

Food in Northern Ireland:

Current issues, programmes, concepts and initiatives

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Food is fundamental to life and bringing a more sustainable approach to food is a key way to address and promote sustainable development. Food production is a major source of greenhouse gases: *globally, agriculture is responsible for 35% of GHG emissions*¹. Food is a huge contributor to the waste stream and has a disproportionately large contribution to pollution and climate impacts when not treated appropriately: *in the UK we waste almost one third of the food we buy*². Poor diet is a major contributor to poor health: *Western diets high in animal fats and sugars contribute to cancer, heart disease and diabetes*³. Many people are trapped into buying expensive and often unhealthy 'convenience' foods because they do not know how to cook balanced healthy meals. Having a good diet as a child determines health as an adult: *1 in 5 children in Northern Ireland are either overweight or obese*.⁴ *Socially disadvantaged groups are more likely to suffer food poverty and have difficulties accessing a variety of nutritionally balanced good quality and affordable foodstuff*.⁵ It is estimated that in the next 20 years, the demand for freshwater will increase by 30%. Already, two thirds of water used in the production of food imported into the UK comes from outside UK borders. This means UK consumption is impacting gravely upon availability of fresh water in the developing world⁶.

Addressing these issues in a co-ordinated fashion could provide a great opportunity to tackle many of the ills affecting our society and that have a negative impact on our environment. Changing our attitudes to food, what we eat and how it is produced has the potential to address locally the huge challenges facing the world, in terms of producing enough food to feed a growing population, tackling climate change and reducing energy consumption. We must address this significant and highly polluting waste stream and encourage healthier and more sustainable lifestyles and diets.

This paper surveys some of the work that is taking place in Northern Ireland and looks at programmes across the United Kingdom and Republic of Ireland that provide examples of good practice for possible local implementation.

Local food production and sales and other initiatives based around food are on the increase in Northern Ireland. There has been a significant increase in awareness of and participation in the local food economy, ranging from growing your own food to buying local produce. Much more could and should be done to increase action to levels seen in the Republic of Ireland and elsewhere in the UK.

CONTENTS

3 Summary

Section 1: AREAS OF ACTION

4 Grow Your Own: Allotments and Community Gardens

6 Access to Land

7 Transition Towns

8 Food and Growing Food in Schools

8 Healthy Eating and Cooking

10 Food Production and Sale

11 Food Waste

Section 2: DRIVERS FOR ACTION

13 Healthy Diet for the Planet

16 Food and Biodiversity

16 Sustainability of Agriculture in Northern Ireland

17 Food and the Social Economy

18 Food and the Role of Local Councils

Section 3: CONCLUSIONS

19 Why should we act?

20 What should we do?

Section 4

23 Tables summarizing ongoing project in Northern Ireland

Section 5: REFERENCES

25 References

Summary

- Carrickfergus Council has produced an Allotment Strategy that should be replicated by other Borough Councils, to meet the growing need for allotments across the country.
- There is a need for a countrywide drive to promote 'grow your own' whether in private and community gardens, allotments or through guerrilla gardening.
- Increased communication and co-ordination is required within the Transition Towns Network. This will aid sharing ideas about what works where and how.
- In England and Scotland the Food for Life Partnership is promoting sustainable local and organic food in schools and communities.
- Schools can engage with parents and manufactures to improve children's dietary choices.
- The Field to Fork initiative launched in the West focusing on local food for schools. This should be extended to all schools in Northern Ireland and could be linked to a Grow-Your-Own-Scheme.
- Healthy Food for All are currently finalising a 'how to' guide on setting up and running a community food initiative. This will be freely available to all initiatives across the Island of Ireland.
- A desire to 'buy local' needs to be nurtured and the benefits of doing so should be promoted and celebrated.
- A Healthy Food Code of Conduct should be made available to help people choose what food to buy.
- Accreditation schemes should be used to encourage caterers to serve freshly prepared and ethically source food.
- Laws regarding food labelling need to address marketing of unhealthy food, especially those foods targeted at children.

SECTION 1: Areas of Action

Grow Your Own: Allotments and Community Gardens

Increased provision of and interest in allotments is something that should be encouraged and built on. Barriers that prevent people getting involved in 'grow your own' include the practicalities and the perceived cost. This is why the 'guerrilla gardening' that started off the Incredible Edible project in Todmorden was extremely popular. It did not involve any fundraising or 'red-tape' connected with acquiring the land. Calderdale Council is the first in Britain to issue land licenses to grow food on spare land. This involves the council carrying out a survey to find out what land is available to use and creating a land register. A street/estate/group of people can then become an 'association' and lease the land off the council – this by-passes the very long waiting lists for allotments.

*A great example of this is the **Incredible Edible** initiative in Todmorden, which aims to see the town self-sufficient, providing healthy food for those within a population who are more likely to be unable to afford it. They started by planting unused land around the town with vegetables and herbs (guerrilla gardening) and then involved public bodies to use the land around their buildings. The largest social housing landlord of the area, Pennine Housing, provided all of their residents with a 'grow your own starter kit' (usable even for those residents living in flats) and encouraged residents to grow their own on any communal land within their housing area⁷.*

In Northern Ireland we seem to be at the beginning of this process. There are a number of community gardens: Eglantine (Miriam Turley), Cloughmills (Declan Donnelly), Redburn Primary School (Holywood TT), Helens Bay (John McCormick), Growing Connection Bangor (Joan Woods – Community Farm), Minnowburn (Craig Somerville), Derrygonnelly, Belleek and Belcoo in Fermanagh, the Organic Centre (Anita McCabe), Belmont School Derry, Community Gardening - Belfast City Council (Helen Hurrell). Involvement of the Northern Ireland Housing Assembly, private developers, schools and youth groups (from community clubs to youth justice and restorative justice organisations) would greatly help reap the many benefits of this area of food sustainability. Mullaghmore & Castlevue Community Association, Omagh, The Wolfhill Centre Ligoniel, Ards Allotments, Eden Allotments, Vista Allotments, allotments in Downpatrick and at Annadale, and planned allotments at Minnowburn and Annahilt are just a few currently available in the Greater Belfast area. Colin Neighbourhood Partnership is in the process of reclaiming ground to be used for allotments in the Colin Glen area.

*The vegetable patch at **Portland Prison**, highlighted on River Cottage, proved the benefits to young offenders of learning such horticultural skills; the prison governor noted a decrease in re-offending since the introduction of the grow your own scheme, as it provided the inmates with skills which could be transferable to not only life outside of prison, in providing food for themselves and their families, but also skills which could be used to provide a career⁸.*

The **Federation for City Farms and Community Gardens**⁹ is a registered charity that supports 120 city and school farms, 1,000 community gardens, growing numbers of community managed allotments and 200 city farms and community gardens in development. FCFCG is supported by several government departments and regional development organisations. In Northern Ireland the FCFCG is promoting the **Northern Ireland Allotments Forum**, the **Allotments Regeneration Programme** and **Allotment Officers Forum** and is looking at other areas where more work is needed. This kind of networking tool needs to be better utilised by those interested in grow your own in Northern Ireland.

