TRANSITION FRAMEWORK
TOWARDS FUTURE PRACTICES OF SUSTAINABLE FOOD CONSUMPTION

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INTRODUCTION

This document reports on the output of the CONSENSUS sustainable food consumption Transition Workshop held in July 2012. The aim of the workshop was to develop a Transition Framework containing possible interventions in policy, education, research and business that can pave the way towards a future in which more sustainable food consumption practices become embedded in Irish households. The workshop engaged a range of stakeholders from the food sector in Ireland (North & South), drawn from public, private, semi-state and non-governmental organisations. These stakeholders represented a variety of backgrounds including consumers/citizens, food production and consumption, retailers, design, policy, planning and communications.

The Transition Workshop represented the final phase in an iterative, backcasting research process. Backcasting is based on the collective development of desirable future visions, followed by looking back (backcasting) to see how a transition towards that future could be achieved. As opposed to other futures techniques, such as forecasting, backcasting is valued for its potential to widen perceptions about sustainability problems and develop trend-breaking, holistic solutions. The CONSENSUS research project uses backcasting in an all-Ireland context as an innovative, creative means of developing alternative scenarios for sustainable household consumption and long-term action plans in order to work towards their achievement.

PRACTICE-ORIENTED APPROACH

In addressing the problem of (un-)sustainable food consumption, the research adopted a ‘social practice’ approach that focused on people’s practices of everyday food consumption and disposal. The practice of food consumption (shopping, preparing, and disposal of food) was taken as the primary unit of analysis as these practices are interlinked. The social practice approach contrasts dominant conceptions of human behaviour that tend to overlook limitations imposed by existing technological or social contexts that ‘lock’ people into patterns of consumption. Instead, this approach notes the variety of social, infrastructural and institutional elements that shape our daily practices. In the context of food consumption practices, these elements are: technological (e.g. elements of smart kitchens), organizational (e.g. systems of food provision and regulations), socio-cultural (e.g. food consumption norms and habits) and personal (e.g. practical cooking skills).

BACKCASTING PROCESS

The backcasting process began with a stakeholder Visioning Workshop based on the question: what kinds of technological, organizational and socio-cultural innovations can we envisage in the year 2050 that might fulfil the needs of food consumption (nourishment, comfort, health) more sustainably? In the Scenario Elaboration phase, proposals from the visioning workshop were developed into three distinct future scenarios depicting more sustainable food consumption practices. Next, an online forum was created to gain feedback from the workshop participants on the scenarios. After this, the scenarios were subjected to a qualitative Sustainability Assessment to analyse their environmental, social and economic implications and Citizen-Consumer workshops were held to assess opinions of everyday users towards the scenarios.

Three ‘Promising Practices’ were then identified, taking into account citizen-consumer feedback and the results of the sustainability assessment. Each Promising Practice focuses on the actions taken by a person to accomplish the task of food consumption, detailing the motivations, technologies and systems of provision that guide their behaviour. The Promising Practices are not blueprints for the future, nor are they stand-alone, separate solutions. Rather, they represent future possibilities for more sustainable food consumption practices containing bundles of ideas that may be synthesized or pursued in different combinations.
VISION FOR 2050

In the year 2050 people’s food consumption practices are characterised by:

1) SPACES FOR SUSTAINABLE EATING

There are many opportunities for cooking, growing and eating together, for example in ‘edible parks’, schools and work places. There is also more time to engage in these activities, as many people work fewer hours due to supportive flexible working time regulations. Innovations have been developed for more intelligent use of space resulting in urban ‘vertical farms’ to grow fruit and vegetables commercially as well as increasing domestic food production.

2) FOOD AWARENESS

Alternative education techniques about sustainable and healthy eating have triggered lifestyle changes. Affordable healthy, sustainable food is widely available in shops, canteens and restaurants. Responsive pricing reflects the environmental footprint of food products (including aspects of biodiversity as well as the carbon and water footprint of food). ‘Intelligent food phones’ help to inform people about the environmental, social and health impacts of food products.

3) SMART FOOD

Smart kitchens with closed loop systems for energy recovery are the norm. Interactive ‘smart technologies’, like the intelligent fridge and the smart food safety kit, help to avoid food waste. The intelligent food waste processor deals with the small amount of residual waste producing fertilizer for the living wall and biofuel as appropriate, at home and at community level. Green supermarkets have strict sustainability standards and participate in food redistribution networks.

