50 ways to fix the food system

Resource directory

Nourish conference 2013

Nourish Conference 2013

"Feeding the Five Million: what would it take

for everyone in Scotland to eat well and sustainably?"

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50 ways to fix the food system:

Innovative Diet Projects

Fife Diet, Scotland

The Fife Diet is a consumer network working on increasing access to local food. Among the Fife Diet's aims are 1) to advance community development and rural regeneration through the promotion of civic responsibility around food issues, be this food miles, organics, allotments, community gardens or suchlike and 2) to create a network that boosts the local food economy.

The Fife Diet started in 2007 when it asked people to sign-up to eating food from the region of Fife, for a year, monitor their progress and share their experience. The project has developed from a voluntary network into a funded body and in its development has changed from a small amount of people dedicated to eating 'from Fife' for a year, to a much larger network of people trying to re-localise more generally and to explore what sustainable food might be.

The Fife Diet holds regular public meetings and invites anyone committed to their ideals to take part and become a member. The membership is free. People who are interested but do not live in Fife can join as "Friends of the Fife Diet". The network organizes practical workshops such as gardening or wild food walks, does education work with schools, supports its members in setting up food projects, provides a platform for information exchange and discussion, and does research and policy work.

The Fife Diet has also set up an interactive food map on their website with categories including Shops, Growing spaces, Fruit and Veg (including pick your own fruit farms and veg box suppliers), plus Cafes and Hotels and B&Bs.

For more information see the Fife Diet's website http://www.fifediet.co.uk/

Food for Life, UK

The Soil Association's Food for Life Scotland programme aims to transform food culture across the country. A key element of the programme is to support caterers in schools, nurseries, hospitals, leisure and tourism outlets and workplaces to achieve the Food for Life Catering Mark developed by the Soil Association. The Catering Mark is the only UK-wide certification scheme that provides a guarantee that food is fresh, seasonal and better for animal welfare. Bronze, silver and gold tiers encourage caterers to make step-by-step progress towards using more local, free range, fair trade and organic ingredients to produce healthier menus and reaching the core targets of 75% fresh, 50% local and 30% organic.

BRONZE:

- No undesirable additives or hydrogenated fats
- 75% of dishes freshly prepared
- Meat is farm assured
- Eggs from cage free hens
- Menu is seasonal
- Training of catering staff
- No GM ingredients

SILVER – in addition to the Bronze criteria:

- Locally sourced items on the menu
- Certified organic OR Marine Stewardship Council (MSC) items on the menu
- Poultry, eggs and pork is Freedom Food assured OR 10% of ingredients certified organic or MSC
- No fish from Marine Conservation Society 'Fish to Avoid' list
- Information on display about provenance of foods
- At least one product is Fair Trade

GOLD – in addition to the Bronze and Silver criteria:

- 30% of ingredients certified organic OR MSC
- 50% of ingredients are locally sourced
- Meat, dairy products and eggs are certified organic
- Steps taken to increase up-take of non-meat dishes to promote a more sustainable diet

Currently, more than 25,000 Catering Mark meals are served across Scotland every day. Many schools, for example, are seeing increased meal take-up and improved attainment levels.

Besides working with caterers the Food for Life Scotland team is also working with 1) producers, suppliers and caterers to create new markets and shorter, sustainable supply chains; 2) consumers and communities to increase the awareness, understanding and promoting the benefits of fresh, healthy, local, seasonal and organic food; and 3) policy makers to encourage and enable change in policies and food culture at local and national level.

For more information see:
Food for Life Scotland http://www.soilassociation.org/foodforlifescotland
Case Study Highland Council
http://www.soilassociation.org/LinkClick.aspx?fileticket=IKBHyBEDCr4%3d&tabid=1774

Les Bons Repas: Sustainable catering in Normandy, France

In 2004, Les Défis Ruraux was asked to provide secondary schools in a department of Upper Normandy, with sustainable, locally sourced food. From 28,000 meals in the first year, the project has now grown to around one million meals annually, at 110 schools and colleges.

Products: fresh and local - Les Défis Ruraux works with the schools, helping them to offer at least one meal every two weeks using only sustainable ingredients – always with fresh, seasonal food from the Upper Normandy region that has not been processed prior to delivery. The organisation advises the kitchen managers on 'designing' the meals. Already, 46 producers are involved in the scheme, including butchers, cheese makers and bakers as well as farmers.

The organisers do not aim to provide 100% organic food. Instead, to encourage a gradual move towards greater sustainability they set minimum standards (e.g. local production, low inputs of nitrogen, no GMOs, hormones or preventive antibiotics in the food chain). For the farmers, the incentive is a guaranteed share in the supply chain. They must first undergo a sustainability assessment. Based on the results of this, the farm is accepted – or not – for a two-year contract, in which they also promise to make improvements in areas where the assessment revealed their weaknesses. The overall catchment area for suppliers is divided into 12 zones, which ensures the schools can use produce with a minimum of food miles. The schools are also encouraged to buy from the same provider if possible, as this allows that producer to deliver larger, more economically viable quantities.

Rethinking the future of catering - Reintroducing short supply chains to school canteens requires a lot of adjustments by all involved. Food purchasers must apply a different logic, kitchen staff must get used to preparing fresh vegetables. Even children and parents may need to be convinced about the importance of the new meals. To meet these challenges, les Défis Ruraux cooperates with an association for environmental education called Cardere. With their joint workshops for children they have encouraged healthy attitudes in schools and a positive dynamic for sustainable meals.

Les Défis Ruraux has now developed a set of training and consultancy services for company canteens that also want to introduce more sustainable and local products. Moreover, it has started to add value for the participating farmers by creating a local label: "Guaranteed by Les Défis Ruraux". This stands for quality of production and a commitment to progress and sustainability in Upper Normandy.

Source:
http://agro-ecoinnovation.eu/wp-content/uploads/2012/11/Eco_Innovation_broch_24pages_ENG_lr.pdf
Website of Les Défis Ruraux www.repas-durables.fr (in French)

Eating better, UK

Eating Better, a new alliance launched in July 2013, works to encourage dietary change, focusing mainly on the consumption of meat in the UK. The campaign is a collaboration between a number of UK based organizations representing various sectors, all addressing the issue of sustainable diets from different perspectives such as health, environment, social justice, animal welfare, development, faith and also from a consumer viewpoint.

Eating Better aims to encourage a culture where we place greater value on the food we eat, the animals that provide it and the people who produce it. Eating Better supports farmers who produce meat in a sustainable way. Moderating our meat consumption while also choosing 'better' meat that is naturally-fed, has a known provenance and is produced to high animal welfare, environmental and quality standards can help support farmers without being more expensive for consumers. A 'less but better' approach to meat with meals based around a greater variety of plant-based foods will ensure healthy, balanced diets that are better for the planet and for fairer food systems too.

With over 40% of the meat we consume imported to the UK, there is scope to reduce our consumption without reducing UK production. Choosing UK-produced meat with a known provenance – whether local, regional or national - could help reduce long and complex supply chains and support UK producers and provide consumer benefits. There are also benefits to UK horticulture industries of a shift to more plant-based diets.

The Eating Better campaigns mission is threefold:

- Demonstrate coherent cross-sectoral leadership on lower meat consumption as part of healthy, sustainable diets.
- Make change happen at the level of government policy, business practice and consumer behaviour, by developing 'asks' and catalysing lobbying muscle.
- Stimulating long-term cultural shifts by devising new ways of framing the 'eat less meat' message that are compelling and inclusive.

The alliance's website and social media platform aim to raise awareness, build support, encourage dialogue and catalyse action.

For more information see:
Eating Better website http://www.eating-better.org/
FCRN interview
http://www.fcrn.org.uk/interviews/advocating-sustainable-and-healthy-diets-eating-better-campaign

New Nordic Diet

The New Nordic Diet is about eating more vegetables and seasonal organic food from the region.

In 2003, two Danish chefs opened the restaurant noma, which has now been acclaimed as the world's best restaurant for the third year in a row. The year after noma opened, the partners organised the Nordic Cuisine Symposium, during which a number of leading chefs in Scandinavia signed a 'Manifesto for a New Nordic Diet'. This was the birth, in September 2004, of the Nordic Cuisine Movement.

In 2005, the Nordic Council of Ministers adopted the Manifesto as the ideology of the New Nordic Food Programme. Today, the manifesto is a guide not only for visionary chefs but also for an increasing number of small- and large-scale food companies – and for consumers who desire fresh, healthy, regional and seasonal food.

Guidelines for the New Nordic Diet:
1. More fruit and vegetables every day
2. More whole-grain produce
3. More food from the seas and lakes
4. Higher-quality meat, and less of it
5. More food from wild landscapes
6. Organic produce whenever possible
7. Avoid food additives
8. More meals based on seasonal produce
9. More home-cooked food
10. Less waste

Some of the principles of the Manifesto are that the New Nordic Diet should:

- Express the purity, freshness and simplicity that people associated with their region
- Reflect the changing of the seasons in the meals
- Be based on ingredients that are particularly excellent in the given climate, landscapes and waters
- Promote animal well-being and sustainable production in the seas and in cultivated and wild landscapes
- Combine local self-sufficiency with the regional exchange of high-quality produce

For more information see:
Website of Claus Meyer co-owner of noma restaurant
http://www.clausmeyer.dk/en/the_new_nordic_cuisine_.html
Source: http://fvm.dk/fileadmin/user_upload/FVM.dk/Dokumenter/Ministeriet/EU_og_Internationalt/EU-samarbejdet/Formandskab/1903_Faktaark_FVM_Formandssk_New_Nordic_Diet_v3_4korr.pdf

50 ways to fix the food system:

Innovative Growing Projects

Incredible Edible Todmorden, England

The Incredible Edible Todmorden (IET) movement began with some citizens starting to plant vegetables in public spaces, encouraging more and more people to do the same and inviting anybody to harvest the produce. Their motto is 'If you're eating, you're in'.

Step by step new initiatives came into being from 'Every Egg Matters' which encourages the production and consumption of local eggs (from 4 egg producers in 2009 to 60 in 2012), to working with small shops to promote local food, to looking for farmers to produce for the local market. The vegetable plots in public spaces became a big visitor attraction. This led to IET creating food trails throughout the town.

Currently IET is continuing planting and growing vegetables and trees around the town including several orchards. EIT is working with public bodies around the town to use their land – like the fire station and the railway station. Every school in the town is now involved in growing with IET and IET promotes food-based learning for the community as a whole.

IET recently got Lottery funding for a food hub at Todmorden High School including the position of a food-inspirer. IET has also branched out to greenfield sites and working on donated land to create a major resource for growing and learning, and developing ideas about hill-top farming.

