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GETTING BEHIND THE CIRCULAR ECONOMY:

# Food and the Circular Economy



# FOOD AND THE CIRCULAR ECONOMY

## From Farm to Fork and Further

### Why Food?

Nutrition rivals the construction sector in terms of material use. On average each of us consumes 1 tonne of food in a year and on top of that, Ireland exports 8 million tonnes of food and farm products every year.<sup>1</sup>

There is considerable opportunity for reducing adverse impact on the environment at every point along the supply chain. Such improvements can deliver food to the highest quality and sustainability. It can also improve the overall health of the local ecosystem, promote good human health and protect the environment.

The supply chains involved are complex starting from land use choices, and embracing the approach to production, processing, packaging and presentation to consumers, consumer choices, and the handling of unused materials all along the chain. They should be approached in an integrated way because trade-offs arise at every point and different stakeholders play a role.

The present institutional policy arrangements do not reflect that interdependence well. There are separate ambitions relating to land use and production methods under strategies for Forestry, for Biodiversity, for the Bioeconomy and for Climate, but these strategies are not integrated into a single Land Use Strategy. There are targets for packaging and for Food Waste, and for promoting local produce, but the dots are not joined up into a circular strategy for the sector.

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### Understanding the Challenges we Face

*“The biggest challenge we face is recognising the scale of the challenge” – Policy Kitchen*

Significant environmental challenges have been documented by the EPA and other sources. Ireland is suffering a high level of biodiversity loss. Wastewater management policies leave significant gaps and cause significant water quality problems. Fertiliser use levels create excessive emissions and leaching. Waste of materials all along the chain means valuable materials are lost, and instead challenging waste disposal issues. The food sector is the predominant source of plastic packaging, most of it still not recyclable. Agriculture is responsible for 37% of greenhouse gas emissions.<sup>2</sup>

**Soil Management** Soil and how it is managed remains central to all sustainability efforts and particularly impacting water quality and carbon emissions. We need to protect soil fertility, reduce erosion and increase soil organic. Drained peat lands are a particularly high source of emissions, responsible for over 10 million tonnes of emissions from less than 400,000 hectares and should be a target for early action.<sup>3</sup>

**Packaging** Two-thirds of post-consumer plastic packaging waste comes from food and drink industries<sup>4</sup> including food packaging film, microwave proof containers, bottles for water, milk, soft drinks and juices, yogurt pots, vegetable punnets, trays and containers.

1. <https://assets.gov.ie/118143/0ae177c2-8d69-40ed-b542-e73213c8f889.pdf>

2. <https://www.epa.ie/our-services/monitoring--assessment/climate-change/ghg/agriculture/>

3. [https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/joint\\_committee\\_on\\_agriculture\\_and\\_the\\_marine/submissions/2021/2021-03-02\\_opening-statement-dr-david-wilson-earthly-matters-environmental-consultants\\_en.pdf](https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/joint_committee_on_agriculture_and_the_marine/submissions/2021/2021-03-02_opening-statement-dr-david-wilson-earthly-matters-environmental-consultants_en.pdf)

4. <https://www.bordbia.ie/industry/news/food-alerts/circular-economy-the-future-for-the-food-industry/#:-:text=Two%2Dthirds%20of%20post%2Dconsumer,vegetable%20punnets%2C%20trays%20and%20containers.>

## FOOD AND THE CIRCULAR ECONOMY

**Food Waste** Excessive food waste occurs at every point in the supply chain. Over one million tonnes of food is wasted in the consumer stages of the supply chain, at its highest levels in the catering trades, but costing the average household €700 per year.<sup>5</sup>

Even though there are improving facilities for the recovery of compostable waste, more than half of it ends up in the general waste stream going for dumping in landfill or incineration.<sup>6</sup>

Current food waste in the commercial sector is estimated to be 303,000 tonnes per annum (100,000 tonnes from retail and distribution and 203,000 tonnes from restaurants and food service).<sup>7</sup>

**Carbon Farming** On the other hand, Agriculture and Land use are unique in that these sectors can contribute to reducing greenhouse gas concentrations, whereas other sectors can only slow down the pace of deterioration. Given the right framework, they can be incentivised to sequester carbon and manage down emissions in a manner that is much more cost effective than other sectors and carve out a strong future for the family farm and a reputation for low emission food production. This is the opportunity which a circular approach can unlock.

