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Ireland Deep Demonstration: Workshop 1 Overview

Tuesday 13th September 2022
Teagasc Ashtown Food Research Centre

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1. Introduction

This report provides an overview of the main outputs and insights developed from the first deep demonstration workshop. The report follows the same structure as the agenda for the day and summarises the main takeaways from each of the sessions.

Overall, there were 47 different organisations represented from across the sector (full list Appendix 1) and over 75 individuals in attendance.

2. Statement of Intent Considerations

A statement of Intent for the Deep Demonstration Project, based on the ambition set out in Food Vision, was shared with the participants

> *Ireland wants to become a world leader in sustainable food systems, leveraging its innovative agri-food sector to meet the highest standards of sustainability – economic, environmental and social – and produce the following effects: a sustainable and competitive sector driven by technology and talent, safe and nutritious food valued at home and abroad and viable and resilient primary producers with enhanced wellbeing.*

Participants were invited to discuss their views on the overall ambition embedded in the statement and the ability of the sector to achieve the desired outcomes.

There was broad agreement with the statement of intent, but several stakeholders noted that it was very ambitious and questioned how it would be achieved. The targets for 2030 and beyond are challenging and would require a change in attitude by the stakeholders to embrace the change needed. Throughout the workshop there was a positive and thoughtful approach where difficult questions were asked, and an openness to engage in the discussion and contribute towards the goal of transforming the sector to meet the challenges that we are facing.

Based on the feedback from all the groups, seven categories emerged that capture the main themes discussed (see Figure 1): Policy & Regulation, Governance, Technology & Big Data, Innovation, Competencies, Cultural & Social Norms and Funding & Financing.

There were a number of individuals that were not convinced about our ability to work collaboratively towards the end goal. It was felt that perhaps the ambition was too intimidating and that it would be more manageable if it was broken up into smaller chunks with their own goals and specific metrics. Roadmaps or pathways that break the journey up into clear stages and checkpoints would also help with the implementation.