For more information see:
IET website http://www.incredible-edible-todmorden.co.uk/home
Pam Warhurst's entertaining and inspiring TED talk on Incredible Edible Todmorden
http://www.ted.com/talks/pam_warhurst_how_we_can_eat_our_landscapes.html

Growing Communities, Hackney, London

Growing Communities (GC) is a community-led organisation based in Hackney, North London. Over the past 10 years GC have created two main community-led trading outlets - an organic fruit and vegetable box scheme and the weekly Stoke Newington Farmers' Market. These harness the collective buying power of the community and direct it towards those farmers who are producing food in a sustainable way.

The market - selling only organic, bio-dynamic or certified with the Wholesome Food Association produce - has enabled several farms to take on more land and convert it to organic production. Over 400 acres has been converted since May 2003 when the market started. Through the market a total of 23 small family-run farms and food businesses are supported.

For the box scheme Growing Communities runs organically certified urban market gardens specialising in salads and leafy greens. All other produce is sourced as locally as possible: the potatoes and apples come from small farms in Kent and Essex and oranges come from cooperatives in Italy and Spain. In 2012,

62% of the vegetables and 23% of the fruit came direct from local farms while overall 88% of the vegetables came from the UK.

On its growing sites GC also provides training for apprentice growers and volunteers. Furthermore they have a Patchwork Farm in Hackney which consists of back gardens, church land and land on estates. In 2012, they opened a 4-acre Starter Farm in Dagenham, to grow a wider variety of vegetables on a larger scale.

Growing Communities recently launched a Start-Up Programme to help other communities around the UK set up their own community-led box schemes. To contribute to the public debate on creating a sustainable food system GC hosts an informative website and a blog. Their vision is setout in a Manifesto.

Source: Growing Communities website http://www.growingcommunities.org/

Edible Estates, Edinburgh

Edible Estates is an initiative to promote the regeneration of greenspace around social housing estates, and set up community food growing projects. These greenspaces provide a huge opportunity to encourage and support local residents to become involved in their local community, learn new skills, and improve their health & well-being. The initiative is the result of a collaboration of third sector organisations and Re:Solution, an urban design practice.

In the current two project areas (Wester Hailes, South East Edinburgh) the City of Edinburgh Council, the owner of the land within the estates, has agreed to make land available for the development of community food growing hubs. For the city council the growing projects are a tool for community regeneration.

Community food growing hubs are central to the Edible Estates initiative. They provide a base of operations for the Edible Estates project in the neighbourhood. A hub provides a place where participants can manage a raised bed whilst they learn and practice the basics of growing their own, and a starting point for the planning of further projects. A typical community food growing hub, provides raised beds for thirty to fifty individuals. Each individual manages a raised bed for a year or more. The goal is for participants to move on to establish growing spaces in their own gardens, or other growing sites in the neighbourhood after a year or two, thereby making room for new participants. Tools and equipment are stored in a shared community shed, which as a covered meeting area for classes and other activities. Wherever possible the shed, raised bed and other features around the site are installed by project participants during weekly workshops.
Edible Estates is currently funded by the Climate Challenge Fund.

Edible Estates is also exploring opportunities for creating employment through horticulture enterprises within the community, and on nearby agricultural land. They hope that the peripheral location of some council estates on the city's fringes could be used to develop intensive horticultural operations providing local food to the city.

For more information see Edible Estates website http://www.edibleestates.co.uk/

'@the field' - Dunkeld and Birnam Community Growing, Scotland

In 2011, following a year of public meeting and planning, Dunkeld and Birnam Community Growing ('@the field') was established as a Scottish Charitable Incorporated Organisation (SCIO). '@the field' has developed a local organic food project that helps people to collectively grow their own food on a field within the local area that is leased from the Soil Association. '@the field' aims to involve and educate as many local people as possible in the sustainable production of local produce in a way that improves the environment with the aim of furthering a better understanding of the connections between what they eat and how it is produced.

Grants to cover capital costs of infrastructure, specifically fencing, tools, shed and a polytunnel came from Griffin Wind farm, the Postcode Lottery, the Co-operative bank and an anonymous local donor. Since the work has been carried out by local tradesmen the grant monies were ploughed back into the community.

'@the field' is a form of community supported agriculture where organic food is produced locally for local consumption at a reasonable price. It is a way for members to have a direct relationship with the growing project and receive a regular share of the produce.

Group membership presently stands at 60, of whom 20 have helped out on planting days and a dozen have provided over 2,000 hours of graft on a regular basis '@the field'. For example, in 2012 members planted out 5000 leeks, 4000 onions and 200 courgette plants that had been brought on in sheds, conservatories, greenhouses and windowsills. '@the field' also grows spinach, brassicas, potatoes, beans, chards, lettuce, salad leaves and various herbs and flowers.

Members are entitled to discounted vegetables and any fresh surplus is sold to the Birnam Institute, local hotels, the Corbenic cafe and Butterstone schools who feature it as organically grown local produce on their menus.

'@the field' facebood website
https://www.facebook.com/pages/-The-Field-Dunkeld-Birnam/357191637668930

50 ways to fix the food system:

Production Innovations

Agroecology

Agroecology is an innovative approach to the design and management of not only agricultural systems but the food system as a whole.

Originally, agroecology was defined as the application of ecological principles to agriculture. Natural, locally-available resources for soil fertility and biological control are privileged over costly and polluting chemical fertilizers and pesticides. Today, agroecology covers the whole food system where also the socio-economic and political dimensions of food systems are analysed and addressed. Research in agroecology is place and context specific. Farmers and local communities are seen as partners who contribute with their experience and traditional know-how to defining and carrying out the research.

Thus agroecology means either an agricultural practice, scientific discipline, or political or social movement.

As an agricultural practice, agroecology uses a range of principles for the design of biodiverse, energy efficient, resource-conserving and resilient farming systems, such as: the recycling of biomass, natural predation, crop rotation, mixed farming, poly-cultures, increasing biological and genetic diversity, etc.

Agroecological methods have the potential to significantly increase yields. A study of 286 agroecological projects in the Global South found that yields increased by 79% on average. Average food production per household rose by 1.7 tonnes per year (up by 73 per cent) for 4.42 million small farmers growing cereals and roots on 3.6 million hectares, and that increase in food production was 17 tonnes per year (up 150 per cent) for 146,000 farmers on 542,000 hectares cultivating roots (potato, sweet potato, cassava).

As a scientific discipline, agroecology questions the dominant agronomic model based on the intensive use of chemical fertilizers and pesticides. It proposes an additional new role for farmers as stewards of the landscape and biodiversity.

As a social movement, agroecology criticises the effects of the industrialization of the agricultures in the world, and the globalized market economy that is decoupled from productive and ecological constraints. As an alternative, this social movement explores other ways of agriculture, based on farmer's autonomy and the prudent use of resources.

For more information see:

- Report on agroecology and the right to food. http://www2.ohchr.org/english/issues/food/docs/A-HRC-16-49.pdf
- Report Nourishing the world sustainably: Scaling up agroecology. Ecumenical Advocacy Alliance 2012. http://tinyurl.com/EAAagroecology2012
- Stassart 2012 http://agro-ecoinnovation.eu/wp-content/uploads/2012/10/Agro_eco_inno_What_is_agro-ecology_BM_13Jul12.pdf

Intensive silvopastoral systems

Intensive silvopastoral systems (ISS) for livestock production combine fodder shrubs planted at high densities under trees and palms with improved pastures. Combined benefits of water regulation, favourable microclimate, biodiversity, and carbon stocks in these ISS not only provide environmental goods and services for livestock producers but also greater resilience to climate change. For example, at the El Hatico farm in the Valle del Cauca, Colombia, 2009 was the driest year in a 40-year record, with precipitation dropping by 44% compared to the historical average. Despite a reduction of 25% in pasture biomass, the fodder production of trees and shrubs remained constant throughout the year, neutralizing the negative effects of drought on the whole system. In response to the extreme weather, the farm had to adjust its stocking rates and increase energy supplementation. In spite of this, the farm's milk production for 2009 was the highest on record with a surprising 10% increase compared to the previous four years. Meanwhile, farmers in other parts of the country reported severe animal weight loss and high mortality rates due to starvation and thirst.

From the report Nourishing the world sustainably: Scaling up agroecology. Ecumenical Advocacy Alliance 2012. http://tinyurl.com/EAAagroecology2012

System of Rice Intensification

The System of Rice Intensification, known as SRI, is an agroecological method for increasing the productivity of irrigated rice by changing the management of plants, soil, water and nutrients. SRI originated in Madagascar in the 1980s and is based on the cropping principles of using fewer seedlings, younger seedlings, naturally fertilized soils and reducing water usage.

The benefits of SRI have been demonstrated in over 52 countries, with a strong footing in the four countries — China, India, Indonesia, and Vietnam — that grow more than two-thirds of the world's rice. The benefits include: 50%-100% or more increased yields, up to a 90% reduction in required seed, and up to 50% water savings. A rice farmer in the Bihar state of India attained the world-record harvest of 22.4 tons per hectare using SRI methods. The world's average is about 4.3 tons per hectare and India's average is a mere 2.3 tons.

Giving the plants space lets leaves catch sunlight, allows roots to blossom underground, and gives the plant a steady stream of fresh air. That means more sunlight, water, and CO2 — the three inputs a plant needs for photosynthesis. In other words, wide spacing leads to more food for the plant and thus a healthier plant and more nutritious rice. Healthier plants are also stronger plants and as such they can stand up to storms, drought, diseases, and pests better than rice plants grown the conventional way. The SRI method also shortens the crop cycle by 5 to 15 days. That may seem trivial, but it's important for farmers. For 5 to 15 days, rice plants are less exposed to disease and pests. For 5 to 15 days, they don't need water. And before the cold settles in, the farmer has a fresh space to plant a quick vegetable crop.

SRI principles and practices have been adapted for rain-fed rice as well as for other crops (such as wheat, sugarcane and teff, among others), with yield increases and associated economic benefits.

For more information see:

- Article: http://gaia-health.com/gaia-blog/2013-02-17/organic-rice-farmers-output-puts-conventional-ag-gm-to-shame/
- Article: http://modernfarmer.com/2013/08/feeding-the-world-a-simple-technique-to-quadruple-rice-harvests/
- Slide Show on SRI http://www.slideshare.net/SRI.CORNELL/the-system-of-rice-intensification-sri-an-agroecological-approach-toagricultural-development-and-environmental-conservation

The Power of Duck in rice paddies

In Japan and Vietnam, some organic farmers raise ducks, and sometimes fish, in their rice paddies to manage pests and weeds. Raising ducks with rice is not a new system, but the wisdom of this older practice is recognized by agroecologists for its symbiosis (mutually reinforcing relationship) between the ducks and the rice: the ducks eat snails that are a pest of young rice seedlings, and they eat and suppress the weeds that compete with the rice. The ducks' manure helps with soil fertility, and their constant movement and foraging helps reduce weed germination. Of course, the farmers get meat and eggs in the bargain. By-products of the rice crop (rice bran, broken rice) can be fed to the ducks. Farmers who practice this type of crop-livestock integration report higher yields and lower labor costs.