Developing effective policy in this sphere has been hampered by a number of factors.

Poor data at farm level, disputed impacts and inadequate rewards for environmental gains have hampered optimum choices at farm level. They have also made discussion of policy unnecessarily confrontational.

The way in which the EU has set the emission reduction targets has also contributed to the difficulty in evolving workable policies. Irish Food Producers can rightly claim higher carbon efficiency, particularly in the dairy sector. However, Agriculture is not in the emission trading system where the EU seeks to locate production in the most carbon efficient places. Instead agriculture emissions are put in with sectors where a blanket reduction target for specific member states is set.

The unique nature of methane as an emission with much greater impact in the short-term, but a finite life is also lost in the way in which it is simply aggregated at a 25:1 equivalence with carbon dioxide, which lasts forever. A proper policy for methane management needs to recognise that distinction in the rewards for methane management.

The EU Court of Auditors demonstrated in 2021 that Cap spending to date has been ineffective in achieving GHG reduction and changing behaviour.

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### Why Adopt a Circular Approach?

One of the great strengths of seeking a Circular Vision for the Agriculture, Forestry and Land Use sectors is that it integrates the policy approach to these sectors, and looks at all contributors along the supply chain, not just primary producers. It can forge a pathway through these difficulties that should instil confidence in all stakeholders.

5. <https://www.epa.ie/our-services/monitoring--assessment/climate-change/ghg/agriculture/>

6. <https://assets.gov.ie/86647/dcf554a4-0fb7-4d9c-9714-0b1fbe7dbc1a.pdf>

7. [https://www.cso.ie/en/releasesandpublications/ep/p-sdg12/irelandsunsdgs-goal12responsibleconsumptionandproduction2021/consumption/#:~:text=Current%20food%20waste%20in%20the,from%20restaurants%20and%20food%20service\).](https://www.cso.ie/en/releasesandpublications/ep/p-sdg12/irelandsunsdgs-goal12responsibleconsumptionandproduction2021/consumption/#:~:text=Current%20food%20waste%20in%20the,from%20restaurants%20and%20food%20service).)

### What did the Policy lab Learn from Listening to many voices?

- There is a universally shared conviction that **Irish agriculture can prosper** by becoming an early innovator and leader if it moves nimbly to adopting circular economy principles.
- **Positive change** is at the heart of the Circular Economy. The whole approach is one of solving interdependent problems to achieve this shared goal. The Circular economy recognises the starting point of players and the constraints they face. It is based on incremental change starting from where you are now on the multiple dimensions of environmental integrity: climate, biodiversity, pollution, depletion of resources, waste etc.
- **Data collection and accurate benchmarking** is essential. Inevitably, incorrect signals to actors cause bad selections. Correct values must be placed on choices made.
- We can do a lot more to **communicate the positives** about the circular economy.

### What Could Circularity for the Food Industry and Consumers Look Like?

- Food is produced in ways that regenerate nature
- Food is not Lost or Wasted
- Management of emissions is rewarded
- Packaging adopts practices of Sustainability
- Unavoidable Discards are used Productively
- Consumers make more discerning choices (with acknowledgment to EPA)

### Circular Principles in Action

*Beechlawn organic Farm in Co Galway supplies surplus produce to Food Cloud, Lions Clubs and The Capuchin Day Centre in Dublin. The farm constantly sources new takers for surpluses.*

*(Irish Times, 24 January 2022)*

### Is It Worth the Effort?

Bluntly -YES.

Your **family** can save money: the average household lost €700 last year through food waste. That cost is now multiplying as the cost of food rises. As the cost of food rises so will the returns on reducing waste.

Your **farm** can develop new, secure sustainable sources of revenue: Farmers can maximise income through:

- Using more nimble supply chains,
- Building closer, direct relationships with consumers
- Being rewarded for the environmental gains it delivers
- Effective utilisation of sustainability measures and
- Reaping the benefit of an enhanced international reputation

Your **Food manufacturing and retail businesses** can benefit from:

- Greater traceability of products;
- Higher quality produce which consumers increasingly demand;
- More local suppliers in your network;

## FOOD AND THE CIRCULAR ECONOMY

- Reduction in waste will increase profit margins.