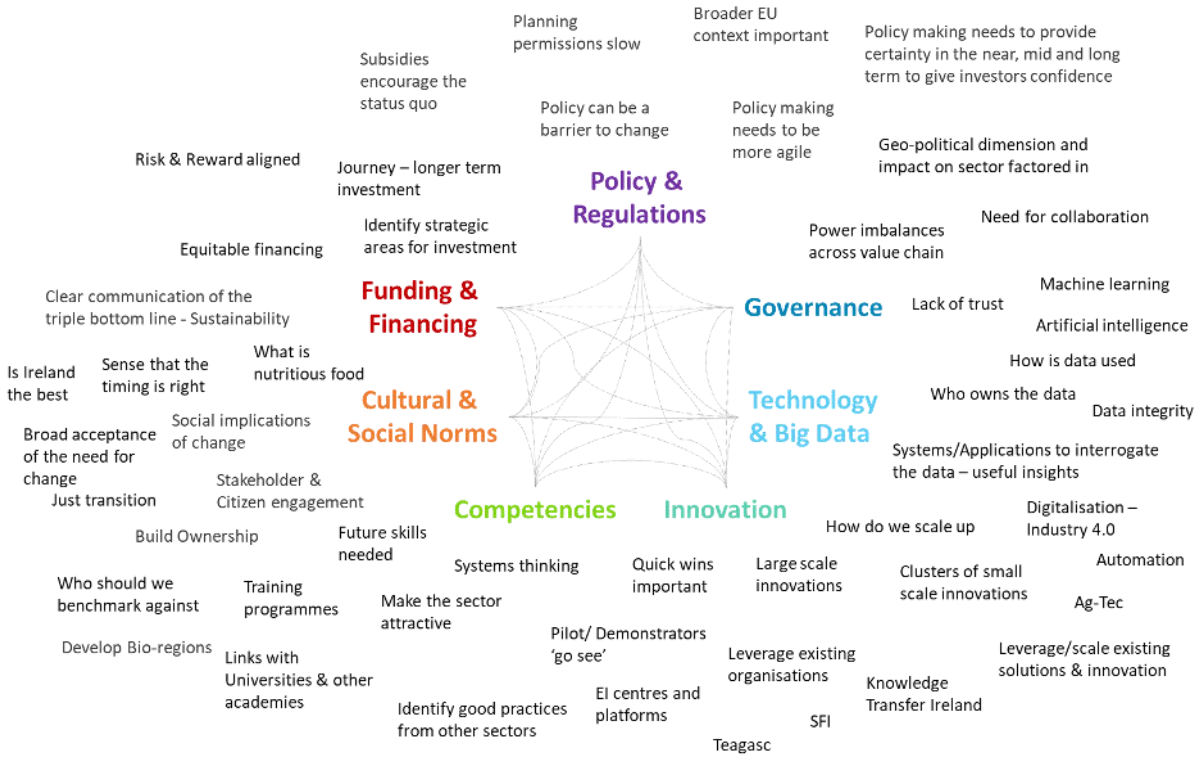


Figure 1. Considerations linked to Ambition

Across several groups fundamental questions were asked

- What does a sustainable food system look like?
- What countries are currently considered world leaders in this space?
- Where does Ireland place on those scales?
- How do we define sustainable or nutritious food?
- What do consumers really want?

Some concerns identified that technological innovations are not enough and we must ensure that the social dimension and the role of policy and politics are central to any change. Policy and politics are core to establishing the frameworks and structures that give confidence and trust to the stakeholders to invest in the future.

Overall, there was a recognition that there is a lot of work to do to achieve the goals, but that we have to do it, therefore we will!

3. Assumptions underpinning the Land-Agri-Food System

A Food System Model developed at Wageningen University (Appendix 2) was used to frame the discussion in this part of the workshop. We challenged the participants to identify the assumptions, which underpin behaviours and perceptions within the land-agri-food system, that potentially drive our choices at all levels. The lack of a single understanding of fundamental aspects as identified in the previous section in itself results in different assumptions about what the system looks like and how it functions.

The feedback is grouped into the four sections of the framework: Socio-Economic Drivers, Food System Activities, Environmental Drivers and Food System Outcomes.

Socio-Economic Drivers

The assumptions in the Socio-Economic section have been further grouped according to the focal areas identified (see Figure 2). The overview challenges us to think about whether the younger generation will behave as we expect and if they will be prepared to pay for sustainability. As a sector we expect that the current approach to international markets and the growth paradigms will continue unabated, but it does not recognise the shifting focus to more local and regional resilience in the face of the events of the last few years such as; Covid, Suez canal Ever Given grounding, Ukraine war.

In fact, the overall resilience, and risks that we face are changing and there is an increase in the number of 'black swan' (high impact but low likelihood) events which is undermining the status quo. That said there is a need to produce food but a desire to elevate the social and environmental pillars as well, with the hope that innovation and new technologies will provide the solution to our challenges. In several cases the assumptions highlight a need for people in the system to behave differently, for example:

- Will consumers food preferences be the same
- Will farmers be prepared to embrace new practices
- Technology applications will attract new people into the sector

How will this behaviour change be achieved? What are the incentives that will encourage people to change their behaviours? Carrot or stick or both? Interesting examples like plastic bag tax were provided as simple approaches that resulted in the desired outcome of reducing plastic bag use. Simple and elegant solutions like this based in behavioural psychology (Nudge economics) can be very effective when applied correctly.