The Northern Ireland Housing Assembly has allowed a small area to the rear of Divis Tower to be used for growing vegetables. This project in particular is something that should be extended; providing residents in social housing with areas where not only can they grow their own food, but an area that can provide a focus for community activity. As well as the benefits of physical exercise in gardens, research has shown that soil bacteria can act in a similar way to antidepressants and improve mental health¹⁰. **Willowbank Organic Producers** is a project for people with disabilities that aims to tackle marginalisation and social exclusion. It promotes community development and is an experiential learning environment for the delivery of horticultural training. This is an area that could prove extremely beneficial in Northern Ireland, where social deprivation is quite widespread and there is already a drive to target anti-social behaviour.

Neighbourhoods Green, who aim to improve green spaces associated with social housing (working in Nottinghill, London), noticed a marked decrease in neighbour complaints, anti-social behaviour and crime in areas where projects were undertaken to improve unused land for residents. They felt that “involving residents from start to finish had increased awareness around social responsibility” and rather than many residents requesting transfers out of certain areas,

The Organic Centre is heavily involved in food sustainability in the Republic of Ireland and Northern Ireland providing information, education and training opportunities surrounding sustainable food. However, they have no plans to extend any further than the three existing community gardens in Northern Ireland and have not to date received any funding from any department within the Northern Ireland government. With support from the Republic’s HSE, the Organic Centre has implemented its **Community Food Project**, which has resulted in a number of community gardens and the **Growing in Confidence** project¹¹. Growing in Confidence has six gardening projects across three counties. It employs a professional gardener and is supported by cookery classes. The project aims to contribute towards addressing obesity, cardiovascular health and national health. Support from the Northern Ireland Assembly to extend such programmes throughout Northern Ireland would be invaluable. **Glenhordial Permaculture Farm** is a hub of activity just outside Omagh. The farm has run a series of introductory classes in organic gardening along with other courses such as introductory permaculture courses and an organic gardening course for schools¹². **The National Trust** has launched a campaign to provide 1000 allotments across the UK¹³. The National Trust giveaway 35 plots at Lough Erne on a first come first served basis¹⁴.

Groundwork Northern Ireland has been delivering community-led environmental regeneration projects since 1991. With teams of both qualified landscape architects and project development officers, along with AutoCAD and GIS technical support, they are well placed to deal with the

increasing number of requests for Groundwork to assist local communities with developing their community allotments. Through Bespoke Allotment Design Service, sketch design and planning advice incorporating on-site analysis and advice on how to proceed is provided. Costs will be dependant on the size of the site and individual community requirements. Groundwork provides general horticultural training to support the development of community allotments. In partnership with The Organic Centre, Groundwork NI is running a series of practical 3-day “Introduction to Organic Gardening” courses. Groundwork NI is about to set up a network to support communities and agencies to develop community allotments. Groundwork NI’s GIS service, in conjunction with on-site analysis, will help identify potential community allotment sites based on the mapping of key data sets, Groundwork’s suitability criteria¹⁵.

The **Building a Transition Community Initiative** will develop the grounds at **Footprints Women’s Centre**¹⁶ and offer food growing training to local residents who will be encouraged to volunteer in the garden. A local gardener will be hired and will oversee the development and training of the volunteers. The project will grow fruit and vegetables within the grounds of Footprints Women’s Centre and the produce will be used within the Footprints Catering Services. Any supplies surplus to requirements will be used in schools in the local neighbourhood. The initiative, funded by **Safefood**, is aimed at promoting greater access to healthy food in low income areas¹⁷. Miriam Turley is running organic growing courses at Helens’ Bay Organic farm. From March 2010 weekly sessions will provide lessons in preparing beds, sowing seeds, planting out, caring for crops, tackling pests and diseases, and planning the garden.

*The **Liberty Consortium** in Derry emerged from Shantallow residents desire to provide safe play areas that would promote healthy lifestyles for children. As funding becomes harder to attain, the consortium has looked at allotments as a means of making themselves more sustainable. The groups **Green Fingers Allotments** are available for other local community projects such as a homeless shelter and extended schools¹⁸.*

The **Plot 15 Supper Club**¹⁹ in Belfast is a great celebration of food and a demonstration of how growing food together builds social capital in communities. The Supper Club brings people together to enjoy seasonal, local food. From spring this year, much of this will be acquired from the hosts’ Belfast allotment. This kind of social activity can change our psychological approach to growing food and add to awareness of the processes. Anyone can join the club for an evening for a charge of £20.

Access to Land

The **Soil Association’s Inspiring Ideas** publication has noted the dearth of allotments in Northern Ireland due to a lack of legislation to oblige local authorities to provide them (as is the case in England and Wales). The demand is certainly here as all existing sites are full with long waiting lists. Carrickfergus Council has an Allotment Strategy and has recently made more land available; this strategy needs to be adopted by other local councils. There is also a need to overcome the perception that a large area of land is required to grow your own food. This too can be addressed by local authorities.

Similarly, the **Landshare scheme**²⁰ allows people with unused land to make it available for those who want to grow. In Northern Ireland, there is a general lack of awareness of this online tool. At present, it shows 22 people offering land here and 41 wishing to grow. The Organic Centre and the Transition network have provided a hub of information for interested parties in the Republic of Ireland. This facility is lacking in the North and there is a lack of awareness about processes of community growing as well as regulations surrounding it.

Positive approaches to pro-active sustainable food procurement could push food procurement in the right direction. The **Green Flag Award Scheme** is the national standard for parks and green spaces, and these awards acknowledge the work of successful community gardens. So far in Northern Ireland these awards have focused on green spaces rather than growing food in a bid to live a more sustainable life.

Transition Towns

Transition Towns are towns where members of the community work collectively to address the challenges of peak oil, climate change and economic crisis together through local initiatives. These groups will form an energy descent plan for the town that harnesses local resources and social capital to create resilience in the face of these challenges and reduce oil dependency. Rob Hopkins, founder to the Transition movement, has outlined a number of changes that need to be made to meet food security needs. These include a move away from just-in-time food distribution, greater modularity for self-reliance, use of perennial crops for soil building and carbon capture, use of food sheds for procurements (creating procurement limits in terms of distance), and production of targets for towns (in percentage terms) of food procurement from various sources (i.e. how much and what can be grown in various areas). This would add to a much needed national food plan.