TRANSITION FRAMEWORK DEVELOPMENT

Following the Transition Workshop, the interventions recommended by participants to work towards the 2050 Promising Practices were further elaborated. This document presents these interventions in a visual timeline over short (2012-2020) medium (2020-2035) and long (2035-2050) time scales. Interventions are categorised according to the following different types:

- **Policy** (e.g. directives, standards, economic instruments)
- **Education & Engagement** (e.g. educational programmes, community initiatives, awareness campaigns)
- **Research, Technology & Business** (e.g. Research & Development, economic investment)

The document concludes with a list of challenges and drivers as identified at the Transition Workshop that may impact the implementation of the Transition Framework. A note is also provided on the potential actors that would need to be engaged in order to carry forward the recommended Transition Framework.
### Towards Future Practices of Sustainable Food Consumption

#### Transition Framework

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#### LEGEND

- Policy
- Education & Community
- Research & Business
SPACES FOR SUSTAINABLE EATING

SHORT-TERM (2012 - 2020)

• Identify and map suitable spaces for growing, cooking, eating together – As a component of green infrastructure developments, spaces are identified for communal cooking and eating, as well as for growing vegetables and fruit. Vertical gardens could work in restricted space as demonstrated in the Skainos project, Belfast (www.skainos.org/) and the Landshare network (www.landshare.net).

• Research is conducted with employees and employers about flexible work models and mechanisms to support participating employers are developed – Dissemination of best practice flexible work practices demonstrate the benefits of flexible working hours, part-time work, telecommuting and options for leaves of absence in terms of increased wellbeing, environmental benefits and the creation of more jobs. For example, extended versions of the Athena SWAN award need to be developed (www.athenaswan.org.uk).

• Opportunities to support community agriculture, local food markets and redistribution networks are promoted – Community supported agriculture creates a direct relationship between farmers and members who pay a weekly fee to participate. This guarantees the farmers a wage and the members get a regular supply of produce, as seen in the Community Farm at Cloughjordan village in Ireland (www.thevillage.ie). Such initiatives, in addition to the more familiar farmers’ markets shorten the supply chain between consumer and producer.

• Local and national ‘champions’ to promote sustainable food consumption are identified and recruited by public and private institutions (e.g. EPA, BordBia, safefood) – Food champions create more visibility around sustainable food practices and empower people to experiment with sustainable eating. Local producer days and food festivals encourage people to ‘re-learn the senses’ by experiencing tasty seasonal food. For a current good practice example which could be promoted more in this regard see Bord Bia’s ‘best in season’ campaign (www.bestinseason.ie/).

• Networking of sustainable food and food waste groups is facilitated by new partnerships between civil society groups, government and the private sector – A central website on sustainable food initiatives in Ireland (growing, wasting, cooking etc) is developed and events organised where different groups can come together to network.

• Regulations are in place to restrict advertisements in the media about unhealthy food – Building on new rules on advertising of ‘unhealthy’ food and drink to children in Ireland, regulation is extended to include recommendations by the Irish Heart foundation to ban the advertising of foods such as French fries, crisps, confectionery, biscuits and sugary sweetened drinks from 6.00am to 9.00pm in order to protect children and young people.

• New public-private partnerships conduct R&D into the benefits and challenges of vertical farming – Research, funded by both public and private investment is conducted into developing energy efficient, low water and closed system vertical farms to increase their environmental profiles.

MEDIUM-TERM (2020 - 2035)

• National planning policies to support communal growing and shared facilities for cooking and eating are developed – Local by-laws are changed to make it easier to designate (unused) spaces for community gardening, vertical farms and community kitchens. Training courses are provided by civil societies (e.g. GIY Ireland, www.giyireland.com) for people to learn to grow-your-own, and cooking classes are provided at community level.

• Mechanisms to encourage flexible work models are piloted – The government creates incentives for firms offering flexible work models by presenting awards and by favouring services by these firms for public procurement.

• ‘Food sharing’ as a mode of exchange is piloted - Provide and promote opportunities for people to come together for gardening in community gardens and for cooking and eating in community centres. This is incentivized by organising ‘food feasts’ and supporting Web 2.0 technologies.