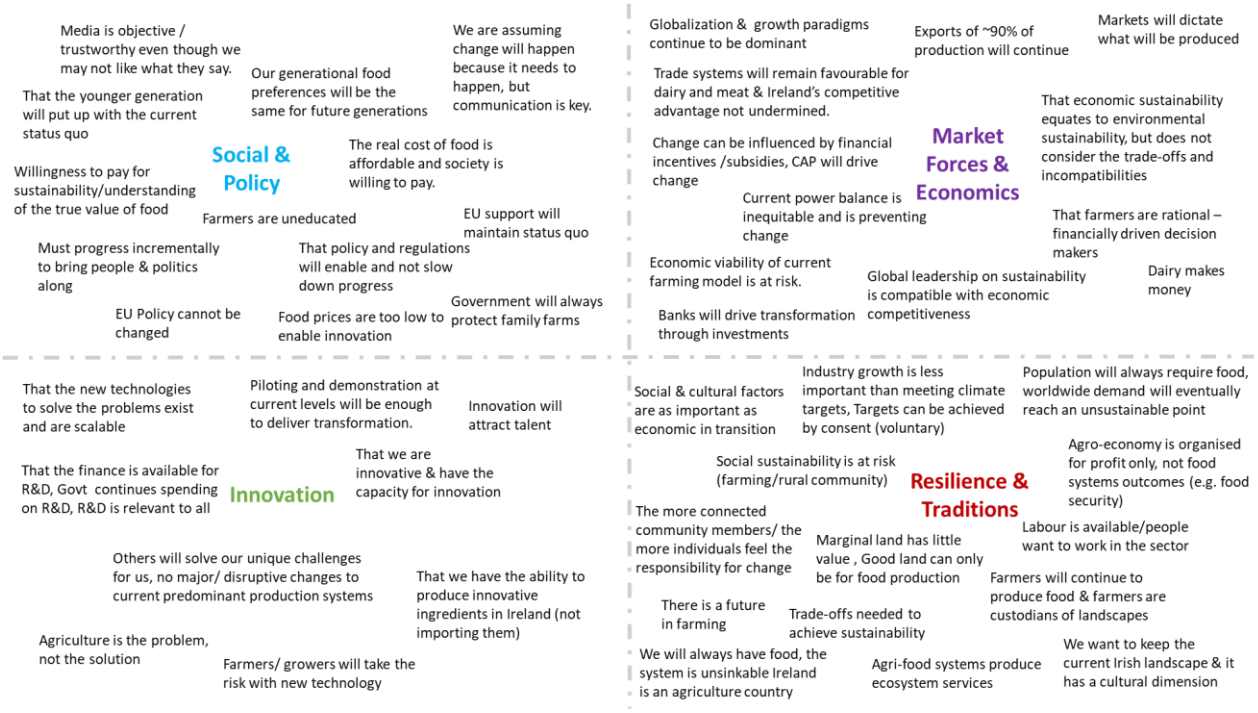


Figure 2. Socio-Economic Assumptions;

Food System Activities

The second section focusses on the assumptions relating to the value chain with a strong focus on the production end of the value chain (see Figure 3). The assumptions are grouped as orbits around the Irish Land-Agri-Food Sector, with primary producers on the closest orbit with market and consumer factors the furthest out.

The assumptions paint the primary producers as slow to change, and conservative, but also recognise the need to adapt and that farmers are economically driven implying that with the right incentives they will adopt new approaches. Fundamental questions were raised around if there will be enough farmers in 2030 and if indeed grass-fed will still be considered as the most sustainable production system.

Interestingly circular/bio-economy approaches appear and the need to explicitly include the Marine sector in future models. Renewable energy production and waste management as a feedstock is mooted. Fundamentally, there is the assumption that people's behaviours will change once faced with the impacts of their choices, but the consumer is viewed as duplicitous in that their actions do not always match their words.

In the Irish context the contentious questions around the future of Dairy and animal proteins were included but these are probably too emotive, and the sector needs more time to come to grips with any potential seismic shift in demand.