Many Transition Towns initially focus on food as this is an accessible and tangible focus for dealing with climate change, peak oil and economic instability. Novel ideas for engaging the public include Transition Nottingham's urban harvest and Glastonbury's local food directory. Transition Bristol has accessed an area of land through its local council for use as a community garden; it also runs fruit tree pruning classes and organic training courses. Totnes and Canterbury also have community gardens. Totnes has been named the 'nut tree capital of Britain' (a great means of carbon sequestration). Holywood Transition Town has started an apple orchard accessible to the local community and this year they are attempting to grow their own Christmas dinners. There is a need for improved communication between Transition Towns, both within Northern Ireland and with those in other parts of the United Kingdom, to put together examples of best practice and guidance.

Transition Towns in Derry, Omagh, Whitehead and Holywood provide a great focus for community action. There is also a group developing in Belfast. There needs to be a countrywide drive to promote grow your own, whether that be in a grow bag from your balcony, window pots, private gardens, allotments or community or guerrilla gardening. Transition Towns provide a common approach for councils, schools, and other public bodies in providing information and practical assistance for community action. The absence of a Transition Town group should not be looked upon as a barrier to sustainable food procurement.

Food and Growing Food in Schools

Access to local sources of fresh food promotes healthy eating for pupils and teaches them about how food is produced; it also benefits local producers. There are several policies that schools can adopt to become more sustainable. These include buying fair trade produce; using composting for waste and ensuring external suppliers comply with sustainable practice. Another way schools can tackle food sustainability is to promote visits to local farms.

The **Food for Life Partnership**²¹ in England is a network of schools and communities committed to transforming food culture by revolutionising school meals to be fresh, seasonal, local and organic. It aims to reconnect young people with where their food comes from and inspire families to grow and cook food. In Scotland, Food for Life is taking a different approach, working with food producers to ensure sustainability from the supply side. Their approach deals with a wide range of caterers including schools and universities.

A Leeds University study has shown that although school meals have improved, lunch boxes have not. It found lunch boxes do not meet the nutritional standards now set for school dinners and that they contained too much saturated fat, sugar and salt. Charlotte Evans who led the research, has noted that although legislation is lacking, schools, parents and manufacturers can take a lead in improving this situation. Schools can engage parents in health promotion activities and manufacturers could offer better choices for busy families²².

For Northern Ireland as a whole, there is currently no cohesive programme being implemented in schools. “**Field to Fork**” was an initiative launched in the West that focuses on local food for schools and its links to nutrition, seasonality, provenance, environment, health and our cultural heritage. This is something that should be extended to all primary schools within Northern Ireland and could be partnered with a ‘grow your own’ scheme.

Eco-Schools is an international award programme guiding schools towards sustainability. In Northern Ireland it is administered by Tidy Northern Ireland.²³ Some ways in which it aims to promote healthy living is through its influence on the quality of the meals served within the canteen and provide healthier options for pupils through tuck shops or vending machines²⁴.

Healthy Eating and Cooking

DEFRA’s vision for food in 2030 incorporates the hope that “consumers are informed, can choose and afford healthy, sustainable food”. There is a belief that healthy, sustainable food is beyond the reach of the socio-economically deprived. This needs to be challenged and people need to be empowered to overcome real (food deserts and time poverty) and imagined food poverty traps.

Given the huge financial cost of waste to the average family with children²⁵, planning and budgeting time and money for good food is imperative. In the Republic of Ireland, **Healthy Food for All** are currently finalising a “how to” guide on setting up and running a community food initiative. The guide, funded by Combat Poverty Agency and the Department of Health and Children, Ireland, will be available free of charge to all community food initiatives across the island of Ireland²⁶.

Food for Life: The Bogside & Brandywell Health Forum (Healthy Living Centre) has endeavoured to develop, organise and deliver a range of healthy eating programmes, including demonstrations and practical cooking activities as well as education-based activities and information. It will bring together a range of community and statutory workers who are tasked with the improvement of health within the local community. Footprints Belfast is running a four week programme to enable families to enjoy cooking and sitting down to eat together.

The **Cook It!** initiative has addressed the issue of education for nutrition in lower income groups. It aimed to provide practical skills training for food preparation. **The Health Action Zones** programme is also aiming to promote healthy eating by identifying needs of the communities and empowering people to counter inequalities through co-operative action. This programme recently launched a networking forum for groups concerned with food poverty. However, these measures are a drop in the ocean against the vast amount of cheap foods in the European market that contain high levels of saturated fats and are a significant contributor to heart disease and obesity²⁷.

Public sector projects such as **The Health Action Zones** initiative could tap into the Transition network for ideas on how to deal with food poverty. The HAZ initiative is a programme which has been adopted across a number of health trusts to tackle health inequalities²⁸. It uses a community-led partnership approach to create safe, healthy places to live²⁹. HAZ areas, such as Castledawson and Ballee, have had representatives attend organic growing courses. These areas often have the plethora of social capital needed to run Transition initiatives. There is much potential for networking between the Transition movement and these kinds of community-based groups.

The East Belfast Mission Healthy Eating Education Community Food Initiative aims to provide healthy nutritious food for residents and ex-residents of their homeless shelter. This project will also provide health and diet sessions and cookery demonstrations to residents and ex-residents on how to plan and prepare healthy food on a low budget. Information and advice sessions will also be provided for local residents, senior citizens and users of their family and community programmes.

FareShare is a national charity which addresses food waste and food poverty simultaneously.³⁰ Fare Share's motto is 'no good food goes to waste'³¹. This project collects good quality, in date food from wholesalers and retailers and redistributes it to charities who feed the underprivileged (homeless, hostels, etc.). It is 'franchised' by UK region, but is just beginning to take off in Northern Ireland. It diverts hundreds of tonnes of wholesome food from landfill, provides food to the disadvantaged, has training elements and cuts the costs for charities providing for the less privileged in society. There are strong links between poor diet and poor health, and these are strongly manifested in the disadvantaged; this programme addresses the diet issues and improves health and wellbeing. In 2008/09, the food redistributed by FareShare contributed towards more than 7.4 million meals. This redistribution of food helped businesses reduce CO₂ emissions by 13,950 tonnes in 2008/09. Funding has recently been attained through the Big Lottery fund to make establish Fareshare in Northern Ireland.

Food Production and Sale

Food production and sale in Northern Ireland is lacking a cohesive programme that raises awareness of and encourages public participation in such activities. There is a need for a focus on the local food economy, not just by DARD, in encouraging farmers to adopt sustainable food practices, but also by local food businesses, restaurants and food producers. A desire to 'buy local' needs to be nurtured and the benefits of doing so should be promoted and celebrated.