Your **community** can benefit from:

- The equitable and effective re-distribution of food surpluses;
- More sustainable waste management;
- Opportunities for community - based social enterprises;
- Improved food resilience for your community resulting from direct community actions.

Your **Research group** can:

- Deliver the new technology that will underpin our move to more sustainable food production, land use, maritime innovation, water and energy security AND crucially, human health and well-being.
- Be a major actor in the EU Research, innovation and Science actions in the areas of food and the circular economy. The next framework programme, Horizon Europe has a budget of €95 billion.

**Ireland** can move fast and build on its reputation for high quality food exports. **We have an opportunity to lead and manage change that will benefit all.**

### Circular principles in Action

*Food Cloud is a social enterprise with a "a mission to transform surplus food into opportunities to make the world a kinder place". Established in 2013 by Iseult Ward and Aoibheann O'Brien, it aims to ensure that no good food goes to waste. By partnering with producers and retailers, Food cloud has demonstrated the impact of shared responses to big challenges. By utilising the best supply -chain technology, Food Cloud demonstrates that effectiveness results can be achieved in all parts of the country. Since 2014, Food Cloud has distributed 140 million meals that would otherwise have gone to waste across Ireland and the UK.*

### Owning the Changes we Need to make

*"For a Circular Economy, a circular understanding of the problems, legislation, policy and potential solutions is needed across manufacturers, retailers, government bodies and consumers in order to address this universal challenge we face." (Policy Kitchen)*

*"Ultimately, our food production system will also need to become carbon neutral. Business-as-usual, incremental approaches will not lead to the necessary transformation." (Policy Kitchen)*

The Government, although it has a critical leadership and policy role, cannot alone resolve the many problems. Yet we should not squander the opportunity that now exists for addressing issues that have been long-fingered. Irish citizens need to own this vision of our future.

*"We need to prepare for a different future in an uncertain world." (Policy Kitchen)*

*"If we could verify the meat and dairy produce of a carbon neutral farm, think of the premium such products could attract." (Policy Kitchen)*

### We Start from a Strong Position

- We have a sea area of 490,000km<sup>2</sup> – (7 times our land mass) – and it is one of the best globally positioned resources for alternative energy generation

## FOOD AND THE CIRCULAR ECONOMY

- We have an international reputation for green high quality food exports
- We have a farming community that wants to play an active role in creating a sustainable resilient food system
- We have an established R&D network that can be make major contributions to the food innovation strategy for Ireland – “The Green Deal and technological Innovation go hand in hand” (Policy kitchen)

### What we learned in the Kitchens

There is huge potential for change, which with the right policies can deliver wins for all stakeholders.

There are some fantastic examples of good practice already emerging that can build confidence in a new pathway.

*“Sustainability will be a standard that consumers insist on and regulators require. Now is the time to move”*

*“Be fair to farmers and work with them”*

*“Primary producers need to get strategically close to consumers”*

The recommendations included in this section of the report emerged from the two kitchens held by the policy lab on Food – one on production and processing and one on waste. In addition, the policy lab sought submissions from interested parties and sought the views of those who attended the kitchens on emerging proposals.

### Food Production

- Develop much better data gathering and traceability, to establish food metrics and credentials - requires upskilling for advisors, and assistance at farm level, so that we can calibrate how every farm is producing food.
- Be fair to farmers – recognise and value their willingness to innovate
- Boost income opportunities from alternative energy generation, from methane management, from biofuels, and from biogas from farm waste.
- Support Innovation grants linked to sustainability and succession planning
- Reduce food waste at farm level.

### Integrated Land Use Policy

#### Food Processing

The Irish Food processing Sector stands in a pivotal position if Ireland aims to be an early mover in adopting a circular economy strategy. It sets the expectations of the standards in the producer sector, and it is the interface with consumers who are becoming increasingly discerning in demanding that the food they choose has good environmental credentials.

- Build a resilient food chain and develop premium payments for validated credentials.
- Extend shelf life of products – “adding 2 days to shelf life of perishable goods could result in 50% less retail waste and 63% less household waste - maximising useful life of products and materials
- Achieving EU Plastics strategy Targets, such as eliminating single use plastics
- Rethink Packaging Policy to remove materials that cannot be recycled, to cut down on plastics or other materials with a large carbon footprint, to offer consumers products in sizes that minimise the

## FOOD AND THE CIRCULAR ECONOMY

likelihood of waste, to improve packaging recovery and reuse approaches.