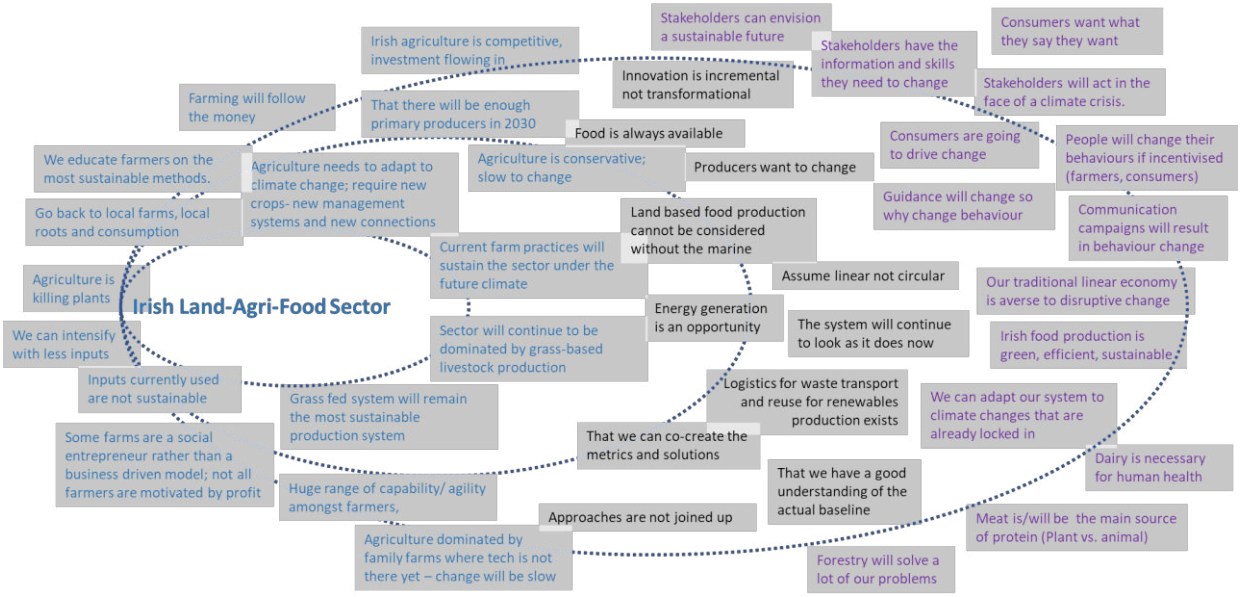


Figure 3. Food System Activities Assumptions

Environmental Drivers

Overwhelmingly the sense is that despite impacts due to climate change Ireland's agriculture sector will not be overly negatively impacted and that things can continue more or less as they are now. Natural resources will be available, there will be enough water, grass will be plentiful and many of the current farming practices will continue in the future. The emphasis appears to be on increasing efficiency in the use of inputs and a drive towards renewable energy solutions. There were opposing views which highlight that key resources (e.g. soil and water) are undervalued and biodiversity restoration is not compatible with intensive farming, and a fundamental question around if agriculture was the best use of the land (see Figure 4).

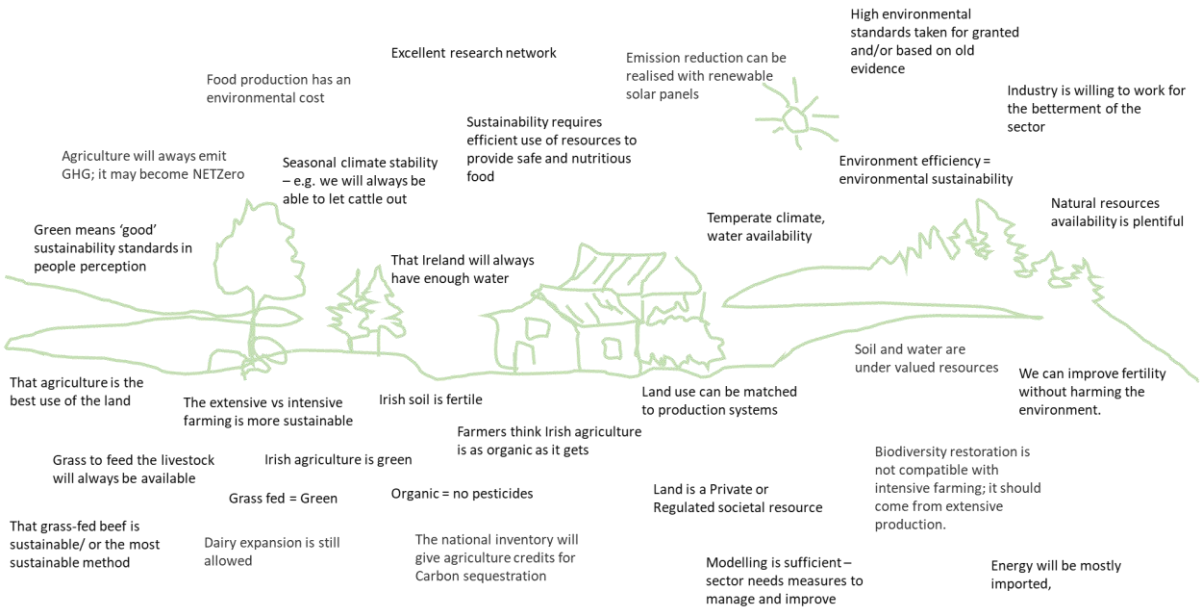


Figure 4. Environmental Drivers Assumptions

Food System Outcomes

Overwhelmingly through all the sections, questions around how to define sustainability were raised. In this section the concept of healthy food and nutritious food were also unclear as to their meaning and interpretation (see Figure 5). There is the underlying assumption that sustainable food is nutritious and healthy, but is it?