The Sustainable Development Commission's recommendations to review food production highlight the need to reconsider labour requirements and to improve labour conditions and pay in the food industry³². There is also a need to reconsider the opportunities for generating growth in horticulture and the future of food and farm advice systems. As outlined by DEFRA 2030 Vision: Smaller Portions, a **Healthy Food Code of Conduct** could help people choose what food to buy - ideas include clearer labelling, smaller portions for "energy dense" or high salt foods, reducing fat and sugar in foods and nutrition information on restaurant menus. Accreditation schemes such as **The Food for Life Catering Mark** recognise and encourage caterers serving freshly prepared and ethically sourced food.

Through **The Food and Fisheries Programme**, 25 small scale food producing firms across the South Eastern Economic Development (SEED) group will now benefit from expert help to identify new products, based on local foods and traditions, and to gain access to new local markets. The firms will be able to exploit opportunities to develop local food products, brand and market them and increase their economic sustainability to create employment and tourism opportunities³³.

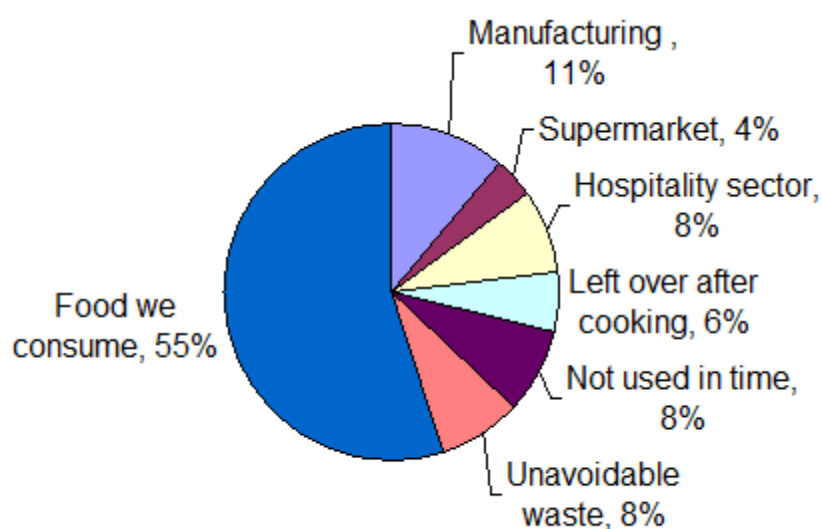
Terra Madre, a sustainable food festival organised by **Slow Food Ireland**, could become a landmark event given the high standard of produce available on sale here. Slow Food Ireland carried out a survey and found out that people believe the greatest challenge to sustainable future for Irish food is cheap food imports (33.2%) followed by a strong lack of food culture (25.4%) – these could be diminished through support for the local food economy.

Although council allotments do not allow private profit from the sale of food grown, profits can be channelled back into an allotment association for improvements or upkeep. Also, extra produce could be swapped for surplus produce from other allotmenters. From private allotments, the produce can be sold at the discretion of the allotment holder. Farm shops are an invaluable resource in providing the larger community with links to sustainable local food; likewise community markets, which are an undervalued and under-used resource. Local farm shops can be found using **farmshop.uk.com**³⁴, a website which helps people source local food. There is a growing market for organic local food. Box schemes such as **Helen's Bay Organic Farms**³⁵ make local organic produce more accessible for people who do not have access to transport or do not have time.

Junk food marketing to children also needs to be tackled. Inappropriate labelling on foods targeted at children causes confusion among consumer groups³⁶. The British Heart Foundation recommended a new law: "It is prohibited to act in a way where the purpose or effect is to promote an unhealthy food product to individuals under the age of 16"³⁷. A 9pm marketing watershed on such products should be supported by the Northern Ireland Assembly and NGO sector.

Food Waste

2,100 UK households took part in a questionnaire and had their food waste analysed. It showed that in the UK we throw away around one third of the food we buy (8.3 million tonnes), of which 65% (5.3million tonnes) could have been eaten. There are also other sources of food waste; 1.6 million tonnes from supermarkets, 4.1 million tonnes from manufacturing, 3 million tonnes from the food service, hotel and hospitality sector; the remainder is associated with agriculture and non-household municipal sources (Andrew Parry, **WRAP**). Data from the UK and Europe suggest that almost 20% of the total greenhouse gases come from producing, transporting, preparing and storing food and drink. When food is sent to landfill it produces more greenhouse gases as it breaks down. Assuming half of the food thrown away could have been eaten, the potential carbon dioxide equivalent that could be saved is equal to taking 1 in 4 cars off the road.



Pie chart showing the breakdown of food waste from cradle to grave³⁸.

A 2008 Belfast City Council Initiative collected food waste from 7,000 homes. The scheme took the city's recycling rates to a record high of 27% and was so successful it has now been extended throughout the city. Brown bins in Belfast have been used for food collection since March 2010. Ards Borough Council has used brown bins to recycle food waste since April 2009. Other councils, such as Antrim Borough, have made home composting facilities available; a home composter can be purchased for £9.99. However, this requires residents to have the space for it and to be able to afford the bin. The link between amounts of waste going to landfill and rates bills needs to be made more apparent to the public as this could encourage use of these facilities.

The cradle-to-cradle paradigm is a framework in which the effective, regenerative cycles of nature provide models for wholly positive human designs. As in nature where one organism's "waste" cycles through an ecosystem to provide nourishment for other living things, cradle-to-cradle materials circulate in closed-loop cycles, providing nutrients for nature or industry.

The capacity for dealing with food waste in Northern Ireland through anaerobic digestion is growing. There is some delay in getting this technology off the ground, but there are now a few digesters up and running. The only existing AD facility in Northern Ireland is in Omagh; it deals only with farm waste and may consider food waste in the future. Planning permission for an anaerobic digestion facility in Dungannon was passed in February 2010. There is also considerable support for a centralised Belfast facility.

If this opportunity for food and farm waste is addressed in a sensible, sustainable manner now (strategically placing digesters around the province, researching the most cost-efficient way to bring waste to plants and addressing issues regarding fears about smells/environmental impacts of the technology) then significant progress will be made in the way we deal with waste. However, dealing effectively with waste should never be seen as a substitute for avoiding waste in the first place.

The **Stem Project**³⁹ helps businesses set up Environmental Management Systems (EMS) as management tools that enable assessment and control of the environmental impact of their activities, products and services. Willowbank Organic Producers set up an Environmental Management Scheme after a Community Eco-Challenge and has reduced waste and energy consumption through it.