• Expand role of local authorities to identify and designate food spaces in line with national policy – The role of local authorities undergoes a systemic change from manager to caretaker. National policy enshrines a stronger role for local authorities in legislation and provides additional resources for them to engage with sustainable food issues.

• Interactive education on food growing and cooking becomes mandatory from primary school onwards – In the form of ‘essential life skills’, growing and cooking become mandatory school subjects starting from primary level. Schools are supported to develop small-scale food production on-site.

• The impacts of advertising restrictions on unhealthy food are evaluated and recommendations for future action provided – By analysing the impact of earlier regulations regarding the advertisement of ‘unhealthy’ food and drink to children in Ireland (see above), an even more sophisticated and integrated approach is developed tailored to the Irish context. This is done by incorporating insights about the effects of advertisements of unhealthy food on the health of all segments of the Irish population.

• Vertical farms tested in vacant properties – Positive results of R&D for vertical farms are tested in suitable vacant properties throughout Ireland. Social initiatives like ‘Landshare’ in the UK (www.landshare.net) connect people who have land to share with those who need land for cultivating food.

LONG-TERM (2035 - 2050)

• Infrastructure is provided for communal growing and shared facilities for cooking and eating within communities – Structural supports and national policy planning is provided to ensure that supply exceeds demand for community growing opportunities. To this end, education and training is provided for the management of allotments regarding pest, weed and disease control as well as for general management (issues of sharing, collective action, control of vandalism).

• Flexible work models are mainstreamed – Incentives by the state and demand by the public for more flexible work models have resulted in wide uptake of such working practices. Small and Medium Enterprises (SMEs) like small food companies are particularly identified for support in order to facilitate this. In this process, new jobs are created, as many people work part-time.

• ‘Food sharing’ has become a societal norm – Due to information campaigns, incentives and opportunities for growing, cooking and eating together, food sharing has become much more common and evaluations demonstrate positive effects on community cohesion, the environment as well as on the health & wellbeing of participants.

• Food sustainability standards for buildings are mainstreamed - Building regulations require the allocation of space for food growing internally and externally, as well as closed loop systems for energy recovery. Strict measures are provided for vertical farms to ensure adherence to sustainability standards, including controls for potential pest and disease issues.

• Communal food production and consumption is widespread – Incentives are developed at work places, community spaces and in buildings (at home, on rooftops, on vertical farms) to make it easier for people to grow, cook and eat together.

• R&D for closed loop food production in the home is developed – Architects design buildings that include options for growing, using excess heat for energy and intelligent watering systems for the collection of rain water and re-use of grey water.

• Vertical farms in Dublin and other Irish cities are operating efficiently – After successful test phases, vertical farms now produce significant amounts of local food for urban populations.
FOOD AWARENESS

SHORT-TERM (2012 - 2020)

- Standards for a simple labelling system for sustainable food are developed – Public and private actors design simple labelling systems for sustainable food consumption to facilitate shopping and eating in restaurants. This involves R&D encompassing health, social, environmental and animal welfare aspects (see examples of bronze, silver and gold categorization developed by www.foodforlife.org.uk; The Soil Association’s ‘Food for Life: Catering Mark’ and the ‘right track’ programme for healthy eating in canteens and catering developed by ARAMARK Ireland (www.aramark.ie).

- Co-ordinated research is conducted on life cycle impacts and environmental footprints of key food products – Researchers collect and disseminate information on life cycle analysis (LCA) of food, as well as on the environmental footprint of food products (including biodiversity, carbon and water footprint) with the aim of agreeing on methodologies for environmental footprinting and LCA for food.

- Social marketing to generate pride in healthy eating and wellbeing – The Department of Health and Children (DOHC), in collaboration with private actors (e.g. researchers, interest groups) and existing initiatives and agencies (e.g. FSAI, safefood, NHF, www.nutritionandhealth.ie), establishes social marketing campaigns for health and wellbeing with a focus on exercise and healthy, sustainable eating. It extends current practices in these areas addressing barriers that currently prevent them from having a larger impact.

- ‘Food Dudes’ healthy eating programme is expanded from primary to other levels of education – The Food Dudes Programme in Ireland received a “counteracting obesity” award from the World Health Organisation (WHO) in 2006 (www.fooddudes.ie). Bord Bia, who is managing the programme, could expand it to secondary schools and universities, in order to ensure consistent reinforcement of its message, by adjusting its content to suit different age profiles (working with incentives and positive images).