Figure 5. Food System Outcomes Assumptions

Concerns around if consumers would be able to afford to buy 'sustainable' food and that the market is used to cheap food and that healthy diets would be only for the wealthy. This dystopian view of the future also wonders if healthy food will be available in Ireland and if as a society, we can avoid food poverty and achieve food security.

4. Dynamics across the Land-Agri-Food System

In this part of the workshop, the focus was on understanding the dynamics at play across the system. In many cases the dynamics are pulling in different directions and can drive instability in the system. They are also positioned as an 'us versus them' or 'bad versus good' but dynamics can also be positive, drive growth and act as a catalyst for change.

There are many opportunities for the sector to use the list of dynamics presented in Table 1 to surface where inequalities exist that should be addressed and also where prospects to change perceptions and behaviours exist.

The power imbalance and resulting lack of trust across the value chain came out strongly on the day as key areas to be addressed going forward. The role of policy to potentially drive innovation as opposed to the perception of being a barrier or lacking in agility to respond to needs in a timely way has also emerged strongly. Overwhelmingly, the sense is that the sector is looking to policy makers to establish the frameworks and 'rules of engagement' which provide transparency and equity.

Farmers perception is that 'they are unduly picked upon'. There are consistent messages coming from the primary producers focussed on better metrics, too much emphasis on their emissions and no recognition of all that they do to reduce carbon emissions. Business models that reward farmers for environmental services and land use change are needed, while balancing and recognising the strong cultural ties to the land and the animals. These are not incompatible goals and engagement with farmers in developing the solutions is critical to drive ownership and commitment.

The role of processors, manufacturers, retailers and consumers is critical to shifting the narrative and supporting the entire sector transformation. Businesses can move more quickly than government and given that many of the key players in the Irish market are committing to 'net zero' targets which cover Scope 1, 2 & 3 emissions, they have a strong motivation to work collaboratively across the value chain to enact change. The risk here is that we work in siloes; given the size of the challenge and that many of the solutions are broad and extensive, we strongly need to collaborate. Many of the solutions are pre-competitive (which allows competitors to work collaboratively on solutions that require scale to be viable) and would benefit from a broader stakeholder involvement, but again it requires trust, good governance and structures to safeguard against bad practices. This change will not be easy but often the best things are challenging and the potential benefits if we get it right are huge.