Packaging is a key aspect of waste in the food industry. **CAFRE** and **Pira** worked together to offer a range of workshops about sustainability issues in the packaging industry. These seminars were open to the whole Northern Irish food, drink and packaging sector and look at carbon footprinting and food contact compliance⁴⁰. The environmental team at **Invest NI** offer free seminars and workshops on environmental and energy related topics⁴¹.

Section 2: DRIVERS FOR ACTION

Healthy Diet for the Planet

As global populations are set to soar to 9 billion by 2050, the urgent need for food sustainability is becoming ever more pertinent. Arguments for and against genetically modified crops, organic farming, amounts and means of meat production and attaining food locally (in a world of competitive markets) need to be dealt with in a strategic manner, urgently.

Organic: The Soil Association has been working to promote organic farming and demonstrated its role in carbon sequestration. They claim the role of agriculture in tackling greenhouse gas emissions has been underestimated. The IPCC has claimed that 90% of mitigation potential lies in improved soil carbon levels. Organic farming produces 28% higher soil carbon levels in Northern Europe. A carbon sequestration rate of 560kg CO₂ per year can be achieved for each hectare of cultivated land converted to organic farming in the UK for at least 20 years⁴². This is the equivalent of an offset of at least 23% of UK agriculture GHG emissions. After 20 years rates diminish; however the up coming 20 years are crucial to global CO₂ levels. Carbon sequestration in soil produces humus, improving soil structure and quality. This can also help with climate change adaptation by reducing impacts of floods, droughts, water shortages, and desertification thereby improving water and food security. Organic farming increases soil carbon levels by producing additional sources of organic matter in forms more effective in producing soil carbon, integrating crop and livestock systems and by increasing the proportion of vegetation cover to promote soil micro-organisms that help stabilise soil carbon⁴³. Totally organic food systems may not be a realistic short-term goal, but attempts by Chinese soil scientists have revealed that less is more in terms of synthetic fertiliser use. Reduced fertiliser use has helped avoid nitrate accumulation and serious pollution problems⁴⁴. **The Organic Supermarket**⁴⁵ is an online tool that helps consumers find local organic suppliers.

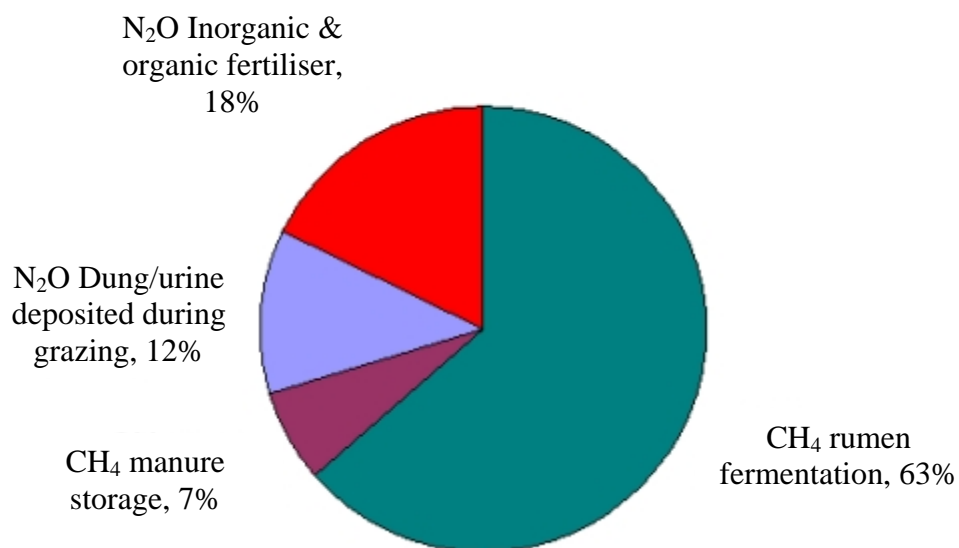
Seasonal and Local: Eating local and seasonal produce has well documented environmental benefits, as it reduces energy expenditure associated with production, food miles and preservation. DEFRA's 2030 food vision states demand should be met by profitable, competitive, highly skilled and resilient farming, fishing and food businesses, supported by first class research and development. Our food security can be ensured through strong UK agriculture and food sectors and international trade links with the EU and global partners that support developing economies. Promoting links with the EU and global partners can discourage local food procurement. There is a need for balance between this aspect of food security and the reduced environmental impact of food consumed. **The National Trust** website provides a **Seasonal Food Guide** to increase awareness of food miles⁴⁶. **Localfoodadvisor.com** is an online directory of local producers, it allows users to search by region to find sustainable producers. Slow Food Ireland and Helens Bay Organic Farm publish seasonal recipes online.⁴⁷

Between October 2007 and October 2008 the Fife Diet asked people to sign up to eating food from the region of Fife for a year, monitor their progress and share their experience. It aimed to bring people together to eat local food, boost the local economy, make fresh organic produce more widely available and educate people about how to eat seasonally and reduce food miles. On DEFRA's document Food 2030; Hilary Benn said the expansion of fair trade and free-range food illustrated how

shoppers could drive trends in food production - and he hoped they could do the same for sustainable, locally-grown products.

Genetically Modified: Last year the Royal Society called for UK investment in GM crops to deal with the threats of population growth and climate change. At the same time several environmental NGOs are warning of the threat to biodiversity and a moratorium was placed on India's first GM crop due to health and safety concerns. A good deal of misunderstanding and debate still surrounds this issue. Arguments surrounding improved crop characteristics, production of precursors to plastics, reduced need for pesticides and promise of future drought/heat/cold resistant plants are met by claims that GM crops will not feed the world and that issues of distribution need to be addressed and a lack of evidence for reduced need for pesticides⁴⁸. Co-existence measures have been an area of concern for the UK government and devolved administrations for a few years but it is still almost impossible to tell what foods contain GM crops.

Meat and Dairy: The meat and dairy industry is unsustainable in its current form in Northern Ireland. Farmers are not meeting production costs despite continued support from the EU⁴⁹. International trade with countries such as Brazil and Argentina is making it harder for meat and dairy farmers here to make any profit. As food security issues increase in severity, diverting current levels of grain into this industry will no longer be an option. The UN Food and Agriculture Organisation are urging inclusion of insects in countries food security plans as a new source of protein. Insects require 2g of grain to gain 1g of weight compared to 8g required by cows.⁵⁰



Sources of greenhouse gas emissions from beef production systems.

Results based on a 500 kg steer, inorganic fertiliser application rate of 100 kg N per ha. All figures based on carbon dioxide equivalents⁵¹.