- Sustainable food education is integrated in ‘green schools’ programme by An Taisce and local authorities – The very successful ‘green schools’ programme operating in Ireland is extended by integrating the theme of ‘sustainable food consumption’, incorporating health, environmental and social dimensions, and providing opportunities for growing, cooking and eating together.

- Cooking courses in supermarkets are provided where celebrity chefs promote ‘15 minute good food meals’ – In order to promote cooking skills, celebrity chefs prepare ‘15 minute meals’ in supermarkets. Recipe based shopping (e.g. soup mix) is available to facilitate cooking for singles and families.

- Raise awareness about (health & environmental) benefits of sustainable food consumption – Similar to smoking and alcohol awareness campaigns, media campaigns detail the environmental and health impacts of food and how to avoid food waste. Initiatives by food producers and institutions like Bord Bia demonstrate what food is grown in Ireland, thereby promoting local and organic produce and provide recipes for using local produce.

MEDIUM-TERM (2020 - 2035)

- Sustainable food labelling becomes mandatory – The government requires that a simple labelling system for sustainable food encompassing health, environmental, social and animal welfare standards becomes mandatory. Improvements in inter-departmental collaboration within government, linking up production (DAFM) and consumption (FSAI) have enabled this process.

- Life cycle analysis (LCA) and sustainable food standards are taught in schools - Facilitated by technology, LCA for food products and information about sustainability standards for food become integral school subjects with the help of smart technologies and apps for smart phones.

- Inter-agency collaboration between preventative health and wellbeing bodies is extended – New collaborations between existing bodies like FSAI, safefood and NHF are established to provide information campaigns and initiatives on preventative health and wellbeing, including healthy and sustainable food consumption. Central marketing is managed by DOHC for better visibility of these initiatives.
• Traditional ‘healthy eating’ food skills are promoted through intergenerational food knowledge exchanges – National food champions promote lost food skills on a larger scale (using old and new media). TV shows like ‘Antiques Road Show’ for food promote lost food knowledge. Inter-generational community cafes enable the transition of cooking skills.

• Food supply in public institutions is required to become sustainable and healthy through green procurement policies – Organic, local, fair-trade, free-range and healthy products are available in schools, universities, hospitals and other public institutions at affordable prices. Food retailers are encouraged to participate in voluntary initiatives to provide sustainable food as part of their corporate responsibility profiles.

• Restaurants, canteens and fast food chains offer more choice of (smaller) portion sizes – In order to encourage healthy eating, tackle obesity and reduce food waste, restaurants, canteens and fast food chains offer a choice of smaller portions at reduced prices for customers.

• Leftover ideas with all products at point of purchase are introduced – Information on food products provide suggestions about what you can do with excess and provide menu suggestions to avoid food waste. Retailers devote a section of their website in which recipe ideas for the use of leftover food can be generated.

LONG-TERM (2035 - 2050)

• Responsive pricing emerges linked to taxes on environmental, social and health aspects of food products – Food prices reflect their environmental, social and health impacts, so that unhealthy, unsustainable food becomes more expensive. At the same time, government (health) planning ensures that affordable healthy, sustainable food is available for all.

• A free ‘sustainable food guide’ application exists for all smart phones – Simple smart phones subsidised by public-private partnerships (PPP) are available for all and provide specific ‘sustainable food guide’ applications to enable consumers to scan products and see their environmental, social and health implications (for a good practice example, see www.goodguide.com). Retailers have an interest in this to promote their green products.

• Education on ‘wellbeing & looking after yourself’ is integrated in all schools – Education for health and wellbeing become new integral school subjects including physical aspects such as healthy, sustainable eating and lifestyles (e.g. exercise), and psychological aspects like happiness and mindfulness. A specific focus is set on sustainable food consumption.

• Extensive choice editing means that unsustainable or unhealthy food becomes difficult to purchase – ‘Choice editing’, meaning that the most unsustainable food is either taken from the market, phased out, or that disincentives for buying are created (e.g. by raising taxes and / or by moving unhealthy or unsustainable food from top to bottom shelves in supermarkets), in cooperation by public and private actors, is widespread.