Push-Pull System of maize pest management in Africa

The push-pull system of ecological pest management in Africa illustrates the productive, economic, food and livelihood security, health and environmental benefits of an innovative agroecological approach.

Kenyan maize farmers have tripled their yields by intercropping maize with a repellent plant, such as desmodium (a nitrogen-fixing legume that also improves soil fertility), and planting an attractive trap plant, such as Napier grass, as a border crop around this intercrop. Gravid stemborer females are repelled or deterred away from the target crop (push) by stimuli that mask host apparency while they are simultaneously attracted (pull) to the trap crop, leaving the target crop protected.

The inclusion of these grasses in the farming system reduces synthetic pesticide use and can help augment livestock feed, providing families with additional milk and meat for consumption or sale. Additional benefits include reduced run-off and soil erosion, enhanced soil fertility, improved food security and family nutrition, and increased household income. More than 12,000 farmers across eastern Africa had adopted the technology by 2009 and another 100,000 are expected to do so over the coming years.

Source: http://www.slideshare.net/Z3P/g3k57

Bec Hellouin organic farm: high yields from small areas of land, France

In 2012, in cooperation with AgroParistech, the Bec Hellouin organic farm set out to demonstrate that growing vegetables according to their principles of permaculture could provide an adequate income for one person from only 1,000 square metres of land.

In permaculture, farming methods are used that respect and copy nature, using polyculture and small-scale solutions. At Bec Hellouin farm all work is done by hand, they thus avoid using any fossil fuels. This is not as difficult as it might sound because the permaculture principles also include leaving the soil untouched – which means there's no ploughing. And some of the crops they grow are perennials, so there is less sowing to do.

The first results of the experiment have matched all expectations. The Bec Hellouin farm adapts and improves ideas from a wide range of sources. For example, it is currently developing the use of biochar combined with effective microorganisms. Mixed in with the soil, charcoal is an effective carbon sink. Its porous structure also provides a habitat for microorganisms that encourage nutrient exchange. Effective microorganisms are cultivated at the farm in a "bokashi", a traditional composting method borrowed from Japan. The combination of biochar and bokashi has so far proved very successful, with seedlings growing up to three times as strongly as before.

For farming in limited space, the innovators of Bec Hellouin have developed concepts such as the potato tower and climbing squashes. By planting potatoes in layers in a meshed tower filled with compost and irrigated through a spiral in the centre, and by training squashes to grow vertically like climbing beans, a high yield can be achieved on just two square metres.

Website Ferme biologique du Bec Hellouin: www.fermedubec.com (in French)

No-till farming

In 2009 no-tillage farming, synonymous with zero tillage farming or conservation agriculture, was adopted on 111 million ha worldwide. Fastest adoption rates during the last 10 years have been experienced in South America where some countries are using no-tillage farming on about 70% of the total cultivated area.

No-tillage systems have been adapted to all kinds of climates, soils and cropping conditions. In the UK adoption is currently still low. Overall, the percentage of no-tillage in Europe is only 1.1% of the total area under no-tillage worldwide.

No-tillage is a system of planting (seeding) crops into untilled soil by opening a narrow slot, trench or band only of sufficient width and depth to obtain proper seed coverage. No other soil tillage is done. The soil should remain permanently covered with crop residues from previous crops or green manure cover crops, and most of these residues will remain undisturbed on the soil surface after seeding. Crop rotation and cover crops are essential elements that need to be applied in the no-till system.

No-till agriculture, if applied correctly, can reverse the loss of organic matter, improve and maintain soil porosity and thus prolong the availability of plant-available soil water in times of drought. It can also reduce weed, insect pest and disease incidence by biological means, raise agro-ecological diversity, favour biological nitrogen fixation, and result in both raised and better-stabilised yields accompanied by lowered costs of production.

Spain is the leading country in terms of no-till adoption (practiced on 650,000 ha) in Europe. In comparison to conventional techniques, no-tillage consumes less energy and retains soil moisture better. Main crops under no-tillage are wheat, barley and much less maize and sunflowers. Besides annual crops, many olive plantations and fruit orchards have turned to no-till systems.

Long term research in Germany concluded that no-tillage is a very profitable cultivation system because of the lower machinery costs and lower operating costs. No-tillage decreases the purchase costs, the tractor power requirement, the fuel consumption, the amount of required labour as well as the variable and fixed costs.

The widespread use of herbicides and other chemicals for disease and pest control in the no-till system is problematic in terms of sustainability. Therefore cover crops and crop rotations are an important management practice in no-till to make systems less vulnerable to pests and diseases. Crop rotations break pest build-ups and cover crops suppress weeds.

Source: FAO report, Current status of adoption of no-till farming in the world
http://www.fao.org/ag/ca/CA-Publications/China_IJABE.pdf

New wheat variety through synthetic wheat development, UK

The National Institute of Agricultural Botany (NIAB) in Cambridge has recreated the original rare cross between an ancient wheat and wild grass species that happened in the Middle East 10,000 years ago.

Over the years, domestication of the wheat plant has increased yields, but recently those increases have slowed. The national average UK wheat yield has stalled at around 8t/ha for the past 12 years. This slow-down is partly because domestication has eroded wheat diversity and the possibilities for improvement from within the current germplasm pool are reaching a limit.

NIAB's synthetic wheat programme involves crossing durum pasta wheat with wild goat-grass using traditional crossing techniques in the glasshouse combined with tissue culture in the research laboratory to guarantee seed germination. The resulting hybrid plants produce the 'synthetic' seed, which is then used in crossing programmes with current varieties.

Recreating that initial hybridisation from wild and cultivated relatives of wheat, including goat grass, emmer wheat and durum wheat, has enabled plant scientists to introduce novel sources of genetic diversity, capturing some of the variation from those ancient wild relatives lost during the domestication of wheat as agriculture evolved. When bred conventionally into modern wheat varieties these offer potential new sources of yield improvement, drought tolerance, disease resistance and input use efficiency.

NIAB is confident that the performance gains and level of potentially valuable variation observed so far, points to a major transformation in the wheat improvement process. Yield increases of up to 30% have been produced in early field trials, despite the past few years being cold, wet seasons where lack of sunlight depressed yield.

The original Synthetic Hexaploid Wheats (SHWs) were generated at CIMMYT, the international wheat and maize improvement centre based in Mexico, which ran an extensive programme of synthetic wheat development in the 1980s. NIAB's work is the first systematic exploration of these lines in temperate, high-input cropping systems like the UK.

Source: NIAB website http://www.niab.com/uploads/files/NIAB_Synthetic_Hexaploid_Wheat.pdf

FishFrom, Scotland

FishFrom is a commercial freshwater salmon farming business utilising the very latest in Recirculation Aquaculture System technology. FishFrom is a Scottish business. Its vision is to replicate the technical and operational FishFrom process internationally to aid the world's growing population to access a valuable source of affordable protein provided by land-based fish production.

The idea is to site plants close to major conurbations, close to market. The FishFrom concept has been developed in order to reduce the pressure on wild fish stocks, minimise the impact on the environment, reduce food miles and provide customers with a consistent supply.

The fish will be farmed in a controlled environment protected from harmful pathogens and parasites without the use of harsh chemicals. The system will recycle 99.8% of all the water and the fish food will come from sustainable sources.

The prototype FishFrom kit – a 3,000 tonne facility - is planned to be built on a 16-acre site at Tayinloan on the West coast of Scotland.

Source: FishFrom website http://www.fishfrom.com/

Green Plant Protection – Mobile learning with IC technology, Slovakia

Green Plant Protection is an educational project funded through the EU's Leonardo da Vinci programme and led by the Slovak University of Agriculture. Its objective is to use mobile communication technology to disseminate information to farmers about organic methods of plant protection.

The Green Plant Protection tool encourages informal learning and promotes cooperation between universities, farmers and companies. It was originally created for farmers and advisors, but it can equally be of interest to agricultural students and the broader public.

The tool accesses an online platform to furnish its users with all the important information they need for plant protection in organic agriculture. It includes a wealth of information about the pests, diseases and weeds that affect arable farming, vegetable growing and orchards and vineyards. It provides illustrated descriptions of symptoms and morphology, and it proposes appropriate control strategies. The online materials are available in Slovak, Hungarian, Italian and English, although they mainly focus on Slovakian conditions.

Source: Agroecology – 10 examples of successful innovation in agriculture.
http://agro-ecoinnovation.eu/wp-content/uploads/2012/11/Eco_Innovation_broch_24pages_ENG_lr.pdf

50 ways to fix the food system:

Distribution Innovations: Farmer – Citizen Links

KBHFF – Food Co-op, Copenhagen, Denmark

Københavns Fødevarefællesskab (KBHFF) is a member-based and member-driven food co-operative in Copenhagen, Denmark. It focuses on offering locally produced, organic and biodynamic products in season at affordable prices.
In KBHFF, the customers are members, owners and co-workers.

Anyone can become a member of KBHFF. Membership costs 10 pounds (100 kr).

Members can buy a bag of organic fruit and vegetables in KBHFF shops every week. The price of one bag is 100 kr. The weekly bag typically contains 6-8 kg of locally produced and seasonally based organic fruit and vegetables.

Vegetable bags need to be pre-ordered and pre-paid in one of the shops. KBHFF buys from the local farmers based on the number of pre-orders they get each week, and they pay with the money they received the week before. Pre-orders can be made for several weeks at once, or just for the following week.

Members commit to working 3 hours each month in the Co-Op. This can either be in 3-hour shifts in one of the shops, or one can join one of the working groups to work on the development of KBHFF, or one can start some brand new initiative that will help develop KBHFF in new ways.

As co-owners of KBHFF, all members have a say in the operation and development of the Co-Op. All decisions regarding the products and economy are taken by the members of KBHFF, and every member has the opportunity to influence these decisions. Any profit is used to reduce the price of the vegetables, develop the Co-Op or socially responsible projects in the city.

Source: Københavns Fødevarefællesskab website http://kbhff.dk/english/

Whitmuir The Organic Place, Scottish Borders

Whitmuir The Organic Place is an organic farm, with an organic farm shop and restaurant in the Scottish Borders. The farm also hosts the Breadshare Bakery and a gallery and is home to the Black and Green Project (biochar trials combined with grow your own by members of the community).

The farm is a mixed operation and sells directly to the consumer through a box scheme, the farm shop and restaurant, and a "local supporters" scheme. Supporters pay a monthly subscription for which they can receive a weekly delivery of a food box or can buy at the shop and eat at the restaurant.

After just ten years in operation Whitmuir is a limited company employing over 20 staff and hosting over 70,000 visitors a year. Whitmuir also organises some 50 tours and talks each year for schools, universities, community groups and farmers.

To engage the local community with the farm has been important to the owners from the start and besides selling their produce locally they also provide free land and advice to around 30 people to grow their own food on mini allotments in a polytunnel.