Methane is a major greenhouse gas of beef and dairy production but nitrous oxide from dung and urine and the application of fertilisers also make significant contributions. Researchers are looking at how to manage animals and modify feeding to reduce amounts of emissions associated with management of livestock slurry and fertilisers to reduce the carbon footprint of beef production. The

following recommendations have been made by the Agri-Food and Biosciences Institute in Northern Ireland: reduced inputs of inorganic fertiliser with consideration for the potential negative effects on animal performance and grass growth, avoiding spreading of nitrate containing fertilisers under wet conditions and allowing an interval of at least three days between spreading slurry and applying inorganic fertiliser⁵². Grasslands for grazing cattle can provide vital stores for carbon sequestration. For this reason it is not recommended that meat and dairy are eliminated from the Northern Irish diet. The **Ulster Wildlife Trust** (lamb and beef)⁵³ and **Gilpins Farm** (beef)⁵⁴ are two local producers which have been Certified Organic by the Soil Association.

As the pie chart illustrates, 63% of greenhouse gas emissions from beef production are linked to rumen fermentation. Improved slaughter patterns could address this issue. Relative to steers slaughtered at 25 months of age, rearing dairy-origin calves as bulls and slaughtering at 16 months of age improves animal performance and margin over feed costs and reduces the carbon footprint⁵⁵.

As new technology comes into play, sustainability can be improved, but it is important that animal welfare is not compromised in the process. A recent proposal for an 8,100 dairy cow factory farm in England highlights these issues. The farm would produce carbon emissions equivalent to 3,000 houses but by using of anaerobic digesters it would be capable of providing energy for 2,000 homes. Animal rights activists have expressed outrage at the proposals for a farm with battery-like conditions.

Meat is also extremely water intensive. It takes 2,400 litres of water to produce one burger⁵⁶. 65% of UK water consumption is embedded in food production and that meat provides the fewest calories per litre. This fact combined with other sustainability issues means that no matter how much more productive we make the meat production system; the world needs to start consuming less meat. Meat can be partially replaced with alternative, less energy and water intensive forms of protein such as beans and nuts. These have added health benefits of containing less saturated fat. The focus of the CAP needs to be revised to redress the push towards production of meat and dairy products at the expense of fruit and vegetables. Making meat and dairy affordable through heavy subsidies has led to high levels of consumption of these energy dense foods. This contributes greatly to levels of obesity, type 2 diabetes, cardiovascular disease and some forms of cancer.

Water: Conservation is a necessity as a fraction of one percent of the earth's water is available for drinking, irrigation and industrial use. All over the globe, municipalities and farmers are pumping water out of the aquifers faster than it can be replenished. 10% of water use is by households while 70% is used for agriculture. Of the 70%, one half of that water is wasted due to evaporation or runoff. "Drip irrigation uses 30-70% less water than traditional methods and increases crop yield to boot." This technology was first developed in the 1960's but, even now, it is used on only one percent of irrigated land⁵⁷.

Food and Biodiversity

The carbon footprint of our food, greenhouse gas emissions, impacts on ecosystems and the food chain are crucial issues to the future of food security. Agriculture depends on biodiversity to contribute the raw materials for crops, seeds, sustainable fuels, livestock breeds, pollination etc. Biodiversity provides the means for pollination, genetic breeding and the development of disease resistant strains⁵⁸. NFU president Peter Kendall commented in Food 2030: "Farmers and growers are already demonstrating that they can produce more food while impacting less. What we now need are policies that underpin and enhance a productive agriculture sector".

Increased awareness of the relationship between agriculture and biodiversity is required. Agri-environment schemes were instituted to provide funding to farmers and land managers to farm in sustainable ways that enhance the landscape and help biodiversity. Over 4,500 farmers participated in the Environmentally Sensitive Areas scheme and were monitored for ten years, from 1995-2005. It is a European requirement that agri-environment measures are now a compulsory element in all Member State rural development plans. Currently there are two schemes available under the Northern Ireland Rural Development Programme, namely the **Northern Ireland Countryside Management Scheme** (NICMS) and the **Organic Farming Scheme**. The NICMS aims to protect field boundaries and associated biodiversity. The Northern Ireland Biodiversity Group has noted that resourcing is constraining the NICMS in comparison to other support systems for agriculture⁵⁹.

Agro-forestry schemes are a promising means of protecting biodiversity. Silvopastoral systems can be achieved by either re-spacing established woodland or planting trees into grazed pasture. These systems enable farmers to reduce pesticide usage. Trials in England have shown that increased biodiversity encourages populations of ladybirds that eat pests and diseases. Improved technology is required to maximise yields from such systems and ensure they can compete in the food market.

Sustainability of Agriculture in Northern Ireland

The Sustainable Development Commission has outlined a number of key factors that need to be addressed in relation to food security. In Food Security and Sustainability they have outlined the need for a clear definition of food security, the need for government to make a clear statement of intent, for DEFRA and the Devolved Administrations to undertake specific sector assessments, for DEFRA to update the soil strategy and give food production capacity high priority, for DEFRA and the Department for Business Innovation and Skills to review food labour requirements, for DEFRA and Domestic Affairs sub-committees along with Devolved Administrations to co-ordinate a relevant department to deliver advice on sustainable diets with regards to peoples' circumstances and for DEFRA and the DAs to map new and more ambitious common sustainable food policy and, with other EU member states, shift the CAP in that direction⁶⁰.

In Wales, political leadership has been particularly strong in supporting sustainable agriculture; organic farming and food has played an important and strategic role. This approach should be adopted in Northern Ireland. We also need sustainability indicators for food procurement and urgent implementation of the latest Sustainable Development Strategy. In the UK, the food trade (import/export) gap is especially unsustainable in the current climate where traditional sources of income such as financial, service sectors and manufacturing are failing.

In England, **Community Supported Agriculture** (CSA) has created a partnership between farmers and the local community, providing mutual benefits and reconnecting the people to the land where their food is grown. The Soil Association is aiming to support 70 CSA enterprises in England through training events, mentoring and producing guides, toolkits and training materials. The Soil Association is running a three year skills development programme that will equip 500 farmers and growers from 150 businesses with the skills and knowledge to both improve business sustainability and reduce greenhouse gas emissions in Scotland.

The Countryside Management Scheme's **Good Farming Practice Guidelines** deal with nitrate vulnerable zones (sets a budget for each farm depending on stock/land etc), the Water Framework Directive (concerned with phosphates that stay longer in the soils and have contributed to Lough Neagh being one of the most polluted lakes in Europe) and the Waste Framework Directive. The NICMS's Organic Farming Scheme was designed to assist farmers in conversion to organic methods of production. The uptake toward the target of 1,000 is slow; there are currently fewer than 200. This is linked to the lack of profitability, as supermarkets lower prices to meet demand for affordable organic produce. One way to support organic production is through local farmers markets and box schemes.