Table 1. Food System Dynamics

Socio-Economic Drivers		Food System Activities	
Retail price vs. actual cost of production (loss leaders)	Irish self-sufficiency in critical materials vs. Regional & Global supply chains	Siloed approaches vs. System approach	Incentive schemes vs Inertia
Long game vs. short game perspectives in elements of the wider system	Traditions/Cultural norms vs Need for change	Efficiency vs. Waste	Big Data Insights vs Sharing of data
Uncertainty over policy/regulation – inertia and hesitancy	Perception of sector unattractive/manual vs Need to attract young people and new skills	Power brokers in the value chain vs. Extended value chain	Too much data vs. Data insights
Uncertainty of future vs. adaptative and agile planning systems	Average age of farmers vs. Lack of interest from next generation	Farmers negotiation power (price taker) vs. power brokers in value chain	Small farms vs. Big farms
Regulatory dynamics – roadblocks vs catalysts	New skills & competencies vs. Access to Training & Education	Role of cooperatives (negotiation) vs. Power brokers in value chain	Beef/Lamb farmers vs. Dairy farmers
Incentives vs. Regulations	New skills and competencies vs. Limited resources	Supply chain demands (power brokers) on Scope 3 emissions reduction vs costs to primary producers	Low margin farms vs. High margin farms
Cultural norms vs. changes expected of farmers	Knowledge development/R&D vs. Knowledge sharing and implementation	Speed of large businesses to drive change vs. Policy response lagging	Family farms vs. Commercial farms
Viable alternatives for farmers vs Unrealistic expectations for farmers to change	Policy drivers for innovation vs Rigid and slow process for change	Consumer choice vs. Taking what is produced	
Farmers futures vs. Economic uncertainty	Rising prices for everything vs. Survival causing myopia	Consumer awareness of challenges vs. Farmers' impact & actions	
Volume of communication vs. Understanding priorities and focus points	Economic benefits vs. Environmental outcomes viewed predominantly as a cost	Competition vs. Collaboration	
Shareholder vs. Stakeholders	Valorisation & communication of Environmental benefits vs Maintaining the current narrative	Collaboration vs Trust	
Consumer responsibility vs. Producer responsibility		Transparency vs Trust	
Local led Initiatives vs. Planning and Policy led			
Local vs. Regional vs. Global supply chains			
Environmental Drivers		**Food System Outcomes**	
Land management vs. Land Ownership	Increase renewable energy production vs planning permissions	In-depth measurement of waste streams vs. estimates	Real cost of food vs Consumer ability to pay
Many small scale initiatives vs. Few large scale initiatives	Reduce carbon vs. Financial viability	Reduce food waste levels vs Consumer awareness	Different perceptions of what Sustainability means vs. Clear messaging as to what it means for the different stakeholders across the value chain
Emissions is a global/system issue vs. Mitigations very focussed on some stages – not shared	Improve soil quality vs short-term productivity losses	Reduce food waste vs. better visibility at retail level	
Focus on emissions vs Whole farm carbon accounting	Improve air and water quality vs productivity losses	Sustainable food vs. nutritious food	
Siloed carbon reporting vs. Carbon farming framework for all levels	Reduce methane emissions vs National herd size	Nutrition vs. Healthy outcomes	
Farming practices vs. Reducing impact	Increase carbon sequestration vs land use change	Cheap food vs. Healthy outcomes	
Energy self-sufficiency vs Dependence on gas	Increase afforestation rate vs LULUCF	Food security vs. Healthy outcomes	
Increase investment in renewable energy vs Funding and financing sources	Rewet peatlands vs LULUCF	Food security vs. Reliance on food imports	

5. Foundation for change

The final activity of the workshop was to reflect on all that had been discussed previously and the participants own experience in the sector, to begin the process of identifying the needs, the assets resources and competences as well as external conditions required to achieve our vision (see Figure 6). Participants aimed to answer the following questions:

- What are the needs that the sector needs to satisfy?
- What are the demands/needs in the marketplace?
- What do the different stakeholders need from the system to enable the transition?
- What assets and resources are necessary to support the transition?
- What are the competencies and external conditions required which will provide a fertile space in which to explore the future options?

There was a complete spectrum of areas identified from:

- Healthy soils to nutritious food.
- Better metrics and frameworks that take a holistic approach to reporting on activities on the ground
- A requirement for verified baselines of the current situation
- Investment and financing to support the different interventions
- New business models that reinforce the future vision for the sector
- Education and knowledge management as important enablers to managing the change.
- Understanding and respect of the local culture and traditions

These are all important factors that need to be woven through the various interventions.