In order to be able to further develop the farm into a national resource on sustainable food and farming Whitmuir is pioneering a new model of land ownership and land use. Whitmuir Community Benefit Society (WCBS) has been established to purchase the organic farmland and thus Whitmuir will become Scotland's first community owned farm. The minimum investment is one £50 share and the maximum is £20,000. Each shareholder has one vote. Donations and loans are also welcome. WCBS will oversee the farming and develop the land as a living learning space on sustainable food and farming with discovery trails, exhibits, educational opportunities and citizen science projects.

Transferring the land from private ownership to community ownership not only protects the long term future of the farm, but also allows greater collaboration with the educational and science sectors than is currently possible. This is because there are restrictions for funds towards private businesses.
WCBS has secured funds for a part time Education Officer and a part time Volunteer Development Manager to start to create a real living learning space on a real working farm.

For more information see Whitmuir's website http://www.whitmuirtheorganicplace.co.uk/

Community Supported Agriculture, Chagfood, Devon

Community Supported Agriculture (CSA) is a partnership between farmers and consumers where the responsibilities and rewards of farming are shared. The concept originated in Japan in the 1960s, where it was known as 'Teikei', and has since grown considerably worldwide. CSA is a relatively new approach to farming in the UK. Consumers become members of the farm and commit to buy a share of the farm's harvest for 12-months at a time. In this way the farm has a secure market and is able to tailor production to meet local demand. The running costs of the business are met through the membership subscription. There are now more than 65 schemes operating successfully throughout the UK and Chagfood in Devon is one of them.

The main Chagfood season runs for 28 weeks from the beginning of July to the end of January. The full share of the harvest is divided up in individual boxes delivered once a week. In February, March and April the share of the crops available is distributed. In a good year, like 2011 this could mean a continual supply of weekly salad along side other winter crops. May and June are very much the hungry gap.

Chagfood does not buy in any produce. This means that if there is a shortage, or crop failure the members carry the risk in order to support the farm through lean times. Likewise in a good season the members will enjoy large shares of the harvest.

The model of Community Supported Agriculture works best when members pay up-front at the beginning of the season. Currently, at Chagfood a small share costs £440 (£13.50 per box) and a large £600 (£17.80 per box) for a years membership. A box can have up to 20 different items. The share prices have remained the same since 2011 despite UK food prices increasing by 18% over the same period. This reflects the economic resilience of community supported farming. Chagfood also offers subsidised shares to help people on a low income.

Chagfood farms entirely on rented land, and as a result does not receive a single farm payment. Thanks to successful grant applications to Making Local Food Work and Dartmoor National Park's Sustainable Development Fund they managed to start the project. After two years, members' subscriptions fully covered the running costs and the wages of two part-time growers.
As of April 2013 Chagfood supplies 70 households in Chagford and neighbouring parishes. Chagfood farms using entirely organic methods, inputs and management, however they are not certified as "Organic" as the CSA model encourages members to trust them to farm with integrity.

For more information see Chagfood website http://www.chagfood.org.uk/

True Food Cooperative – Community cooperative, Reading

The True Food Cooperative (TFC) started as a buying group where local people decided to collectively buy organic wholefoods. Within a couple of years, this increasingly popular club was meeting fortnightly instead of just once a month, and stocking a wide selection of organic wholefoods instead of just buying what club members would jointly order and take home.

Step-by-step the initiative grew and evolved. With help from various organisations and a grant to run a pilot project TFC developed to operate today a hybrid system of a large shop and multiple mobile markets held in community centres. The shop is the hub that provides the infrastructure for bulk purchasing and retailing of large quantities of foods. The mobile markets help spread accessibility and convenience of TFC across a greater area than could be achieved with the shop alone.

At its most basic level True Food Co-op is a large-scale buying group. The combined result of pooling the community's grocery budget and regular volunteering of members is good access to good food (where practicable fresh, local, seasonal, organic) at an affordable price.

There are two levels of membership – Basic and Active. A Basic Member, pays £10 annual subscription and benefits from: 1) being a co-owner of True Food Co-op (TFC), 2) £20 of discount vouchers, each worth £1.25 toward £10 of shopping and 3) subsidised social events, courses and outings.
An Active Member commits to spending at least three hours per four-week period helping with some of the many tasks that need completing to keep TFC running smoothly. This could be anything from cleaning the shop, filling shelves, selling at the market or assisting with the accounts.

In addition to the Basic Member benefits Active Members receive an additional £30 of discount vouchers and have access to exclusive special offers available only to Active Members. TFC also employs 5 full time staff.

For more information see True Food Cooperative website http://www.truefood.coop/index.cfm

The ethical supermarket – hiSbe, Brighton

hiSbe (how it Should be), an ethical supermarket in the heart of Brighton was set up by two sisters. It is a community interest company (CIC) that uses profits for community benefit. hiSbe's social purpose is to give people access to food that's more affordable, fairly sourced and more sustainable.

To fund the supermarket hiSbe raised £30,820 from the online crowd-funding platform Buzzbnk. In return for donating money, supporters received the equivalent amount plus 20% in vouchers that they will be able to redeem in store once it opens in September. A further £60,000 has been raised in equity loans and a £15,000 social enterprise assist award. The target is £170,000 – hiSbe is trying to raise the rest from private investors and lenders and by selling store discount vouchers.

The store's offer is based on eight principles: go local, choose seasonal, protect nature, support ethical, think welfare, save fish, end waste and avoid processed. Brands will be stocked as long as they are highly rated by the Ethical Consumer Index, which provides rankings of more than 40,000 companies, brands and products. If produce can be local, it will be sourced locally. If it's not local, it should be British. Produce coming from abroad will be fairly traded. hiSbe will pay staff above the living wage and suppliers a fair price.

One of the criticisms of ethical stores is that they are expensive compared to regular supermarkets and that only the middle class can afford to pay for their principles.
hiSbe is aimed at everyday people with average incomes and everyday diets. hiSbe wants to break with the perception that you have to have money to be able to afford good food. hiSbe thinks it will be able to offer affordable products because the CIC structure means dividends are low and other income streams – such as in-store food concession "pods" for hire – will be used to keep prices down.

See article form the Guardian
http://www.theguardian.com/sustainable-business/ethical-sustainable-supermarkets-compete-sainsburys

SpeiseLokal – Eat local – think global, Austria

SpeiseLokal is a consumer-driven initiative, which was started by three friends that were exploring ways to get better access to local, organic produce.
They started by visiting about 40 farmers, within an 80 km radius from Maria Anzbach, and asked them whether they would be prepared to deliver pre-ordered products once a week.
SpeiseLokal is now working with 35 farmers that together offer a wide range of produce which can satisfy all needs for the weekly food shopping: bread, dairy products, vegetables, cereals, honey, preserves, meat and products, eggs, herbal teas, etc. The product range also includes cosmetics, cleaning products, crafts etc. made on local farms. Customers order online between Friday and Tuesday. The farmers receive these orders by Tuesday afternoon and deliver on Friday morning. On Fridays consumers pick up their orders at one of the two hubs which have been set up at two farms. About 70 households out of 300 who are in contact with SpeiseLokal order weekly.

Rather than creating a niche market SpeiseLokal's aim is to provide local organic food accessible to everyone. Those consumers who mainly shop for food at SpeiseLokal and other local food suppliers have found that they spend roughly the same amount of money on food as they did before, and in some cases less. This is because of changes in what people buy, how they plan meals and avoiding food waste.

For some farmers the additional income generated through SpeiseLokal is important. For others, those who predominantly sell raw products to wholesale traders, delivering to SpeiseLokal does not increase their income because of the higher workload involved in processing and packaging small amounts of food. These farmers deliver to SpeiseLokal for ideological reasons rather than for economic benefits.

SpeiseLokal continues to grow in terms of product range and they are planning to open a third hub. The farmer who delivered the bulk of the vegetables made the conversion towards community supported agriculture with the help of Speise Lokal. SpeiseLokal fosters close relationships between farmers, consumers and retailers by serving as a platform for connecting people and initiatives. It arranges excursions to the farmers who deliver to it. It organises, coordinates and promotes cookery workshops, lectures, seminars, dinners and other events related to food. It provides information on food production, distribution and consumption and helps people share their ideas, recipes and initiatives.

Currently, Speise Lokal is organised by 6 women (working 5 – 15 hours per week) with a regular pay for their retailing work and for organising events and excursions.

For more details on Speise Lokal see http://www.speiselokal.org/index.html (German)

Fair Food Carlisle, England

Fair Food Carlisle is a partnership between Sustainable Carlisle and Brampton Food Network and works to link local food producers with local people.
The aim is to support local communities and the local economy through increasing the use of sustainable local produce from within a 30 mile radius of Carlisle.

The scheme works by linking producers to buying groups in workplaces, community centres or neighbourhoods. The members of these buying groups place an order for any of the products available on the website. The system is designed to allow a high level of flexibility in the quantity and frequency of the orders so that it can match member's needs.

Members are encouraged to place recurring orders – because this allows the producers to plan ahead, but this is not obligatory. The food is delivered weekly to the workplace or an agreed address at a specific time. The scheme offers vegetables, eggs, meat and salad, plus special items such as strawberries in season, beer, preserves and cakes. Fair Food Carlisle is committed to increasing the range of produce all the time, as they make contact with producers in and around Carlisle.

Fair Food Carlisle is keen to work with any workplace or group that can gather a few people together. They offer training, support and discounts to "buying advocates", who gather and co-ordinate a group. They also offer members 20% off if they introduce a friend, or if they order more than £10 of produce every week for 4 weeks or more.

For more information see http://fairfoodcarlisle.org/

Community Alliance with Family Farmers (CAFF), California, USA

The Californian CAFF is the result of efforts by both farmers and urban activists working together since 1978 to build a movement of rural and urban people to foster family-scale agriculture that cares for the land, sustains local economies and promotes social justice.

CAFF's Local Food Systems Programme reconnects communities with the farmers who grow their food. The programme reaches hundreds of thousands of Californian eaters each year through its Buy Fresh Buy Local educational and marketing materials, including the regional editions of Eater's Guide to Local Food.

Santa Clara Valley, which is one of the 6 CAFF Regions, employs one full-time coordinator for the Buy Fresh Buy Local campaign. The coordinator concentrates on securing new members, developing and maintaining relationships with growers, spearheading networking events and creating the Buy Fresh Buy Local Guide, both in print and online that lists regional food producers and purveyors. Ten thousand copies are distributed annually. Farmers who want to sell someplace new, restaurateurs who want to procure from local growers, and consumers who seek assurance that they're supporting regional businesses and producers all stand to benefit from the Guide's comprehensive listings.

To promote their aim CAFF provides labels to businesses that procure food from member farmers. Businesses can then display these labels in cafeterias so diners will know that they're eating, and supporting, food grown locally. CAFF is also working with wholesalers and distributors to "source-identify" and to verify that business members meet minimum procurement standards before being authorized to use the CAFF label.

CAFF also helps member farmers with their marketing. One example is through social media. A very practical way in which the CAFF coordinator helps is to go to farmers, taking photographs and uploading them to the CAFF Facebook page. This is a real help for farmers who are busy running their farms and might themselves not explore the possibilities of social media.