- Improve the quality of labelling to emphasise traceability and sustainability with verifiable information about the high quality credentials of the food chain to facilitate informed consumer choice and build an extra margin for sustainability.
- Develop the concept of "waste as a resource in the wrong place" to be recovered for the highest value outlet through a Food Sector Extended Producer Responsibility Scheme - material should be tracked and wherever possible passed to human use rather than discarded, waste suitable for animal consumption should be channelled there, no compostable material should end in the black bin.
- The sector must take responsibility for its entire chain of supply relationships building circular economy thinking into all its B2B relationships

### Food Retailing

Retailers are central to developing the opportunity for consumers to make better choices. Those in the catering trades can also show that they are committed to the principles of quality ingredients and no unavoidable waste.

- Reduce packaging where possible, offer zero packaging areas and refill own containers as an option in some product ranges.
- Eliminate the use of non recyclable packaging
- Encourage Local suppliers
- Support the expansion of the Food Cloud Model
- Develop a campaign in the hospitality sector around reduction of food waste, and optimal separation of disposal streams.

The initiative started in France " C'est qui le patron?" is an interesting model linking producers and consumers. initially it aimed to deliver local produce at a fair price to farmers, but then went a step further allowing consumers vote over social media for the specification of products they want delivered, resulting in 28 products being delivered through participating stores.

### Consumers

Consumers play a central role in the adoption of sustainable approaches first by their choices they make, by the expectations they require suppliers to fulfil, and of course by their own behaviour in using, reusing and disposing of materials. There is scope for improvement in all areas with a little support.

- Build and sustain trust in our food system through transparent and effective use of metrics and information, and steadily improve labelling of circular credentials.
- Focus on behavioural change in the choice and use of food products – information and incentives should be developed to promote better purchasing, storing and consumption of food, avoidance of excess packaging, and optimal separation of disposals.
- Expand networks for purchasing food from local producers in season.

### Government

If transformative change is to happen, the government must undertake a major programme of work to draw together the stakeholders in an integrated strategy, with the appropriate policies, regulations, and incentives to deliver the multiple ambitions it has set.



## FOOD AND THE CIRCULAR ECONOMY

There is a need for an integrated Land Use Policy across all the existing and potential uses in Food production, in Forestry, in producing Bioenergy or other Renewable sources for both self sufficiency and selling into the grid. It will be impossible to realise the opportunities without a secure framework of rewards where landowners can plan a strong viable future with different streams of income, and a sustainable mix of land based uses to support vibrant rural communities.

- Accelerate the move to reward carbon farming, so that farmers can be rewarded for the improvements they can deliver more cost effectively than other sectors.
- New incentives are emerging in Forestry and in small scale renewables. These must be streamlined and made easy to use and work with stakeholders to overcome barriers.
- Develop a new research foresight programme to focus on different futures, major trends, new technologies, coping with uncertainty and volatility.
- Undertake a National food policy review to reconcile the challenges of food security with other objectives.
- Develop our international credentials for sustainable food so that emerging improvements are able to earn premia in international markets.
- Work at EU Level for the optimal alignment of policy and data measurement to support the needed transitions in Ireland
- Rapid agreement on the National Food waste Prevention Roadmap
- Change procurement rules so that local produce can be more easily used in school meals and in canteens with healthier sustainable food and less waste, following the French example.
- Support The Voluntary and NGO Organisations Promoting our Food Sustainability Policies.

### Early Wins

In order to mobilise early action, the following might be “early wins” in the adoption of a robust Circular Strategy

- Seek sustainability pledges from food processors to deliver tangible timebound improvements in their supply chain.
- Enhance labelling for traceability and sustainability and pay a premium. For these credentials.
- Scale up Food Economy and Food Recovery initiatives with Exchequer support.
- Promote Sustainable Food Marks for school meals and public canteens.
- Commit serious effort and resources to make Carbon Farming a viable pathway for farmers.

## FOOD AND THE CIRCULAR ECONOMY

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