• Green public procurement of sustainable food is established – In a ‘leading by example’ way, government public procurement of food in public institutions (schools, universities, hospitals etc.) in collaboration with food charities have established sustainable food catering marks (for a good practice example, see www.foodforlife.org.uk/).

• Restaurants engage in sustainable food provision experiments – in a combined bottom-up and top-down approach, restaurants engage in sustainable food provision (local, seasonal, organic) which is also regulated by the state, which sets minimum standards for sustainable food (e.g. minimum percentage of sourcing local/organic food, or labelling thereof).
SMART FOOD

SHORT-TERM (2012 - 2020)

- **R&D is supported for the development of intelligent devices in kitchens (intelligent fridge, food safety kit etc.)** - Electronic companies engage in research and development for intelligent fridges (e.g. giving menu suggestions; smart phone apps linked to fridge), food safety kits (e.g. develop sensor technology to indicate if food is safe to eat) and living walls for growing (e.g. rainwater harvesting; fertilizer from food waste processor; use of filtered water from washing up).

- **R&D for closed loop energy systems for kitchens and energy recovery from food waste is prioritised in government research spending** – Learning from best practice examples from existing ‘passive houses’ and from tested anaerobic digestion technologies to recover energy from food waste, researchers develop affordable technologies to produce biofuel and fertilizer from food waste generated in the home to mainstream these technologies.

- **Familial learning of traditional food skills is encouraged** – The passing down of information on lost food skills among generations is promoted in cooking shows and ‘inter-generational’ food festivals. The DOHC offers education for parents and minders on easy, healthy and sustainable food provision ante- and post-natal.

- **Guidance on policy around food safety, risk and liability reduces unintended food wastage** – In order to avoid unnecessary food waste, the regulations on ‘out of date’ food become more accurate so that leftover food in supermarkets which is still fit for use can be given to charities and can also be used for domestic consumption.

- **Opportunities to co-create food innovations are provided** – Scientific information about food innovations becomes more accessible to citizens with help of ‘science galleries’, where prototypes of intelligent devices in kitchens (see examples above) are presented to the public and their ideas and feedback are integrated into the design and development of end products.

- **Research developments permit personalised nutritional needs to be linked to sensor technologies** – Researchers develop sensor technology adaptable to personal preferences (e.g. nutritional needs) to facilitate healthy eating without the need for potentially overwhelming information.

- **Debunk the ‘myth of convenience’ in relation to food consumption with the help of information campaigns** – Convenience of processed food has allowed unhealthy options to prevail in modern families. Food networks (NGOs and government agencies) develop information and social marketing campaigns about easy, cheap and quick ways to cook from scratch.

MEDIUM-TERM (2020 - 2035)

- **Education about interactive food-related technologies** – As interactive food-related technologies come on stream, children and adults are educated on their use for sustainable food practices. Education about these new technologies is integrated in the school curriculum at all levels and courses for adults to learn about new food equipment technologies (e.g. for food preparation, storage, and ICD) are provided.

- **Research demonstration projects lead to energy recover from food waste becoming mainstream** – Engineers and local authorities establish facilities to use anaerobic digestion to recover energy from any residual food waste (from food production, processing, restaurants, canteens etc.) at communal levels and demonstrate its use to scale up its application across Ireland.

- **Social networks increase the visibility of healthy and sustainable eating with help of Web 2.0 technologies** – Appropriate eating is promoted, overlaps between healthy and sustainable eating are emphasised and best practice examples are disseminated across social networks (on Facebook, Twitter, linkedin etc.).

- **‘Green Supermarkets’ redistribute food and pilot sustainability standards** – In collaboration with social enterprises like ‘Fareshare’, ‘green supermarkets’ redistribute leftover food still fit for consumption. ‘Food safety kits’ (applying sensor technologies) make facilitate this. Minimum sustainability standards are introduced, regulated by the state.
• ‘Smart’ shopping reduces transport emissions and saves time – Retailers provide increased opportunities for smart internet shopping and delivery which allows people to use their phones, linked to the smart fridge, to send information to supermarkets on what they need.

• Workshops to assist with self-build for smart food technologies are available and affordable - Using already existing materials, workshops are provided by civil society groups and social enterprises where people learn to build their own living walls, composters, wormeries etc.