In 2009, CAFF's started to set up community aggregation hubs where established distributors can purchase value-added, locally branded produce from family farmers.

For more information see the CAFF website http://caff.org/

The Farmery, USA

The Farmery, is an urban market and farm design in development. It is an integrated retailing and growing system for locally grown food, where a portion of the produce sold is grown on-site.

At the Farmery, the consumer can witness and participate in the growth and harvest of crops and fish. The Farmery is able to offer an entire diet of mushrooms, fish, greens and herbs for prices that meet or beat organic supermarket prices. The Farmery lowers costs on the crops grown at the Farmery by eliminating middlemen, transportation, packing, storage costs but most importantly, inventory loss. According to a 2011 report, inventory loss for produce is estimated to be at 30% over the entire journey from the farm to the retailer. By better controlling inventory and allowing customers to harvest food themselves, the decaying process doesn't begin until it's in the customer's hands. By growing a portion of its food onsite, the Farmery is able to accommodate for the high variability of supply from small local growers. This gives the Farmery the flexibility to source food from small interesting farms that experiment with new crops.

The Farmery is constructed of stacked shipping containers and greenhouses that form a vertical farm and u-pick market in an urban neighborhood. The Farmery uses a proprietary growing system to grow edible plants vertically on the sides of the shipping containers. The interior space of the shipping container is used to cultivate gourmet mushrooms.

The initial target market for the Farmery will be food hobbyists, otherwise known as "foodies". A recent research estimates that 14% of the American population now fits into this growing category of "foodie". Because the majority of foodies live in metropolitan areas, each Farmery location will only need a small percentage of the local foodie population to thrive. The overall objective of the Farmery's marketing strategy will be to reestablish relationships between urban consumers and their food by enabling the consumers to understand the story of how their food was produced.

The Farmery currently has 2 production prototypes in Clayton, NC, where it has developed its unique growing systems. The Farmery also runs a retail prototype which is a 20 ft shipping container covered in living walls. Inside the container it grows watercress, lettuce and herbs, which can be harvested by customers.

For more information see:
Farmery's website http://thefarmery.com/
Article from The Modern Farmer http://modernfarmer.com/2013/07/the-supermarket-where-you-pick-your-own-produce/

50 ways to fix the food system:

Waste Reduction / Recycling Innovations

Rubies in the Rubble, London

In 2010, Jenny Dawson started the social enterprise Rubies in the Rubble that makes first class chutney using fruits and vegetables that would have otherwise gone to landfill or compost because no buyers could be found.

Dawson came up with the idea after seeing boxes of unsold fruit and vegetables discarded at New Spitalfields market in east London. That is also where she set up the purpose-built kitchen. The enterprise is ideally situated at New Spitalfields market to intercept any unsold surplus directly, transforming it into chutney as soon as it becomes available at the end of the day. And there's plenty of it: 700,000 tons of fresh produce passes through this market every year, producing over 200 tons of general waste per week. While she could take the produce for free, Dawson feels it is important to pay a small price in order to build loyal relationships with the traders.

Rubies in the Rubble also works directly with UK growers, making use of unwanted produce at various points in the supply chain. The production team consists of three women, working part-time in the kitchen.

Dawson's ambition is to open similar kitchens at the two other wholesale fruit and vegetable markets in London as well as in cities such as Manchester, Bristol and Glasgow. She also hopes to diversify into soups and believes the model she is creating could be replicated in other countries.

By setting up Rubies in the Rubble Dawson found an innovative solution to her twin concerns of food waste and finding employment opportunities for women who needed a helping hand to rebuild their lives.

In 2013 Rubies in the Rubble has won a contract to supply 9 Waitrose stores with a chance to supply the entire chain in the future. This means that now the production team consisting of three women, working part-time can be scaled up.

Apart from Waitrose Rubies in the Rubble chutneys can be bought at 21 stockists, as well as on the Saturday Borough Market and online.

Rubies in the Rubble website http://www.rubiesintherubble.com/

French National Pact against Food Waste

The French National Pact against Food Waste was adopted in June 2013. It commits to a wide range of measures, including training programmes on food waste in agricultural and hospitality colleges, food waste criteria in public purchasing programmes, a clarification of the legal framework and liabilities for food donation, the full integration of food waste in public waste prevention plans, the evaluation of food waste in corporate social responsibility performance, a clarification of best before date terminology, a public communication campaign on food waste and the testing of a pilot programme allowing individuals to donate excess food using an online tool.

The pact was signed by the directors of 25 leading French food manufacturers, retailers, food service providers and NGOs and is growing rapidly. Each sector of the supply chain made specific commitments, with highlights including:

- The farming sector developing training programmes to improve fruit and vegetable conservation across the supply chain and to support gleaning operations in the field
- The manufacturing sector to adapt portion sizes to better meet the needs of smaller households and to put in place educational tools to help consumers reduce their wastage
- The retail sector committing to improve processes, nominate ambassadors to lead prevention activities and deliver a wide range of good practices, from encouraging consumers to eat wonky produce to offering bulk sales
- the food service sector commiting to provide doggy bags – and guidance to help businesses implement this change – a practice that has been widely frowned upon in France, unlike neighbouring countries, up until now

One of the eleven measures of the pact is to hold a French National Day against Food Waste which will take place for the first time in October this year.

Source: Website Think.Eat.Save http://www.thinkeatsave.org/index.php/multimedia/blogs/78-blogs/223-a-nation-of-gastronomes-declares-war-on-food-waste

Foodsharing, Germany

Foodsharing is a platform which allows households, traders and producers to offer, receive and share surplus food free of charge. Surplus food can be offered via the homepage www.foodsharing.de or per app via a smart phone. People who are registered and live close to the area where the food is offered are automatically informed. If they are interested they then need to get an electronic ticket and arrange for a collection time with the donor. The application produces a map with the route between the donor and the receiver.

The funds to program the app have been raised through crowd-funding where people could donate between 5 and 600 EUR. Each supporter got something in return for their donation, like e.g. a "Taste the waste" DVD or an e-book.

Foodsharing also aims to be a platform that fosters a sense of community around food where people arrange to meet to eat and cook together, share recipes etc. To build communities that value food is the overall aim of the platform and their motto is "sharing is caring"!

Source: foodsharing http://www.startnext.de/en/foodsharing (German)

Supermarkets to sell wonky carrots as a new brand, Switzerland & Austria

Following the example of Coop Switzerland three main retailers in Austria start, in September 2013, selling fruits and vegetables that, for cosmetic reasons, were not sold previously. Fruits and vegetables not meeting the standard size and look will from now on be sold as a store brand at a cheaper price. This will be accompanied by a campaign called "use not waste" which should raise awareness for the quality of Austrian food and foster a counter model to the throw away culture. The initiators aim to use a higher share of the harvests, and claim that this will also benefit the farmers.

Source: press article http://diepresse.com/home/wirtschaft/economist/1442066/Rewe-verkauft-Obst-und-Gemuese-mit-Schoenheitsfehlern (German)

50 ways to fix the food system:

Access Innovations

Farm to Fork food bank, Sacramento, California

Food banks in general give out the worst kind of food - highly processed food-like substances that contribute to obesity and chronic disease. 'Better than nothing,' is the best one can say about it. But in recent years, there has been an encouraging effort in the US to improve the food in food banks.

Five years ago the Sacramento Food Bank started forging partnerships with local farmers, most of them organic, and increased the amount of fresh produce to more than half of clients' food allotment. Then knowing that most of them live in food deserts without transportation to grocery stores and the region's many farmers' markets, they moved distribution sites to about two dozen neighborhood schools and churches they visit once a month.

Just like at farmers' markets, the produce is laid out on tables, and clients can "shop" for fresh seasonal vegetables. Background music lends a festive air, and informational booths offer recipe cards for preparing food, clinics on smoking cessation and health screening.

The number of families served has grown from 8,000 to 20,000 over the two years since it has taken off. Clients say their health has improved, they lose weight (one client lost 100 pounds), they get more active (from being homebound to start riding their bike to the market), they started cooking, and got confident in using all sorts of vegetables, and some quit smoking.

Now the Sacramento Food Bank is about to create one of the nation's first farm-to-fork food banks by using 100 percent local growers. One of the biggest farm partners, who also supplies some of the region's best restaurants, donated 142,732 pounds of local produce to the food bank last year and sold it another 51,858 pounds. When they have excess produce they give it to the food bank for free. The food bank contributes to year-round work for the farm's workers.

The food bank hopes to open new markets for local farmers as clients buy more healthy food, and believes a true farm-to-fork movement must include socioeconomics groups not inclined to shop at farmers markets or Whole Foods.

The food bank also runs twice weekly home gardening seminars, which educate about 30 clients a week. The food bank provides the soil, plants and tools for growing organically at home.

Source: Article from Huffington Post
http://www.huffingtonpost.com/2013/07/07/sacramento-food-bank_n_3557868.html?ncid=edlinkusaolp00000003&ir=Food

Wholesome Wave – Double Value Coupon Programme, USA

Wholesome Wave was founded on the principle that improving the accessibility and affordability of fresh, healthy, locally-grown food for underserved communities can create a more vibrant and equitable food system for everyone. Programmes such as the Double Value Coupon Programme (DVCP) expand the customer base for small and midsize farms by incentivizing vulnerable families living in urban and rural communities to use federal nutrition benefits to buy healthy, fresh, locally-grown food at nearby farmers markets and other farm-to-retail businesses. This incentive programme proves to be an extremely effective way to increase healthy food purchases and consumption among limited-income consumers.

Wholesome Wave operates in over 28 states in the USA, working with more than 60 community-based organizations who manage nearly 400 farm-to-retail venues, and impact more than 3,200 farmers. Between 2009 and 2011 the number of participating farmers grew by almost 1,000, and the number of participating markets increased by roughly 100. In 2012, 40,000 DVCP consumers purchased fresh, healthy produce from local farmers at partnering farm-to-retail venues, an increase from 20,000 participants in 2010.
Further data from 2012 shows that:

- 90% of DVCP customers increased or greatly increased their consumption of fruits and vegetables
- 66% of farmers increased sales due to DVCP
- Farmers reported expanding their operations and increasing staff
- Market managers reported that on average, 27% of market sales came from federal nutrition benefits and DVCP incentives

Wholesome Waves is funded by private foundations, corporations and individual donors.

Wholesome Wave website http://wholesomewave.org/

Just Food, New York, USA

Just Food is a non-profit organization that connects communities and local farms with the resources and support they need to make fresh, locally grown food accessible to all New Yorkers. Since 1995, Just Food has pioneered sustainable food models, including CSAs, community-run farmers' markets, and farm-to-food pantry programs. Just Food runs the following programmes:

Community Supported Agriculture (CSA) - As a member of a CSA, individuals purchase a "share" of vegetables from a regional farmer. Weekly or bi-weekly, from June until November, the farmer delivers that share of produce to a convenient drop-off location. CSA members pay for an entire season of produce upfront (typically $400-$600). This early bulk payment enables the farmer to plan for the season, purchase new seed, make equipment repairs, and more. Just

Food trains groups to start and run CSA projects. Since 1996, Just Food helped to start over 100 CSA sites in NYC.

