Sustainable Food Production and Management

This good practice is relevant to European Green Capital Award indicators:

Why Sustainable Food?

Both globally and in Europe, food production commonly exceeds environmental limits for biodiversity, nitrogen and phosphorus loss, greenhouse gas emissions and water extraction. Other associated issues include food security, the degradation of soil resources and land use change.

The development of a sustainable food production and management system has been identified as a goal to address these issues in the Europe 2020 Strategy and the Roadmap to a Resource Efficient Europe. Developing such a system will also contribute to a more competitive, low-carbon economy and increase the resilience of the EU food system. This is particularly important in light of increasing resource scarcity and economic instability. EU funding is available to support such initiatives and further information can be found at: http://ec.europa.eu/environment/funding/intro_en.htm

Among other goals, sustainable food initiatives aim to increase resource efficiency and consumer health, decrease food wastage, give value to food waste, achieve environmental protection, generate renewable energy, and create closed loop food systems.

Sustainable food initiatives have been developed in Lisbon, Portugal and Ghent, Belgium. Both cities have implemented a variety of measures which are governed and influenced by a central food policy.

Lisbon: Food Waste Management

Introduction and Objectives

Since 2010, the City of Lisbon has embraced a strong commitment to food waste prevention in order to decrease its associated footprint on natural resources. This is aligned with the Food and Agriculture Organisation of the United Nations (FAO) and leveraged by the FAO Office in Lisbon which was established in October 2009.

As part of their commitment, the City has implemented a series of initiatives that focus on measures to collect and reduce food waste and are also supporting local initiatives or citizens’ movements. One such movement is the ReFood Movement, a project born in Lisbon in 2011, has grown into a highly successful food waste prevention initiative currently operating on a large scale in Portugal.

It is a humanitarian project that collects donated surplus food from restaurants and businesses and delivers it to people in need at a local level. The emphasis of this project is on volunteerism; and as such it is not financed by the municipal budget.

In January 2015, the Municipality approved the Municipal Plan Against Food Waste, where members of the City Council, national authorities, parishes and NGOs, including the ReFood Movement, took part in Lisbon’s Municipal Commissariat Against Food Wastage. The primary objective of this is to implement a series of interconnected measures for the collection and reduction of food waste by working with stakeholders in the city to implement specific actions. By doing so they aim to optimise the collection of food surpluses in Lisbon and to widen the reach and level of distribution of food to people in need.

Methodology

Lisbon’s Municipal Commissariat against Food Wastage was first established in 2014, it developed the following steps, outlined in Figure 1 to achieve the City’s goals in relation to food waste prevention.

Key Benefits

Overall, the ReFood project is contributing to the Circular Economy through its resource efficient activity and promotion of food waste prevention and a more sustainable future whilst tackling food poverty by helping communities and those in need. In 2015, the network collected and delivered meals to families in need. The municipality is a key stakeholder, belonging to an extensive network of food donors and citizen volunteers, beneficiaries, pioneers and logistic partners.

Recommendations

The ReFood Movement is a transferable model that can be adapted by other municipalities and cities. This project is a good example of the potential for and success of working together through volunteerism and humanitarian support to decrease the food wastage footprint and to help the people in need.

Future Plans

Lisbon is continuing its commitment and work to tackle the issue of food waste through the Horizon 2020 FORCE Project: Cities Cooperating for a Circular Economy. As part of this Lisbon will be responsible for developing an Online Network Tool application that will manage information related to surplus food. This application will gather information about surplus food products and meals; food donors; producers of organic and garden waste; and information about the beneficiaries. It will bring together information about parish councils, charity institutions and NGOs involved in this network.

Figure 1: Lisbon’s Food Waste Prevention Methodology.

Figure 2: The key benefits realised through Lisbon’s ReFood network.
The key objective of this tool is to close the food and bio-waste loop to allow for more efficient management of these waste streams. The application will facilitate innovative food management and reduce food waste directly from where it is produced. Food will be catalogued and that which can be consumed will be diverted from disposal. This will result in a reduction of food waste and the delivery of food in good condition to people in need. The project will take place over a four year period, 2016 to 2020.