• New public-private-partnerships (PPPs) engage in developing smart technologies for kitchens – Public and private actors join forces to develop smart technologies for kitchens based on prototypes and present them at trials (e.g. the ‘smart fridge’ needs to be marketed so people can see its value and use).

LONG-TERM (2035 - 2050)

• All-inclusive ‘Smart Kitchen’ energy efficiency ratings are introduced – These ratings are integrated with existing energy efficiency ratings in the home, focusing on smart kitchen appliances and closed loop energy systems.

• Anaerobic digestion is mainstream in Ireland to recover energy from food waste – Energy recovery from food waste has become widespread across Ireland thanks to R&D and trials at home in ‘smart kitchens’ and at larger scale at communal levels.

• Sustainable food and technologies are subsidised through ring-fenced tax revenue to support good food practices – Public and private partnerships provide subsidies to make sure that sustainable food and interactive technologies enable sustainable food consumption to become affordable for everybody.

• Smart phone applications inform about food seasonality, availability and price – Free apps for (affordable) smart phones inform about seasonal and local products in supermarkets, availability and price comparison. Phones are technologically equipped to make smart decisions easier.

• Sensor technology adaptable to personal preferences is available at affordable prices – Sensor technologies which reflect personal preferences (e.g. nutritional needs) and display personal eating plans and meal ideas are readily available.

• ‘Smart Kitchens’ (closed loop energy recovery, smart devices) are mainstream – Thanks to R&D and subsidies, smart kitchens including intelligent fridges, living walls, food waste processors and food safety kits are mainstreamed in 2050.
CHALLENGES

Administrative/policy: Public liabilities (e.g. about issues of redistribution of food gone out of date); lack of co-ordination and cooperation between Government Departments and agencies, e.g. between DAFM, FSAI, DoECLG, DOHC and local authorities (need for better relations between production and consumption); short term thinking; resistance to regulation; fragmented measures; inertia; absence of sufficient and clear policy direction (at national and EU level); data & informational gaps in relation to individual food consumption habits.

Financial: Investment is required in new infrastructure and new technology development; costs arise for necessary retrofits as well as for the evaluation of measures and the enforcement & monitoring of regulations; technical and ethical challenges exist of establishing the real sustainability costs of particular food production practices.

Socio-cultural: Strong impact of habits and norms in food consumption; cultural resistance against change; lack of education about sustainable food consumption; food is not a valued resource; perceived abundance of food; low levels of awareness of the environmental, social and health implications of food consumption and production. Also, there is an under-researched link between food consumption practices and quality of life issues.

Technological: Resistance against technological change; disconnect between designers and users (i.e. need for more co-design); costs and lack of incentives to develop new technologies (smart kitchens); missing resources to make smart technologies 'mainstream'; low impetus for innovation.

System (Infrastructure and Actors): Vested and powerful interests (e.g. of major global food companies) exist in the current food system; there are not enough designated spaces for sustainable food consumption practices (cooking, eating, wasting); inertia from industry & business (e.g. to introduce more flexible working time models); commercial competitive pressures; conservatism in the building sector.

Environmental: There are strong environmental impacts of food production and consumption on soil, water and CO2 emissions; the impacts of climate change and population growth lead to increasing food insecurity; there is no agreed methodology for ecological footprinting or LCA for food products.

DRIVERS

Administrative/policy: Expansion of EU policy for sustainable food consumption and production and food waste (e.g. Vision 2020 EU; labelling regulations, Roadmap to a Resource Efficient Europe); Irish regulation on advertising of ‘unhealthy’ food and drink to children; design standards for energy efficiency (e.g. for kitchen equipment), possibly integrated in building regulations; research and development into anaerobic digestion to generate energy from food waste and incentives at national level to apply these systems; economic incentives for more sustainable food consumption practices; long-term and holistic planning.

Financial: The economic crisis might serve as a catalyst in the short and medium term (i.e. less disposable income might encourage people to engage in more cooking at home and to grow some food themselves). In the medium to long-term, potential economic stability and the availability of capital (public and private investments) as well as R&D in innovative food consumption equipment and energy recovery from waste might increase (together with the market share for local, organic, fairtrade and animal friendly products); technological innovations like the intelligent fridge or the food safety kit might reduce food waste costs.