Fresh Food for All - Just Food helps food pantries make fresh, nutritious, locally-grown food available to families and individuals in need. This programme also provides additional markets for farmers and teaches cooking skills and nutrition information to food pantry staff and clients. This vital programming is made possible in part through a grant from the NYS Department of Health's Hunger Prevention and Nutrition Assistance Programme and a partnership with the United Way of NYC.

City Farms - The City Farms programme provides services and support to community garden groups to start and run successful farmers' markets, trains skilled gardeners to teach their communities to grow food, and coordinates free urban agriculture workshops in low-income communities.

Community Food Education - The Community Food Education programme inspires and empowers New Yorkers to create simple and healthy meals for their families. Just Food trains community members from diverse backgrounds to become "Community Chefs." Once trained, the Community Chefs present cooking demonstrations at farmers' markets, community gardens, food pantries, and community events.

Food Justice - Just Food increases awareness and action around food and farm issues (trough newsletters, workshops, conferences, and trainings) and advances policies for a thriving local food system. This resulted in NYC residents having become more informed advocates for local, regional, and national farm issues.

Farm School - Farm School NYC is a two-year educational programme for adults that is dedicated to training new experts in the field of urban agriculture. As the school continues to grow, it will serve as a resource and support for NYC food growers, increasing urban food production and access, and encouraging cities to recognize and support urban agriculture.

Just Food website http://www.justfood.org/

50 ways to fix the food system:

City and State Initiatives

Brighton & Hove Food Partnership

The Food Partnership started life in 2003, born out of an idea to create a strategic approach to food work in the city, bringing together community organisations, statutory agencies, local businesses and individual residents.

Brighton & Hove was the first city in the UK to write a food strategy back in 2006. The initial strategy was developed in partnership with experienced food consultancy organisation Food Matters.

The work on the food strategy is coordinated by the Food Partnership. Its role is to drive delivery of the strategy, to support innovation, encourage partnerships, report annual progress and deliver some of the actions. The Food Partnership also holds a seat on a number of strategic boards in the city to help influence other local policies and strategies, which have an impact on the food system.

The influence of the work of the Food Partnership is for example reflected in policies such as the Brighton & Hove Planning Advisory Note. Brighton & Hove has been recognised for drafting the country's first Planning Advisory Note, which encourages food growing in new developments.

The specificity of the Food Partnership is that it subsumes work on a wide range of aspects of food in Brighton & Hove in one organisation. It delivers a range of community-based projects that cover cooking, healthy eating, weight management, food growing and reducing food waste. The Food Partnership also runs a project on Brighton & Hove to become a 'Sustainable Fish City', and another project that encourages caterers to offer healthier food options in restaurants, cafes, breakfast clubs, nurseries and care homes.

For more information see the Food Partnership's website http://www.bhfood.org.uk/index.php

Bristol Good Food – Bristol Food Strategy

The urban food strategy (UFS) for Bristol has been designed by the city's Food Policy Council, a multi-stakeholder body that was formally created in 2011. The Food Policy Council is designed to be an important part of the UFS in Bristol because it is the main institutional mechanism for the design and delivery of the food strategy. The UFS is based on the principles set out in the Bristol Good Food Charter:

- Good for people (everyone should have access to information, training and resources that enable them to grow, buy, cook and enjoy good food)
- Good for places (the public and policy-makers should support and value food enterprises that promote local jobs, prosperity and diversity and treat workers well)
- Good for the planet (food should be produced, processed and distributed in ways that benefit nature)

The main activities in the urban food strategy (UFS) are based on the principles of the Good Food Charter, and three activities have been adopted for the first two years of the UFS: (i) to use public procurement policy in schools and hospitals to support good food, (ii) to promote community growing schemes to help people to re-connect to nature, and (iii) to foster retail diversity in the city by defending independent traders. In addition to these activities, the UFS also organises a number of other community-based events, ranging from tours and visits to community growing sites to an annual food policy conference which invites overseas guest speakers to help local activists to learn from good practice in other countries.

The key actors in the urban food strategy are:

- the city council,
- Civil society groups, mostly coordinated under the Bristol Food Network , which is an umbrella group, made up of individuals, community projects, organisations and businesses who share a vision to transform Bristol into a sustainable food city
- the National Health Service team,
- ethical food businesses
- ecological bodies like the Soil Association,
- and researchers, mainly Prof. Kevin Morgan as a Chair of the Food Policy Council

For more information see:
Bristol Food Policy Council website http://bristolfoodpolicycouncil.org/
Article Urban and Community Food Strategies. The Case of Bristol
http://bristolfoodpolicycouncil.org/wp-content/uploads/2013/03/Urban-and-Community-Food-Strategies_The-Case-of-Bristol.pdf

Malmö's policy for sustainable development and food, Sweden

That food is an intrinsic part of sustainable development finds recognition in Malmö's policy for sustainable development and food, which was approved by the city council in 2010. The goal of the policy is that all food purchased should be organic by 2020 and greenhouse gas (GHG) emissions from food procurement should be reduced by 40 % by 2020, compared to the 2002 level.

The City of Malmö aims to establish the right conditions for the growth of sustainable businesses through both its purchases and through education for consumers and businesses. Malmö residents will receive information in a number of different formats about food's impact on the climate, health, the environment and about those who produce the food, so that they are more aware consumers. Malmö will also encourage initiatives such as Farmers Markets that increase the contact between producers and consumers.

The policy recognizes that in a future with climate change and high energy costs, local farming will be more important. Therefore, in future development plans farmland within the City of Malmö's district should be preserved for food production. Also, food production in and around the city should be encouraged.

For the shift towards more sustainable meals in public kitchens training for catering staff is needed. The City of Malmö is a partner in the project Vocational Learning for Sustainable Catering Systems (VoLCS) funded with support from the European Community. It is a two year project that aims to produce a toolbox of best practice for use in the EU member countries in vocational training for catering staff. The main aim of this project is to establish a system of cooperation between the different partners involved in catering for the public sector, so that they can learn from each other and create universal tools of best practice. This can be applied to make vocational training as relevant as possible for the catering staff, including such elements as nutrition and sustainability and the job market.

City of Malmö website: http://www.malmo.se/English/Sustainable-City-Development/Sustainable-food-in-Malmo.html

Copenhagen House of Food, Denmark

Denmark has developed an ambitious strategy and policy for environmentally sustainable and healthy food procurement since the 1990s. The Dogme charter was adopted in 2000 and focused on urban sustainable development but had a particular focus on public food procurement. Copenhagen accounts for over half of all public sector food procurement in Denmark and concern for the protection of ground water sources was one of the main reasons behind political decisions leading to change.

In 2001 Copenhagen set organic procurement targets within the framework of the Vision of Copenhagen as Environmental Capital of the World in 2015. The goal of 75% organic food by 2011 has been reached. Now the city works on reaching its target of converting all 900 public kitchens in Copenhagen to 90 % organic. The yearly budget of 40.300.00 EUR that Copenhagen municipality spends on consumption is now strengthening the organic supply chain.

The success in reaching the organic procurement goal is due to the work of the Copenhagen House of Food (CPHHF). It was established in 2007 to improve the quality of public meals in Copenhagen - in nurseries, kindergartens, schools, orphanages, sports halls, nursing homes, in shelters, in community centers and local public canteens. It's purpose is to create a nourishing, sustainable and joyful food culture in the public domain.

The CPHHF currently has 40 employees with different professional profiles, from chefs to communicators, teachers, product developers, nutritionists and kitchen managers, to facilitators and designers. The yearly budget is app. 4.5 million EUR.

Training is one key aspect in the work of CPHHF. Strengthening skills and professionalism in public kitchens has resulted in the overall quality of food and meals being improved and more interesting jobs being created.

The strategy in introducing organic ingredients into public kitchens was not simply to substitute conventional commodities with organic ones, without changing neither diet composition nor cooking processes, but a conversion. For all kitchens it is a process of changing habits, both regarding diet composition and production. This means that heightening skills and developing competencies among kitchen staff was essential for the conversion to organic. In that way an almost 100% conversion to organic food can be implemented without additional expenditure. However, this strategy requires investment in conversion. But these costs are set off after ten years. By comparison, a substitution strategy which simply replaces conventional ingredients with organic normally results in a permanent increase in expenditure between 20% and 30%.

What is done differently in the kitchen?

1. Less meat – different meat
2. More vegetables – greens in season
3. More potatoes – better potatoes
4. Fruit in season – fruit alone is not enough
5. More or different use of bread and grains
6. Beware of the sweet and expensive
7. Composition of the menus – difference between everyday and feast
8. Old housekeeping virtues – rational kitchen operation (less waste)
9. Critical use of full- and semi-manufactures, more ingredients

For more information see The Copenhagen House of Food website http://en.kbhmadhus.dk/
Presentation from CPHHF
http://ec.europa.eu/agriculture/events/2012/food-sustainabilty/hultberg-madsen_en.pdf

Chicago is building a local food system, USA

Chicago is working to build a local food system and is committed to urban agriculture. In 2011, the City Council amended the zoning ordinance to formalize urban agriculture and community gardens as approved land uses, providing clear guidelines on their size and where they can be located. The ordinance officially legalises urban agriculture as an enterprise or a business that hasn't been on the books before. Chicago always had farms within the city limits, but the new ordinance creates a space for economic opportunities within communities, especially in areas where food deserts are a direct result of unemployment and little economic opportunity.

A citywide plan adopted by the Chicago Plan Commission in January 2013, A Recipe for Healthy Places serves as an official roadmap for city planning and policymaking, as well as a guide for groups and individuals seeking to achieve healthier lifestyles through food. In addition to changing the context in which people acquire and eat food, the plan's strategies seek to foster business entrepreneurism, job growth, gardening, and other spin-off benefits that provide for a healthier city.

Since there are currently not enough farmers to grow the food that Chicago needs, the city set up a new "incubator network" in 2013 through which the city is making land available for farmer training.

The training and incubator network will be made up of more than 15 acres of land throughout the city. When in full operation, Farmers for Chicago will school 100 farmers annually. Training and incubator farms will further advance Chicago's goals for urban agriculture by not only creating a local food supply, but teaching marketable job skills including hoop house construction, food processing, compost production, and both retail and wholesale sales. Via the incubator network, farmers will be able to graduate to city-owned land, helping to make use of hundreds of vacant lots created by disinvestment and economic blight.

