county can reduce environmental impact, increase resource efficiency, and foster sustainable business practices.

The key to unlocking these opportunities lies in addressing barriers such as access to finance, technology costs, public awareness, legislation and most of all co-ordination. By creating an appropriate support structure to act as a catalyst for circular economy initiatives, County Monaghan could become a leader in sustainability and innovation and diversify its rural economy which is heavily reliant on conventional grass based agriculture and food production. Through strategic investment, education, and policy support, Monaghan can become a leading example of circular economy success in Ireland.

This scoping exercise is an initial first step and starts to provide a roadmap for implementing circular economy initiatives in County Monaghan. The transition to a circular economy will not only enhance economic resilience but also contribute to sustainability and job creation in the region and help bridge the nuances of urban rural in the coming years.