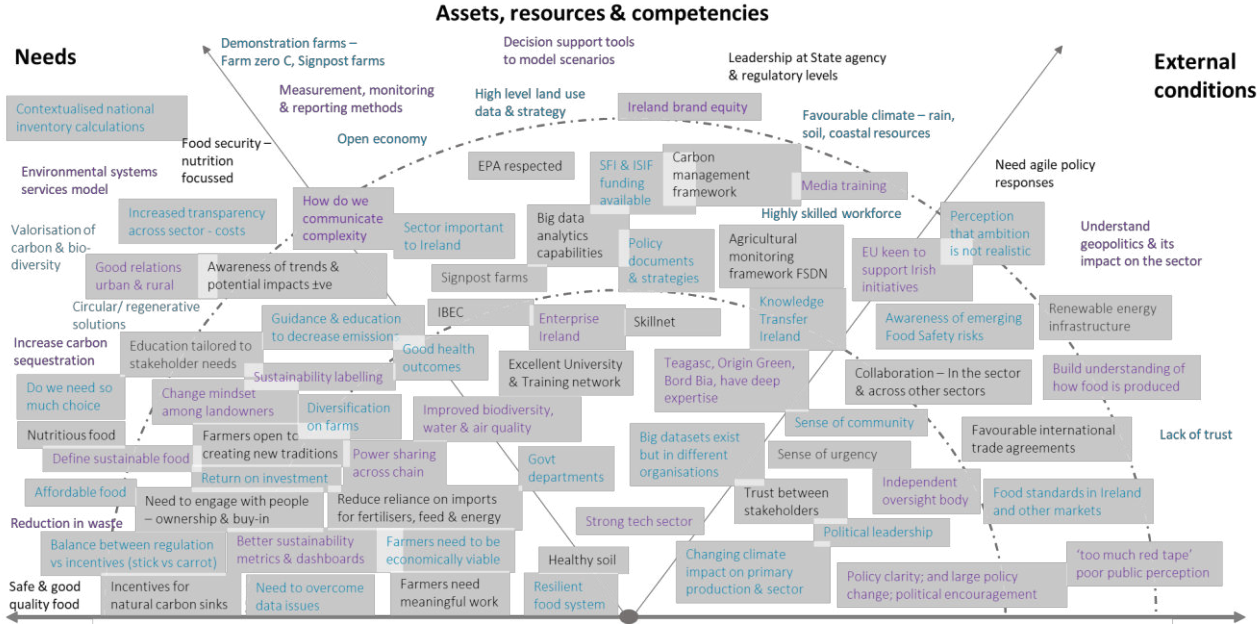


Figure 6. Key Enablers to Transition *(the colours have no significance and are used to aid readability)*

6. Summary

The Irish Land-Agri-Food sector ecosystem is rich with many excellent food research and R&D centres, funding bodies, and key industry associations that build expertise across the sector. The sector as a whole has an excellent reputation at home and abroad which has been built on many years of quality control and assurance. Across different key stakeholders there exist extensive datasets, however, they are not joined up which drives gaps in knowledge and insights and massive inefficiencies in double handling. Fortunately, Ireland has a very strong technology and IT sector and already there are groups developing big data insights tools that could potentially draw on data from across multiple datasets.

In closing there is a sense that we have many ingredients to hand to transform but are missing a few key ingredients – at the foreground is the need for clear leadership, with organisations taking ownership for the transformation that needs to be delivered, for policy makers to provide the certainty to the sector for the long-term this will provide confidence to the organisations and investors to invest in the change for the future vision.