For further information see:
Article http://grist.org/food/chicago-tackles-the-next-big-challenge-in-urban-ag-growing-farmers/
City of Chicago, A Recipe for Healthy Places
http://www.cityofchicago.org/content/dam/city/depts/zlup/Sustainable_Development/Publications/Recipe_For_Healthy_Places/Recipe_for_Healthy_Places_Final.pdf

Agricultural district in Chicago's South Side, USA

Chicago's planning department is expected to approve the creation of a green belt with a strong focus on urban agriculture within the neighborhood of Englewood. The plan is an element of Chicago's Department of Housing and Economic Development's (DHE) Green Healthy Neighborhoods initiative, designed to shepherd and foster redevelopment in 13 square miles of the South Side. Years of disinvestment and population decline have left the area riddled with 11,000 vacant lots totaling 800 acres.

The hope is that the farm district will help stabilize the South Side by putting vacant land to use and creating entrepreneurial and job opportunities. The area is expected to become a model for other city planners as well as a tourist destination for people interested in farming and growing food.

At the core of the blueprint is the three-mile long New ERA (Englewood Re-making America) Trail, which will serve as the "spine" of the farm district. A former railroad line, the three-mile-long trail will become a linear park with foot and bike trails and farm stands. The area designated as the district begins directly across from the trail, as that's where an estimated 100 acres of city-owned, vacant parcels are located. Over time, they can be converted into farms and other agricultural projects.

The blueprint has been developed by the Washington Park Consortium, a neighborhood group made up of civic and business leaders who have been carefully planning the South Side's future for two years.

To them farms are just the beginning of an overall urban planning project to rebuild the South Side from ground up. The South Side will be built around local produce.

Three half-acre job training farms already exist in the district, as well as the 1.7-acre for-profit Perry Street farm. All grow seasonal vegetables such as tomatoes, kale, lettuce, and beets.

The consortium that set up Perry Street farm is considering establishing more farms, with the earnings going towards building an urban agricultural infrastructure including plans for a food distribution center, and investors are being sought for a processing plant.
The Perry Street farm will feed South Side residents, and shift some portion of the $20 million they are currently spending on food outside the neighbourhood to the local economy.

To help fill the need for trained farmers, the consortium is working closely with Kennedy-King College and the new Washington Culinary Institute on degree programmes associated with agriculture and farming. Restaurants, universities, and hospitals are all potential food and produce customers.

See article 'Chicago's urban farm district could be the biggest in the nation'
http://grist.org/food/chicago-urban-ag-farm-district-could-be-the-biggest-in-the-nation/

Food Sovereignty in Eritrea, Africa

Eritrea is a small coastal State with a 1200 kilometer coastline on the Red Sea. During the 2011/12 famine, Eritrea could feed its population, whilst its neighbours were calling for the 'international community' to assist. Why and how this has come about, is a question many people ask.

After Eritreans won the struggle for independence they started a thorough three-year consultation period (1994-97) on the future development of the country. The result was a carefully crafted constitution, which is the facilitating framework for development from the grassroots. The government has provided the leadership to the full and active participation of its citizens, alongside creating an effective strategy for the Nation Building Project. A strong local democracy is reflected in lively civil society activity[1].

At the moment, Eritrea is rapidly becoming self-sufficient in food, and it is looking to evolve to be a food exporter within the next 5 years. Tax and other restrictions have been placed on food (and other) imports to protect small producers and local markets. A raft of 'green' laws, has been passed by the National Assembly (elected in 1994) covering, for example, the environment, livestock and, especially, access to land – to which every Eritrean citizen is entitled.

Huge investment has been made to introduce modern farming techniques, such as state of the art equipment from modern tractors, to ingenious drip water irrigation systems. Thus, it is now possible to work with three farming seasons in any one year. None of this would work without the introduction of an ambitious programme of water conservation, particularly micro-dams. To support these activities, there is a continuing programme of free education services with an

[1] M. Freudenberg's sister-in-law, a woman farmer in Eritrea, is coming to the end her second term as an elected Member of her Regional Assembly, and, is Chair of the local Farmers Union, and, the Parent/Teachers Association of the local Secondary School.

emphasis on the environment, food, nutrition, and, good health, from primary school level.

Eritreans believe that self-reliance, especially Food Sovereignty, is a key component in the process of building a viable and sustainable nation. This approach should enable as many people as possible to access a livelihood, particularly in areas where agriculture is the key economic activity and constitutes the main source for earning a living.

This information was provided by Michael Freudenberg and Shahinda Hamed, who have family in Eritrea.

For more information see:
Sustainability and The Greening of Eritrea
http://www.eritreacompass.com/eritrean-news/52-environment/245-greening-the-desert-eritreas-manzanar-mangrove-miracle.html
Methods of irrigation http://ecss-online.com/tag/agriculture/page/2/
Water – general reference for a number of articles http://ecss-online.com/tag/water/

Countries setting organic targets

Many countries in Europe recognise the importance of organic farming for a sustainable farming future and have set organic targets, which they support through various policy tools. Amongst these countries are Denmark, the Czech Republic, Austria and France. Scotland has not set organic targets.

Denmark - The Danish Organic Action Plan 2020 launched in June 2012 aims to double the land area that is managed organically from 7 to 12% and ensure that up to 60% of food served in public canteens is organic (currently 15%).
Specific policies support this target. The Danish Rural Development Programme has prioritised organic food and farming to support marketing, food exhibitions, consumer awareness, investments in farm improvements and product development. It also supports training and education for the conversion of public kitchens to organic. In Denmark farmers don't pay for organic certification and inspections. Moreover Denmark allocated ca. €3 million for organic crops breeding for the period 2012 to 2015 and will invest a further ca. €15 million in organic research between 2013 and 2016.

Czech Republic - The Czech Organic Action Plan (2011-2015) aims to increase the land area managed organically to 15% (10.5% in 2010) and the share of organic food on the market to 3%, with Czech produced products representing 60% of organic food sales.
Specific policies support this target. Under the Czech Rural Development Programme project applications that are linked to organic farming get higher scores in funding applications. The Czech Republic has also invested in a national Technology Platform for Organic Agriculture. The Czech Republic recorded one of the highest increases in organically managed land (+163%) between 2000 and 2010 from 165,699 hectares to 435,610 hectares, with the number of organic farms increasing (+525%) from 563 to 3,517 holdings.

Austria - The Austrian Organic Action Plan (2009-2013) sets out a number of targets including increasing the total organically managed land area to 20% (19.69% in 2010) and the organic market share to 10% of all food sales by 2020.
Specific policies support this target. The Austrian Rural Development Programme (RDP) has a particular organic farming support mechanism. Organic farming support accounts for about 12% of the Axis 2 RDP budget dedicated to improving the environment and the countryside. Amongst the funded measures under Axis 1, which improve the competitiveness of the agricultural and forestry sector, are marketing support such as information and promotion activities for organic farms.

France - France's organic farming plan sets out that the area of farmland devoted to organic agriculture should be doubled by 2017. In France organic farming is still a niche, accounting for 1 million hectares or 3.7 percent of farmland nationally at the end of 2012.
The new area objective would be tied to moves to boost research and training in growing techniques, and to bring more organic food into outlets.
The government plans to raise subsidies for organic farmers to 160 million euros annually on average during 2014-2020, compared to 90 million euros last year, to swell their numbers from 25,000 currently.

Source: IFOAMEU RD Factsheet - Organic Approaches to Rural Development Policy
http://www.reuters.com/article/2013/05/31/france-organic-idUSL5N0EC33120130531?goback=.gde_90010_member_245993942

50 ways to fix the food system:

Land Access / Use

Schumacher Centres

Schumacher centres, as far as Nourish is aware, do not exist yet, but are an idea that Nourish is promoting. Taking their name from Schumacher's influential book 'Small is Beautiful', Schumacher centres would demonstrate the economic, environmental and social advantages of unbundling the large, relatively simple, farming systems which characterise larger farms into a cluster of linked farming and growing businesses.

This 'for example' illustrates the idea in relation to a typical Scottish farm with 500 acres of inbye land and 1,000 acres of permanent pasture and rough grazing.

"The inbye land is subdivided into 20 holdings of various sizes in response to proposals from people wanting to run sustainable, right size land-based organic businesses. Residual acres are used by the beef, sheep and cereal enterprises on a 'meanwhile' basis. These businesses currently include:

- Microdairy (12 Jersey cows)
- Beef finisher
- Artisan cheesemaker
- Forest pig enterprise
- Tree nursery and forest garden
- Orchard
- Apple juice and jam maker
- Soft fruit
- Cereals production and hydro-powered mill
- Bakery
- Organic flowers and plants
- Woodland and tunnel mushrooms
- 3 vegetable producers, including one heritage specialist and one salad specialist
- Organic table birds (chickens, ducks, turkeys)
- Organic eggs
- Sheep and wool spinning
- Honey
- Organic trout

Three other service businesses have evolved:

- Small is complicated – an admin and book-keeping service
- Vanishing Point – the invisible camp site
- This little piggy – running market stalls at different events on behalf of several producers

While each of the businesses at Schumacher is independent, all are subject to strict leases which require them to maintain organic standards, to use common services and to support educational activities at the centre.

Each business pays a variable rent, depending on the land and facilities it requires. In addition, each business pays a service charge of around 5% of turnover for marketing, mentoring and maintenance services.

Each operating business is also required to invest an equity stake in the Centre, which is repayable with interest when a business moves on or closes down. The minimum equity stake is £25,000, which can be raised as an interest-free loan from a charitable trust working in partnership with the Schumacher centre.
The current combined turnover of the 23 enterprises is over £1m. The farm previously had a turnover of £125,000 and employed 2 people."

Maine farmland trust, USA

Maine Farmland Trust (MFT) was created in 1999 to help protect farmland. Since that time, MFT's work has expanded beyond farmland protection to also include: a) farm viability; b) farmland access; and c) public outreach and policy.

Farmland protection is critical to the future of farming in Maine. MFT estimates that 400,000 acres of Maine's best farmland (which is almost one-third of all Maine farmland currently in production) will be in transition within the next five years, simply due to the age of the farmland owners. Much of that land could be lost to farming without active intervention.

The future of Maine farming depends on land being affordable for farmers (both new farmers entering the profession and existing farmers who wish to expand or secure land they currently lease). The best strategy to keep land affordable is to permanently protect it through an agricultural easement, so that the land will be forever available at its value as farmland, not as potential development.
To protect farmland MFT also created new grant programmes (designed to encourage local and regional land trusts to do more farmland projects) and created a new Buy/Protect/Sell programme (designed to allow MFT to respond to the threat of farmland that is about to be sold).

Agricultural easement - An agricultural easement is a voluntary, legal agreement between a landowner and a non-profit land trust that restricts use of the land to agricultural production. Most agricultural easements are permanent easements. Such easements ensure that good farmland will remain available for farming forever.

Each easement is unique. What is and is not allowed depends on the specific terms of that easement, which are thoughtfully and thoroughly developed between and landowner and the land trust that will "hold" the easement. However, most agricultural easements allow a great deal of flexibility in how a parcel of land might be farmed.

