



The evolution of food donation with respect to waste prevention

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ABSTRACT

The donation of food which is still edible can be seen as a specific application of urban mining as food is recovered for its original purpose – human intake. There are several projects implemented worldwide but due to a lack of data, scientific literature about the topic is rare. This paper summarises briefly the evolution of food donation activities and gives information on the differences and similarities of current organisations distributing food to people in need as well as the political, legal, social and logistical barriers and incentives which occur with respect to this topic. A concept for a food donation network is presented and impact on ecology, economy and society is discussed.

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1. Introduction

Urban mining is defined as the utilisation of anthropogenous material deposits, such resources are commonly recovered after they have passed through the economic system. At the end of their life span, instead of being wasted they can be recycled, e.g. into secondary raw materials or energy by urban mining. The present paper deals with a different material which can be recovered from the economic system before it is simply thrown away – food. The notion is that the food is not recycled to create compost or energy but used for the original purpose for which it was produced, i.e. human consumption. The wastage of edible food due to irregularities or blemishes, the current market situation, general overproduction, an error in packaging mass or the poor management of food in households has been recognised as an important topic in numerous countries. It is often stated that food waste is a result of our contemporary, affluent society and the loss of respect concerning food.

The present paper summarises the evolution of the donation of food from a historical point of view, discusses the differences and similarities of organisations now dealing with the donation of edible food to people in need as well as the political, legal, social and logistical barriers and incentives which occur with respect to this topic. Basic information is given at an international level, national examples underline the general conclusions. By presenting an Austrian concept taking into account all three aspects of sustainability, the paper aims to show best-practice which is complemented by data on the situation of Austrian organisations dealing with the donation of food. The paper provides information on a food waste

prevention measure which can be seen as urban mining – recovering perfectly edible food from a mismanaged society.

2. Methodology and definitions

The historical overview is based on a review covering a large array of literature from nutrition, health and social development, primarily European. A lack of data means only a qualitative discussion can be initiated but the main influencing factors in any case have been identified. The contemporary situation of food donation to the needy is based partly on a review of literature and internet material and also on the intensive cooperation or personal communication between the author and the organisations mentioned. The concept of the donation of edible food which was designated for wastage in Austria was developed by the author during a project funded by the Initiative Abfallvermeidung in Wien on behalf of the City of Vienna in 2004 (Schneider and Wassermann, 2004). The up-to-date situation and current implementation are demonstrated using personal communication as well as data from literature from 2010 and 2011. The impact of food donation on ecology, economy and society is discussed using information from investigations carried out under the supervision of the author in 2011, from a literature review as well as personal communication.

The paper deals with the topic of edible food which was designated to be wasted due to different reasons such as wrong size, colour or shape, overproduction, low prices on the market, small blemishes and exaggerated attitudes with respect to freshness. These products are handed over by the farmer or company to organisations which distribute the foodstuff to people in need. Within the paper these activities are called “donation of edible food”.

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3. Historical evolution

The fact that food has been wasted throughout civilisation is summarised in [Schneider \(2011a\)](#) – the main difference with the modern situation is that the reasons for the wastage could often not be controlled by human beings. The causes were bad weather conditions, missing infrastructure, a lack of technologies for preservation as well as hygienic conditions. The spoilage of food could thus not be avoided. In addition, some society groups handled food careless and without any esteem. The notions of former generations with respect to hygienic and ethical aspects were completely different compared to current legislation and state-of-the-art. Food which was no longer suitable for consumption by human beings at a specific level of society was given to people with a lower social position. Partly, food was therefore consumed and was not wasted. Nowadays, such measures could not be implemented due to ethical as well as legal aspects.

In the 13th century, it is documented that there was a lack of wheat in Genoa and a corresponding surplus in Sardinia. The people responsible for the nutrition of the inhabitants of the City of Genoa decided to decrease the population and transported foreigners and poor people from Genoa to Sardinia ([Montanari, 1999](#)). It would not have been possible to transport the surplus of wheat to Genoa and from the City's point of view to dislocate the poor people also solved the problem more “sustainably”.