Socio-cultural: Global trends like population growth will increase the urgency to develop innovative sustainable solutions for food consumption and production and might trigger a greater awareness for (and an increasing demand for) sustainable products (e.g. local, organic, fair-trade, free-range). This could also result in increasing pressure on governments to take action in relation to more sustainable food consumption and production. Furthermore, rising levels of health problems like obesity or diabetes in Ireland might increase people’s awareness about healthy lifestyles and an increasing willingness to change their food practices.
**Technological:** Investment in innovations for resource efficient food consumption and production from public and private actors in order to raise their environmental profiles might increase; mainstreaming of smart technologies (ICT); increasing impact of the green/smart economy; the inevitability of technological development and innovation over time; peer-peer pressure in industry (creating a market advantage through green, efficient technologies).

**System (Infrastructure and Actors):** System collapse or failure (e.g. storms, food and electricity shortages) due to impacts of climate change might lead to a re-valuation of community values and ‘do-it-yourself’ practices; shortened food chains between producer and consumer might be triggered by increased local production, community supported agriculture and farmers markets; the role of media and social marketing in relation to health impacts of food consumption could increase due to rising health problems like obesity.

**Environmental:** Rapid climate change, population growth and resulting food insecurity might trigger the willingness to change among governments and civil societies; increased water insecurity and potential energy crises might enhance the need for alternative energy resources (e.g. from food waste).

**ACTORS**

Due to the variety of actions in the Transition Framework, involvement of and alliances between a range of societal actors (governmental, civil society, NGOs and private sector) would be required. Holistic approaches are required that marry technological efficiency improvements with the stimulation of socio-cultural changes towards the goal of ‘sufficiency’ (sufficient levels of consumption for environmental and social wellbeing). As such, education, policy, research, and business and technology agendas need to be integrated to promote a broader transition towards sustainable food consumption. This will require advances in collaboration across government departments, with one central department (e.g. Department of Environment) playing a key role in the development of a long-term strategy and integrating cross-departmental work (in, for example, the Departments of Education, Health, Agriculture, Employment and Finance).

**PARTICIPANTS IN THE BACKCASTING PROCESS**

A variety of stakeholders from the NGO, public, private and semi-state sectors in the Republic of Ireland and Northern Ireland took part in the ‘visioning’ and ‘transition’ phases of this research. Participants came from a range of disciplinary fields including food consumption and production, design, planning, policy, research, education and communications. This contributed to the diversity of ideas and collaborative learning amongst workshop attendees. These participants included: government organisations involved in food and food waste issues (EPA, Teagasc and Bord Bia), environmental groups and NGOs (An Taisce, VOICE and Slow Food Ireland), the Irish Farmers Association (IFA), retailers and consumer goods companies (Tesco and Unilever), food researchers from Trinity College Dublin and NUI Galway, food redistribution organisations (FareShare Ireland, Food Glorious Food, Bia FoodBank), Dublin Community Growers, people involved in food waste management (RPS – consulting engineers; Clean Technology Centre Cork), Soil Association NI, sustainable education and designers (Design 21).

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Dr Jessica Pape is a post-doctoral researcher on the CONSENSUS project and is based in the Geography Department of Trinity College Dublin. Her research is concerned with sustainable food consumption in Irish households and uses a participatory backcasting approach to design innovations and action plans for a transition to more sustainable consumption practices. Prior to this research, Jessica completed her master and PhD at the Department of Politics and Public Management at the University of Konstanz, Germany, in 2009. Building on expert surveys and case studies, Jessica explored in her PhD the environmental performance of France and the Netherlands. Jessica was also working as a research fellow in an interdisciplinary and international research project on environmental policy convergence in Europe and the OECD (ENVIPOLCON) from 2003-2006.

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ABOUT CONSENSUS

CONSENSUS (Consumption, Environment and Sustainability) is a four-year collaborative research project involving Trinity College Dublin and the National University of Ireland, Galway. It examines four key areas of household consumption that currently impact negatively on the environment and inhibit our ability to achieve sustainable development across both Northern Ireland and the Republic: energy, water, food and transport.

The CONSENSUS project focuses on four key themes:
1) How to measure and evaluate consumption
2) How incentives for sustainable behaviours can be developed
3) Identifying the links between consumption, health and wellbeing
4) How matters of household consumption are being governed through institutional practice and participation.

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