The principal reason why landowners consider placing an easement on their property is because they want to see their land remain in agriculture after a multi-generation family legacy of farming on this site. In addition they want to support farming in Maine more broadly.

Due to the combined efforts of MFT and Maine Organic Farmers and Gardeners Association farms are being started at a rate nearly four times faster than the

national average, the average age of its farmers is below the national average, and it boasts one of the highest organic-to-conventional-farm ratios in the United States.

For more information see:
MFT website http://www.mainefarmlandtrust.org/
Modern Famer article http://modernfarmer.com/2013/07/farming-vacationland/

Terre de Liens, France

Terre de Liens (Tdl) is a civic organisation established in 2003 to assist organic and peasant farmers in gaining access to land. The organisation also promotes new ways to own and manage land as a common good.

Terre de liens' land is let to farmers who undertake to farm organically or biodynamically or who are peasant farmers committed to respecting the environment. To acquire farmland, Terre de liens has created two financial tools: la Foncière, a solidarity investment company; and le Fonds, an Endowment Trust which collects investment or donations in cash or kind. Through the Foncière and the Fund, Terre de liens now owns, or is in close to acquiring, 102 farm estates, amounting to 2300 hectares, where 180 farmers are working. This has been made possible by the support of 1700 members, about 6500 shareholders, local inhabitants and local authorities.

The status of the Foncière separates those who own the capital from those who decide on how to invest it and run the company. In the case of Tdl, the first group is composed of individual shareholders, non-profit organisations, companies and institutional investors, while the second group is composed of the association Terre de liens, the ethical bank La Nef, and Sjoerd Wartena, co-founder and President of Tdl. This separation ensures that the land bought by La Foncière is forever owned and managed to serve the long-term goal of the association: preserving agricultural land in good heart and sustainable production for the sake of future generations.

Since 2010, the Foncière also receives investments from company saving schemes, which has increased substantially the amounts raised. In any case, a shareholder can, at most, own 5% of the Foncière capital. Half of the capital is owned by a third of shareholders who own between €1,000 and €10,000. This shows that the capital has been raised from a large number of medium-size shareholders who choose to use part of their savings to support the goals of Tdl. As of October 2011, the Foncière has a capital of €23,5 million, owned by 6500 shareholders (hence, the average subscription is €3,610).

For more information see the report Terre de liens
http://www.thegreenhorns.net/wp-content/files_mf/13735952312012_terre_de_liensl.pdf

Parque de la Papa - “Potato Park”, Peru

Forty kilometers outside of Cuzco, Peru, a group of six communities have organized themselves into an agroecological farming collective known as Parque de la Papa (“Potato Park”). Socio-politically, they are attempting to reinvigorate the principles of the *ayllu*, with collective ownership of farmland, waters, pasture, and woodlands, and systems of cooperative labor. These communities feed and clothe themselves and also generate new livelihoods from tourism, seeds, and medicinal plants that in turn enable them to maintain ecosystem services by being able to implement agroecological practices when many workers could otherwise be forced to migrate to urban centers.

The main objective of the *ayllu* is attainment of well-being: social, economic and political well-being through a full life. It expresses a relationship between human beings and their social and natural environments. It means to be in equilibrium with one’s natural and social surroundings and to maintain reciprocity between all beings, including Mother Earth.
The *ayllu* system during the Incan empire was made up of an independent group with three levels of administration: the family level, the group of families that shared the same territory and a larger organizing unit that mobilized all groups. The territorial space of each *ayllu* was based on the resource needs of each group. Organization within each *ayllu* was determined by ecological zones within the territory, thus establishing division of labour and responsibilities among groups and families. Products from different ecological zones were exchanged based on family and group needs. The sharp vertical changes of the Andes create microclimates within relatively short distances. Peoples and even individual communities or families in pre-Columbian times strove to control a number of ecological zones where different kinds of crops could be raised. A community might reside in the altiplano growing potatoes and quinoa, an Andean grain, but might also have fields in lower valleys to grow maize, and pastures miles away at a higher elevation for their llamas, and even an outer colony in the montana to provide cotton, coca, and other tropical products.

Still today, the landscape is organized by ecological zones and the exchange of products allows for the fulfilment of livelihood needs across the zones. Agrarian cycles are used to organize collective labour in each zone so that productivity is maximized by using the available labour force to its full potential. Social organization is based on the exchange of labour and agricultural products between the zones. The principle of reciprocity is thus fundamental in ensuring that each ecological zone is as productive as possible.

The *Parque de la Papa* collective has made a precedent setting agreement with the International Potato Center, a CGIAR (Consultative Group on Agricultural Research) research institute based in Lima, Peru, to repatriate its seed collection for in situ cultivation in the Potato Park. ANDES, the local NGO supporting their efforts, envisages this park as the first step in building an Andean food sovereignty zone.
Website Satoyama Initiative: http://satoyama-initiative.org/en/case_studies-2/area_americas-2/the-ayllu-system-of-the-potato-park-cusco-peru/

50 ways to fix the food system:

Cooperation and Coordination Innovations

Bioveem: Farmer-to-farmer learning to develop organic dairy systems, The Netherlands

Background - This project aimed to strengthen and broaden the organic milk sector and to identify effective system to do so. It involved constructive interaction between pioneering farmers and scientists. Through workshops and on-farm research, individuals on both sides learned new management approaches and shared ideas about 'systems that work'. Before the project started, the researchers and advisors underwent training to help them appreciate the differences in the ways scientists, advisors and farmers think and work. For the project to succeed, they had to adapt their own attitudes and their methods for delivering advice. More importantly, they had to perceive the existing strengths of the farms and farmers, rather than just looking for things to improve.

Activities - To begin with, 17 organic dairy farmers were interviewed to ascertain their particular strategic goals for the development of their farms, and to find out why they had chosen to farm organically. On the basis of these discussions, the farmers were divided into thematic groups. Each farm was treated as an individual case, rather than as just a 'generic' organic farm. The project then facilitated a number of exchanges, through which it was possible to compile a body of new knowledge. The farmers met the researchers and advisors twice a year to discuss methods and fine-tune their work for the project, and they interacted with one another in their different thematic groups. They all agreed to open their books and share their financial data with the whole group. The scientists carried out research on the farms to address any specific questions which arose there. The farmers received training to help them record their reflections and observations. The progress made by each farm was assessed in a series of farm visits; practical questions were discussed and a forum was established for the farmers to exchange their ideas.

Results - The farmers themselves guided the discussions, drawing on their experiences and ideas. This participatory process, in which the organic farmer was seen as the professional expert, produced solutions that addressed the farmers' own specific needs.
Knowledge transfer not only took place between the 17 organic farmers directly involved, but also to other farmers who were invited to join local discussion groups and farm visits. Even non-organic farmers were interested in learning about things such as the use of alternative fodder crops, soil management and weed control, or the reduction in antibiotics use. Conventional farmers and future organic farmers also contributed to the written reports of the project. The attitudinal change among academics was no less significant. Supporting farmers to help themselves; communicating ideas and innovations to non-academics; taking research out of the controlled environment of the university and into the 'uncontrolled' situation of real farm settings: these were all new and important experiences for the researchers and advisors involved.

Source: Agroecology – 10 examples of successful innovation in agriculture.
http://agro-ecoinnovation.eu/wp-content/uploads/2012/11/Eco_Innovation_broch_24pages_ENG_lr.pdf
Bioveem website: www.bioveem.nl (in Dutch)

Farming and nature conservation together, The Netherlands

The Louis Bolk Institute is helping farmers and conservation organisations to develop practical ways of protecting nature alongside economically viable, sustainable agriculture. Two projects in the Netherlands are described here.

Natural Farming (2010 to 2012)
Organic farmers are working closely with conservation organisations in the Dutch province of Noord-Brabant, where three nature reserves are now managed by professional farmers under the coordination of nature conservation organisations. The farmers use natural products, such as reed and grass cuttings from nature reserves for animal bedding and compost, or to feed their livestock. The project thus strengthens regional nutrient cycles and contributes to nature restoration schemes and the growth of organic agriculture. Researchers from the Louis Bolk Institute have assisted the project participants with on-farm research and the organisation of demonstration events to share ideas and promote best practices. The approach has proved successful, with enthusiastic responses from farmers and conservationists alike, and marked improvements in the landscapes and biodiversity.

The Flourishing Farm (2011 to 2014)
This project involves over 500 farmers in a collective effort to increase functional biodiversity on and around their farms. The main aim is to enhance the diversity and abundance of natural enemies of crop pests, a strategy which in turn reduces the need for chemical pesticides. The farmer-collective receives assistance from the Louis Bolk Institute, as well as local conservation organisations, an association of organic dairy farmers and two other farmers associations.
In 2011 the farmers established around 600 km of wild flower field margins, and the number of participants taking this approach continues to rise. The farmers use special flower seed mixtures designed to attract insects such as lacewings, hoverflies and parasitic wasps – all of which are important aphid predators. Already, three-quarters of the conventional participants have reduced their use of pesticides. The resulting growth in the insect populations benefits not only the farmers, but also the aquatic fauna in surrounding waters and the often threatened insectivorous farmland fauna.

Website of the Louis Bolk Institute:
www.louisbolk.org/index.php?page=agriculture-and-nature-conservation

A coordinated approach to agri-environmental agreements, Italy

Italy's Valdaso territorial agri-environmental agreement (TAEA) shows how a coordinated approach with joined-up thinking can generate a collection of long-term socio-economic and environmental benefits. Some 100 farmers are participating in Valdaso's TAEA which was designed as a coherent initiative that integrates agri-environment payments with a capacity building programme for the farmers who are using the payments. The regional farm advisory service carries out the capacity building through on-farm visits and workshop training sessions.

Valdaso's agri-environment initiative is focused on reducing the use of agri-chemical inputs like toxic pesticides. The area targeted is an environmentally-sensitive zone containing many orchards where pest control is a commercial necessity for fruit growers. The Rural Development Programme initiative encourages farmers to adopt alternative and integrated pest management techniques based on the application of 'mating disruption' methods. Other forms of sustainable agriculture, which help to protect soil quality, as well as control fertiliser inputs, are also included in the Valdaso TAEA.

The more farmers participate the more effective is the integrated pest management because mating disruption methods work best when carried out collectively on a territorial scale. If neighbouring farms use the same pest control approaches crops are less likely to be attacked by pests that move from land located next to each other.

Engaging local stakeholders early on in the design process has helped to spread knowledge at the territorial level and resulted in increasing effectiveness and longevity of the strategies proposed. It promoted pro-active engagement by farmers.

The on-farm visits and workshop training sessions provided a platform for the farmers to meet and share experiences. To work collectively for the good of their shared territory has promoted a positive 'virtuous circle' that led on to other forms of cooperation. For example, the group of farmers started to market their fruits as quality branded products.

Source: European Agricultural Fund for Rural Development. Examples of projects providing environmental services. http://static.suske.at/86/download/aktuelleprojekte/netzwerkeuropa.pdf