Orchard Acre Farm is committed to sharing our knowledge and skills and is a good example of how farms can achieve greater sustainability through diversification. Its objectives include passing on knowledge and skills about food and growing food, bringing people up close and personal with nature and inspiring passion for the natural heritage and culture of Ireland¹. In Northern Ireland there is a network of 'Focus Farms'. These are intended to lead to the creation of a more competitive agriculture industry through the provision of farmer-led training to farmers¹.

The **Organic Farming Scheme** is an [agri-environment scheme](#) that opened in 2008. It is a voluntary scheme that aims to protect and enhance the rural environment. It encourages and assists farmers to convert to organic farming to help meet consumer demand for organic produce. A Pan-European certification is expected in the future. Until this is established organic buying groups could promote the industry here.

Food and the Social Economy

A social enterprise is also known as “not-for-profit” because financial gain is used to further social and environmental goals rather than being distributed to financial investors. Social enterprises aim to fulfil the “triple bottom line” of achieving social, financial and environmental goals within the community they are located. Social enterprises can take a lead in assessing the need for facilities in an area.

Longford Community Resources are contributing to an assessment of the level of demand for an Allotments Association in the town. 'Get Up and Grow' is a socio-economic project supported by STAP (The Local Strategic Partnership), funded under the Special European Programme. The project aims to enable persons with disabilities to undertake training and work placements, while at the same time producing quality farm fresh and ornamental produce for resale.

Co-op Food shops have taken a proactive approach to several social issues. Their ethical policy states: “We are committed to support the Universal Declaration of Human Rights and improve conditions in our supply chains”. They are the largest retailer to stock only free-range or organic eggs⁶¹. The Co-operative has also been the UK’s biggest supermarket supporter of Fairtrade providers since 1992, and has achieved a number of Fair-trade firsts: in 2002 Co-op converted their entire block chocolate range to Fair-trade; in 2007 they sold the first supermarket Fair-trade bag; and by 2007 they had Fair-trade bananas in every store. They also provide online information about healthy food choices⁶².

Other social enterprises have used food as a means of bringing income into communities. **Eat Etc.**⁶³ is one such community focused initiative. It provides a deli counter specialising in locally sourced, fresh, organic produce. The East Belfast Mission provides a ‘meals on wheels’ service to the elderly to tackle issues of nutrition and isolation⁶⁴. Ardmonagh Family & Community Group ran Cook It! workshops, East Down RDC⁶⁵ has held talks on Nutrition/Healthy Eating for all age groups. Footprints⁶⁶ have developed award winning initiatives through Healthy Food for All.

Food and the Role of Local Councils

Less than half of the current 26 local councils provide allotments. The process of the Review of Public Administration (RPA) is intended to make councils more efficient and more accessible to the public. At present, councils are under no obligation to provide allotments. There may be hesitancy on the part of councils, in the wake of the RPA, to commit to using spare land for community food cultivation. Local councils should produce Allotment Strategies similar to that already in place for Carrickfergus Borough Council to ensure a rise in local food production.

SECTION 3: CONCLUSIONS

Why should we act?

The health benefits of allotments are well established; they provide a means of exercise, have a positive impact on physical and mental health and aid access to nutritious low carbon food. The beef and dairy industries have a strong hold on the Northern Ireland agricultural sector, meaning local fruit and vegetables are less accessible than they could be. Provision of allotment facilities allows people to overcome this barrier. As demonstrated by Eglantine Community Gardens and other similar projects, the social benefits of growing food together are huge. Eglantine has not only improved the appearance of the area surrounding the gardens, there is also a notable sense of community among the users.

The Transition Town Network has the potential to aid the move away from just-in-time food distribution systems. It can enhance modularity, creating distinct functional units within communities and increase resilience in the face of climate change, peak oil and economic instability. In the face of these challenges it is essential to build knowledge and social capital that will empower and sustain communities.

Our schools are the key to ensuring children are educated about nutrition and the environmental, ethical and health issues surrounding food. This is essential to allow future generations to overcome the challenges of climatic and environmental change. As well as providing healthy low carbon meals schools need to empower parents to do the same. The education system and schools can help people overcome the psychological barriers to ending food poverty. Support can be provided in the form of cookery lessons and education in food procurement.

We need to overcome the belief that healthy, sustainable food is beyond the reach of the socio-economically disadvantaged. Good food can become the basis of a preventative health care system. This has the potential to tackle sustainability issues relating to food, health and production. There is an urgent need to address food poverty and educational issues.

Regarding food production and sale, we need to challenge negative attitudes to food and the lack of a vibrant fresh, local, organic and sustainable food culture here. It is imperative that we learn to appreciate and celebrate the benefits of a sustainable healthy diet. The kinds of foods we produce need to change significantly. It is currently determined by EU subsidies, the focus of these subsidies needs to shift to healthier and less energy intensive foods. The food industry's labelling and advertising power must be acknowledged. The consumer must be protected by law from harmful, unhealthy food in the same way they are protected from the tobacco industry.

Over-production and waste of good food and the associated environmental impacts need to be addressed. Greenhouse gas emissions from production, packaging, transport and landfill are a huge contributor to the Northern Ireland total. Consumers are going to be faced with rising rates and biodiversity will be further threatened by landfill if these issues are not addressed.

Sustainable food procurement processes need to be in place as world populations rise in order to avoid environmental and humanitarian disasters. We need to start working on organic farming

practices now to develop them to their optimum capacity, utilise the potential for carbon sequestration, create better soil structure, ensure water security and eliminate reliance on fossil fuel-based food production.

There is an urgent need to reduce food miles and energy usage associated with preservation of seasonal foods consumed out of season. A more sustainable balance must be achieved between the element of food security provided by the international market, the support provided to the developing world through fair trade and the need to boost local markets.

GM crops may have the potential to help address future food crises; on the other hand, if used incorrectly it could seriously damage biodiversity and exacerbate the situation. Farmers and consumers need to be informed by sound and reliable research.

The issue of water security is central to food. Without reliable water sources the agricultural and food industry will not be able to survive. As the impacts of climate change increase throughout the world water supplies will become more limited.

The financial costs of supporting current agricultural systems, international competition, the amount of grain required, predicted water security issues and resulting greenhouse gas emissions mean that meat production is a major food sustainability issue, as well as a health one.

Biodiversity and food production are inextricably interlinked. Local ecosystems need to be protected from the damage inflicted upon them by intensive agriculture. Unless drastic mitigation is achieved over the next few years, the future of the Northern Ireland environment's capacity for sustainable agriculture will be bleak. Similarly, over-dependence on a few sources of food adds to a reduced level of resilience in the face of the challenges ahead.