Lisbon’s Food Waste Initiative also has the potential to expand its approach and to connect humanitarian and charitable network chains with the additional environmental, economic and social benefits of the scheme. In Lisbon, reuse of clothing and toy donations has been increasing through channels such as church and social associations. The city recently promoted a reuse platform in collaboration with 21 charity shops and is installing large containers as donation points in partnership with district councils and NGOs. The ReFood initiative could be integrated and coordinated with these schemes.

Ghent: Food Production and Waste to Energy

Introduction and Objectives

In 2013, the city of Ghent initiated the Gent en Garde Food Policy. This Policy and related initiatives aim to create a shorter, more transparent food chain and more social added value for food initiatives, reduce food waste, optimise the reuse of food waste as raw materials, and so make the entire food chain much more sustainable.

As a result, in Ghent, many new sustainable food and urban farming initiatives have emerged. These include the Ghent Old Docklands Project, which produces biogas from food waste and waste water, and the Urban Smart Farm which produces food on an unused urban lot using hydroponics.

Methodology

Ghent’s approach to food production and management is underpinned by the key steps outlined below:

Policy and Governance:
- The development of the Gent en Garde Council and Food Policy.

Specific Goals:
- Translation of the Policy into concrete operational goals through involvement of companies, organisations, citizens, associations, knowledge institutions, cultural centres and governments.

International Cooperation:
- Signing and support for the Milan Urban Food Policy Pact;
- Becoming an active partner of the RUAf Global Partnership for Sustainable Urban Agriculture and Food Systems;
- Active participation in the Workgroup Food of Eurocities Network;
- Engagement and membership with the Global Lead City Network on Sustainable Procurement;
- Partnership in the EU Funded Food Smart Cities for Development project.

Figure 3: Ghent’s Initiatives for Sustainable Food Production and Management.

Framework Implementation:
- Formation of a Community Supported Agriculture Network;
- Establishment of a Local Food Council with stakeholders from a wide range of backgrounds. These include the farmers union, NGOs, researchers, retail networks and cooperative initiatives.

Community Engagement and Support:
- Schemes to promote sustainable food habits;
- Support schemes for local food production efforts and reduction of waste;
- Rollout of schemes which encourage local food production and conservation.

Challenges

Ensuring legitimacy of a sustainable food scheme, along with buy-in from citizens and other stakeholder groups can present challenges. Sustainable food systems are inherently complex and a lack of knowledge on food production, distribution and consumption patterns can be a limiting factor. Matching production with demand can also be challenging, as can incorporating and coordinating existing initiatives with food policies, plans and municipal support.

Recommendations

These projects offer replicable models that can be adapted by other municipalities or communities. The need to tailor such schemes to the individual requirements of a city is emphasised. Useful steps to take when implementing such projects would include the compilation of available data and information on the existing food system, the inclusion of all stakeholder groups in planning and implementation to ensure a broad support base, and the development of a strong knowledge exchange network to encourage learning and expansion of the project. Establishing a strong link between urban markets and countryside production is very important when developing sustainable food systems.

Key Projects

Ghent Old Docklands Project

The Zero Waste Water with Energy and Nutrient Recovery system (ZAWENT) is implemented by a sustainability-themed urban neighbourhood development to generate one third of its energy. This system sources food waste and other organic waste from the residents and uses it to generate biogas through use of an anaerobic digester. The biogas is then used as fuel to generate heat and power. The system also recovers nutrients from the waste for use as fertiliser for food production. The remaining two thirds of the energy required by the neighbourhood are sourced from the residual heat of a nearby soap factory, transported by a heat network. The ZAWENT system also purifies and recycles waste water which is recycled by a nearby company.

Urban Smart Farm

A city-farm has also been developed in Ghent. The Urban Smart Farm uses LED illuminated aquaponics systems to produce vegetables, herbs, micro greens, fish and shrimp in a sustainable way. Grow trays and fish tanks are arranged vertically to minimise the amount of space used. Water for fish production is heated using solar power, and organic waste from the fish is converted into plant fertiliser using tiger worms and bio-filtration. Used water is purified and re-circulated within the system to prevent wastage. The farm also hopes to integrate with social employment initiatives to provide opportunities to vulnerable jobseekers. In 2015, the farm won the annual Ghent Short Food Chain competition and received a £15,000 prize from the City.