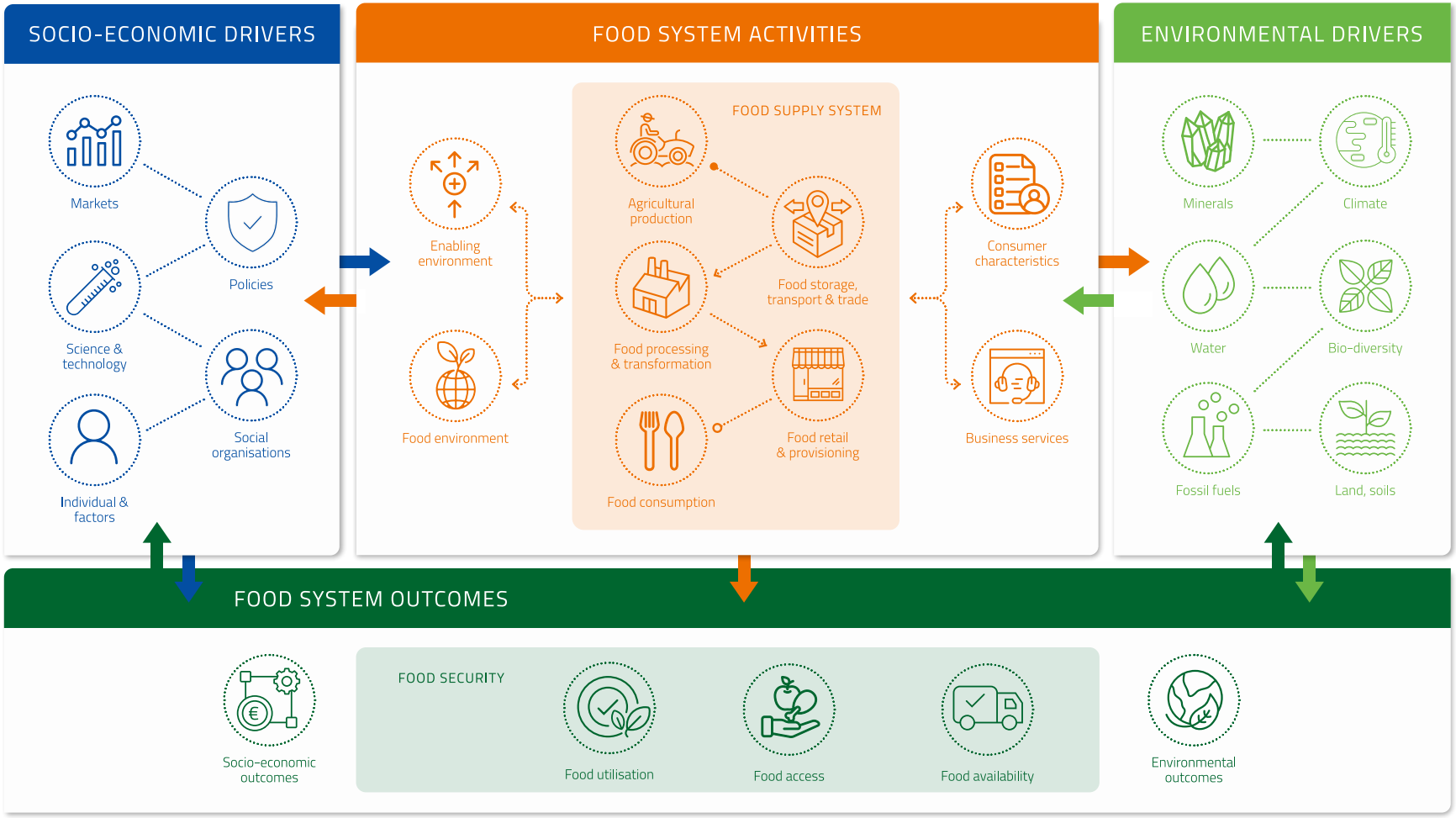
New skills and competencies will be needed moving forward as new business models emerge and the implementation of technological solutions continues across the sector. Ultimately, we also need to address how the change is enacted and the need for behaviour changes and the recognition that there will be some aspects of what we do today that will need to change and possibly disappear.

Intangible aspects around just transitions, positive trade-offs, viable alternatives and equity will be important. Finally, but certainly not least we need to build trust across the sector and between people and organisations to hold it all together.

7. Appendix 1 - List of Organisations Represented

AAT	ICOS
ACA	IFA
Alltech	IKC3-Ireland's Knowledge Centre for Carbon, Climate and Community Action
Animal Health Ireland	INHFA
Bank of Ireland	Insight SFI Research Centre for Data Analytics
BIM	Ireland Strategic Investment Fund
BiOrbic Bioeconomy Research Centre	Irish Centre for High-End Computing, University of Galway (NUIG)
College Group, Nobber, Co Meath	Irish Water
Connolly's RED MILLS	KPMG
Cropteam Ltd	Magrowtec
Dawn Meats Group	MTU
Department of Enerprise, Trade and Employment	NESC
Department of the Environment, Climate and Communications	NTMA
Devenish	Origin Chain Networks
Diageo	Ornua
Enterprise Ireland	Teagasc
ERINN INNOVATION	TERRA NUTRITECH
Eur Digital Village	Terrain AI
EY	The Nestbox Egg Company Limited
Farmeye	Trinity College Dublin
Farrelly & Mitchell	University College Dublin
Food Drink Ireland	University of Galway
Forest Service - DAFM	Western Development Commission
Herdwatch	

8. Appendix 2 – Food System Model



Adapted from: Posthumus, H., J.M. Bosselaar, H. Brouwer. 2021. The food system decision support tool – a toolbox for food system analysis. Wageningen University & Research and KIT Royal Tropical Institute.