Given the proven health benefits of having an allotment, joined up thinking dictates that these should be provided where possible to promote health and well being within council boroughs. Allotments can also help address social issues and financial aspects of food poverty.

What should we do?

The Northern Ireland Assembly needs to take more initiative in promoting allotments and community gardens. The seminar series for people wishing to develop allotments (joint Groundwork/DSD project) should be replicated. Local councils need to start meeting the demand for allotments and cut waiting lists. There is also a need for improved utilisation of social capital in communities affected by food poverty. This would promote innovation and encourage schemes like Incredible Edible, Todmorden. The Carrickfergus Allotments Strategy should be adopted by other councils. Promotion of aid and networking schemes (ARI/Landshare) could ensure greater access to land. Accreditation schemes moving to a focus on sustainable uses of green spaces would further encourage this.

In the face of the threats of climate change, peak oil and economic instability, the Transition Town Network provides a means to enhance sustainable food procurement systems. The creation of food-sheds would greatly reduce the carbon footprint of the Northern Ireland diet. Local production

targets need to be set for various foods, and a Food Plan should be devised for the province. For this to be effective there is a need for co-operation with government authorities at a local level. This interaction would reduce replication of work and allow statutory bodies and grassroots organisations to benefit from each others' strengths.

Schools can act by providing healthy meals that are produced and procured in a sustainable manner. They should also address the issue of lunch boxes lacking a balanced diet. Engaging with parents can provide advice and support to improve the standard of school meals and packed lunches. Schools also need to take a stronger role in educating children on the lifecycle of food and the sustainability issues surrounding it. This can be achieved through growing spaces in school ground, visits to sustainable farms and educational programmes in food procurement and nutrition.

Successful programmes such as community food initiatives should be replicated to empower people to cook well and eat a balanced, healthy diet. There is also a need to link the statutory and voluntary sectors. In the current economic climate, funding will become more difficult to attain in the coming years, so greater co-operation and increased levels of efficiency will be required in both sectors. The Assembly, local councils and communities will need to play a stronger, more proactive role in maintaining awareness and skills relating to healthy eating and cookery. With the co-operation of the Assembly, comprehensive schemes such as **Growing in Confidence** could help address health and food poverty issues in Northern Ireland.

To encourage consumers, Farmers Markets need to be co-ordinated in a fashion that will make them more competitive in a market that is dominated by big supermarkets. Food festivals should be encouraged to increase awareness and a sense of pride in local food. Labour requirements and pay in the food industry must be addressed to aid the sector while in transition and to make it more self-sustaining in future. Legislation is urgently needed to address labelling and advertising of unhealthy foods.

Councils are doing a good job providing food waste bins and adapting brown bin schemes to deal with food waste. The consumer will need to take ownership of their contribution to landfill by being more aware of what they buy and what happens when they throw it out. Work needs to be done on the infrastructure for anaerobic digestion technology in the North. Initiatives such as the Stem Project should be supported and promoted as they help businesses to become more sustainable and address waste streams. FareShare is an excellent means of addressing food and social causes. This not only takes large amounts of good food out of landfill, it tackles food poverty.

Organic buying groups are a good way to enable people to access organic foods. The potential of the Organic Farming Scheme needs to be harnessed; novel new systems require research and development. Silvopastoral agriculture is one emerging method that should be further developed in the North. Where fertilisers and pesticides continue to be used, quantities must be better managed.

Increased consumer awareness of the environmental implications of food miles and food storage out of season must be increased. This can be addressed through community initiatives, Transition Town Groups, community gardens and the education system.

Much work is required around the GM debate. The technology should be handled with extreme care but its potential should not be lost by irrational fears. Scientific research and development that is communicated in a coherent way to the food sector and the consumer is essential.

We need to eat less meat and dairy products to achieve sustainable food production and address health issues. However, red meat from grass-fed livestock has a critical role to play in minimising carbon emissions from farming. This is because grasslands for grazing represent vitally important carbon stores. Improved systems for dealing with the carbon footprint are required at all stages of meat production. A cradle to cradle⁶⁷ approach would alleviate environmental impacts from the point of grain harvesting to packaging. Alternative slaughter patterns should be adopted to minimise the environmental impacts. Current trends in meat consumption are not sustainable. Considering a predicted decrease in future world water supplies, a significant proportion of the meat we eat should be replaced with less energy and water intensive forms of protein.

The issue of water security should be addressed throughout the food system. Technology and techniques to properly address this should be researched and adopted to ensure water security for agriculture in a changing climate.

The Countryside Management Scheme has made a positive impact on levels of biodiversity and empowered farmers to improve the quality of their land. Better resources should be available to this scheme, so it can achieve its potential to increase biodiversity in Northern Ireland. Research and development is required for alternative forms of agriculture that promote biodiversity, so that they can be supported by necessary technology and infrastructure. New technologies can help make silvopastoral systems a viable option for increasing numbers of farmers.

Section 4: Table summarizing ongoing projects in Northern Ireland

	Access to Land	Reducing Food Waste	Reducing GHG	Boosting local economies	Networking / Communication	Social Issues	Health Promotion	Children and education	Training & Grow Your Own Advice	Training & Cookery Advice	Advice for Consumers	Promote biodiversity	Provide organic	Reduced food miles
Allotments Regeneration Programme														
Cook It!														
CO-OP Food														
Council Allotment Officers' Forum														
Eat Etc														
Eco-Schools														
FareShare														
Farmshop.uk.com														
FCFCG														
Field to Fork														
Focus Farms														
Landshare														
The Liberty Consortium														
The Food and Fisheries Programme														
Footprints Women's Centre														

	Access to Land	Reducing Food Waste	Reducing GHG	Boosting local economies	Networking / Communication	Social Issues	Health Promotion	Children and education	Training & Grow Your Own Advice	Training & Cookery Advice	Advice for Consumers	Promote biodiversity	Provides organic	Reduce Food miles
Glenhordial Permaculture Farm														
Groundwork NI														
The Health Action Zones														
Healthy Eating Education Community Food Initiative														
Healthy Food for All														
Helen's Bay Organic Farm														
Localfoodadvisor.com														
The National Trust														
NICMS														
The Organic Centre														
Organic Farming Scheme														
The Organic Supermarket														
Slow Food Ireland														
Stem Project														
WRAP NI														
Willowbank Organic Producers														

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Northern Ireland Environment Link (NIEL) is the networking and forum body for organisations interested in the environment of Northern Ireland. It represents 58 full members (voluntary organisations) and 51 associate members (statutory organisations, companies or individuals).

Full members collectively represent over 90,000 individuals, 262 subsidiary groups, have an annual turnover of nearly £70 million and manage over 314,000 acres of land. Members are involved in environmental issues of all types and at all levels from the local community to the global environment.



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