In the 14th century, Peter IV of Aragon ordered his subjects to separate stale and mouldy bread, acetified wine, spoiled cheese and fruit and similar food for donations to people in need. This order was predicated on the idea that the lower classes could eat spoiled food without any harm. This hypothesis was also shared by medical doctors at that time ([Montanari, 1999](#)). During the 15th century some food regulations were set into force. One of them was a law to ensure the mass and quality of certain loaves, as bread was a staple food product. Underweight loaves were confiscated by the authority and given to the city hospital for example. In addition the baker responsible was punished harshly ([Schubert, 2006](#)).

In the 17th century, the upper class used to have so called “tablescapes” (in German “Schauessen”) which were dishes made from food, but not intended for consumption at the dinner or even no longer edible, e.g. because of the colours used or hardeners. Items such as marzipan, sugar, butter and even certain birds were used to produce buildings, landscapes, sculptures and other decorations to be placed on the table ([Schwendter, 1995](#); [Döbler, 2000](#)). Even if the decorative dishes were still edible, most of them were removed from the tables without being tasted. One reason was unsightly appearance of those dishes if portions of the artwork had been offered to guests. In addition, the kitchen and the dining hall were located in large distance from each other in some locations and therefore all the dishes arrived already cold on the table. Nevertheless, historic documents mention that a lot of these dishes were stolen by staff on the way back to the kitchen anyway ([Schwendter, 1995](#)). Whether they ate the dishes themselves or sold them on has not been recorded. Documents from the late 18th century can prove that the left-overs from the Viennese Imperial Court were first offered to the servants, secondly to special restaurants where the public could eat the dishes and finally the rest was given to beggars and hospitals in Vienna ([Bauer, 2009](#)).

One can imagine that issues such as hygiene, observance of the cooling chain or contamination by vermin were not very important in those days. Although the conditions of donation have completely changed in the last centuries, the donation of food which was designated for wastage often faces reservation and resistance.

4. Modern donation of food to people in need

Since the late 1960s food banks and food rescue programs have been established in the United States of America. A retired businessman called John Von Hengel worked as a volunteer at a local soup kitchen in Phoenix, Arizona. He recognised that while they did not have enough food to supply the people in need, surrounding restaurants and supermarkets were throwing away good food with only small blemishes. He started cooperating with local companies and soon founded the first “food bank”. Typically, food banks are organisations that solicit food and grocery products from a variety of sources, receive and store the products in a warehouse and distribute it to impoverished families and individuals through charitable human service agencies. Food banks often collect less perishable foods such as canned goods due to their supra-regional range of activities and the longer shelf life of those products. Food rescue programs tend to collect perishable and prepared food and distribute it to organisations that serve hungry people. The organisations served by food banks and food rescue programs include community centres, soup kitchens, shelters, childcare centres, food pantries and senior programs ([Feeding America, 2011](#)). Some of the social organisations process the food they receive and supply people in need coming to the organisation with a ready-to-eat dish. Others, such as a food pantry, provide clients with food and grocery products for home preparation and consumption ([Feeding America, 2011](#)).

The idea was spread all over the world and a wealth of similar activities can be found across the globe. People in need can also be found in industrialised countries and conversely food is also wasted in developing and emerging countries. The names of social welfare organisations worldwide and the wording of activities when handling the donated products vary strongly, thus a clear definition or classification with respect to names can hardly be given. In the following, some examples should show the differences and the similarities of organisations currently dealing with the donation of edible food to people in need.

4.1. The example of Feeding America, USA

In 2012, the largest domestic hunger-relief organisation in the United States of America is Feeding America which is a national network of more than 200 food banks operating within all 50 states as well as the District of Columbia and Puerto Rico. It coordinates the distribution of edible food and grocery products with the help of 61,000 agencies which supply 37 million people in the US. Three billion pounds of food were collected and distributed to people in need in 2009 ([Feeding America, 2011](#)). They publish an annual report which summarises activities and also results from surveys among the associated social agencies. Many different models of how to distribute food to people in need exist under the umbrella of Feeding America.

4.2. The example of European Food Banks

The European Federation of Food Banks was established in 1984 and more than 20 years later there are 247 food banks operating in 21 European countries. According to the reports given on their website, in sum 401,000 tons of food were collected and distributed to 31,000 social welfare organisations in 2011. It is estimated that these products are worth several hundred million euros and approximately 5.2 million people are supported by these goods (European Food Banks, s.a.). Dairy products contribute most to the amount donated with a share of 36% in 2006; the next largest product group is biscuits, cereals and starchy food with a share of 31%, and the third largest group is fruits and vegetables at 15%

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